**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Information Technologies**


**Diploma Thesis**

# Cloud-Based Multimedia Content Protection System

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

# DIPLOMA THESIS ASSIGNMENT

Rakesh Reddy Chennuru

Systems Engineering and Informatics
Informatics

Thesis title

**Cloud-Based Multimedia Content Protection System**

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**Objectives of thesis**

The main goal is to propose a new design for large-scale multimedia content protection systems. Our design leverages cloud infrastructures to provide cost efficiency, rapid deployment, scalability, and elasticity to accommodate varying workloads. This system can be used to protect different multimedia content types, including 2-D videos, 3-D videos, images, audio clips, songs, and music clips. This system will have to be deployed on private and/or public clouds. Our system has two novel components: (i) method to create signatures of 3-D videos, and (ii) distributed matching engine for multimedia objects. The signature method creates robust and representative signatures of 3-D videos that capture the depth signals in these videos and it is computationally efficient to compute and compare as well as it requires small storage. The distributed matching engine achieves high scalability and it is designed to support different multimedia objects. This implementation the proposed system and deployed it on two clouds: Amazon cloud and our private cloud.

**Methodology**

It will be our experiments with more than 11,000 3-D videos and 1 million images show the high accuracy and scalability of the proposed system. In addition, we compared our system to the protection system used by YouTube and our results show that the YouTube protection system fails to detect most copies of 3-D videos, While our system detects more than 98% of them. This comparison shows the need for the proposed 3-D signature method, since the state-of-the-art commercial system was not able to handle 3-D videos

**The proposed extent of the thesis**

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**Keywords**

Videos , Three-dimensional displays , Multimedia communication , Streaming media , Cloud computing , Engines

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KHELIFI, Fouad et al. Secure and privacy-preserving data sharing in the cloud based on lossless image coding. Signal Processing. 2018, vol. 148, s. 91-101. ISSN 0165-1684.

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Prague on 31. 03. 2021

**Declaration**

I declare that I have worked on my diploma thesis titled " Cloud-Based Multimedia Content Protection System" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 31.03.2021 _____

**Acknowledgement**

I would like to thank my supervisor doc. Ing. Vojtěch Merunka, Ph.D.. for his advices and supporting during my work on this thesis.

# Cloud-Based Multimedia Content Protection System

**Abstract**

We propose another plan for huge scope multi-media content security frameworks. Our plan uses cloud foundations to give cost-productivity, fast organization, adaptability, and versatility to oblige changing jobs. The proposed framework can likewise ensure distinctive multi-media content sorts, including 2-D recordings, 3-D recordings, pictures, sound bites, tunes, and music cuts. The framework can likewise convey private and public mists. Our framework has two novel segments: (I) strategy to make marks of 3-D recordings, and (ii) conveyed coordinating with motor for multi-media objects. The marking strategy makes vigorous and agent marks of 3-D recordings that catch the profundity signals in these recordings, and it is computationally effective to figure and look at and requires little stockpiling. The disseminated coordinating with motor accomplishes high versatility to help distinctive multi-media objects. We carried out the proposed framework and conveyed it on two veils of mist: Amazon cloud and our private Cloud. Our examinations with over 11,000 3-D recordings and 1 million pictures show the proposed framework's high precision and adaptability. Also, we contrasted our framework with the assurance framework utilized by YouTube, and our outcomes show that the YouTube security framework neglects to recognize most duplicates of 3-D recordings, while our framework distinguishes over 98% of them. This correlation shows the proposed 3-D mark technique requirement since the best-in-class business framework could not deal with 3-D recordings.

**Watchwords:** Recordings, Three-dimensional showcases, Sight and sound correspondence, Streaming media, Distributed computing, Motors

# Cloud-Based Multimedia Content Protection System


## Abstrakt

Navrhujeme další plán rámců zabezpečení multimediálního obsahu s velkým rozsahem. Náš plán využívá cloudové základy k zajištění nákladové produktivity, rychlé organizace, přizpůsobivosti a všestrannosti k zajištění změn úloh. Navrhovaný rámec může rovněž zajistit charakteristické druhy multimediálního obsahu, včetně 2-D nahrávek, 3-D nahrávek, obrázků, zvukových skusů, melodií a hudebních střihů. Rámec může rovněž zprostředkovat soukromé a veřejné mlhy. Náš rámec má dva nové segmenty: (I) strategii vytváření značek 3D nahrávek a (ii) zprostředkování koordinace s motorem pro multimediální objekty. Strategie značení vytváří energické a agentické značky 3-D nahrávek, které zachycují signály hloubky v těchto nahrávkách, a je výpočetně efektivní zjistit a podívat se na ně a vyžaduje malé zásoby. Diseminovaná koordinace s motorem dosahuje vysoké všestrannosti, aby pomohla charakteristickým multimediálním objektům. Provedli jsme navrhovaný rámec a přenesli jej na dva závoje mlhy: cloud Amazon a náš soukromý cloud. Naše vyšetření s více než 11 000 3-D nahrávek a 1 milionem obrázků ukazují vysokou přesnost a přizpůsobivost navrhovaného rámce. Rovněž jsme porovnali náš rámec s rámcem záruky používaným YouTube a naše výsledky ukazují, že bezpečnostní rámec YouTube zanedbává rozpoznávání většiny duplikátů 3D nahrávek, zatímco náš rámec rozlišuje více než 98% z nich. Tato korelace ukazuje navrhovaný požadavek na techniku 3-D značky, protože nejlepší obchodní rámec ve své třídě nemohl zvládnout 3-D nahrávky.



**Heslová slova:** Nahrávky, trojrozměrné vitríny, zraková a zvuková korespondence, streamovaná média, distribuované výpočty, motory

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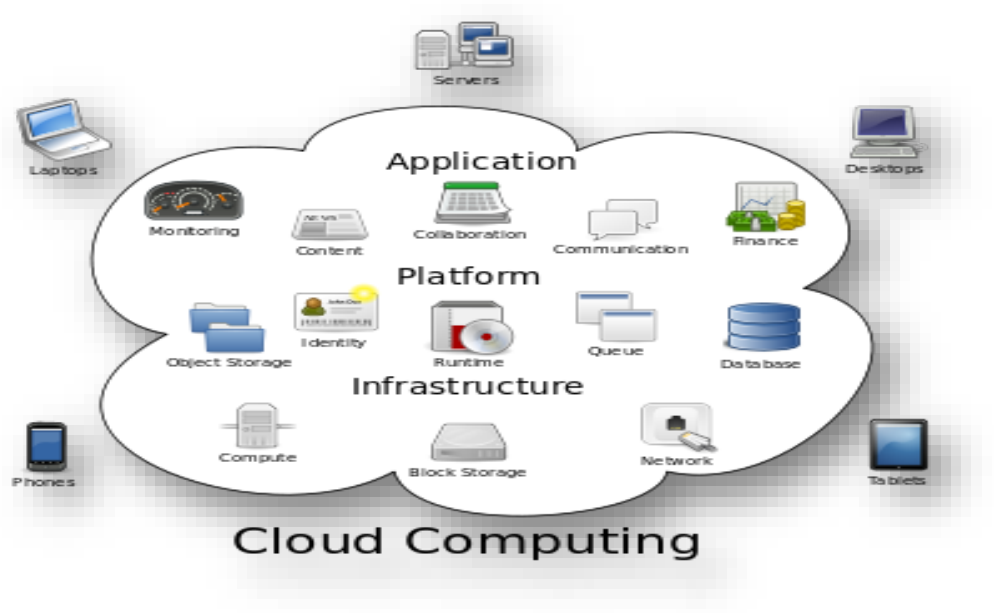
# 1. Introduction

Advances in preparing and recording hardware of media content just as the accessibility of free internet facilitating destinations have made it generally simple to copy protected materials like recordings, pictures, and music cuts.

Illicitly reallocating media content over the Internet can bring about a critical loss of income for content makers. Finding wrongfully made duplicates over the Internet is a complex and computationally costly activity, in view of the sheer volume of the accessible interactive media content over the Internet and the intricacy of contrasting substance with recognizing duplicates.

**Cloud computing** utilizes figuring assets (equipment and programming) conveyed over an organization (usually the Web). The name comes from the ordinary utilization of a cloud-molded image as a deliberation for the mind-boggling framework it contains in framework charts. Distributed computing depends far off administrations with a client's information, programming, and calculation. Distributed computing comprises equipment and programming assets made accessible on the Web as overseen outsider administrations. These administrations usually give admittance to cutting-edge programming applications and excellent quality organizations of worker PCs.




Structure of Cloud Computing

## How Cloud Computing Works?

The objective of Cloud computing is to apply conventional supercomputing, or superior processing power, ordinarily utilized by military and exploration offices, to perform several trillions of calculations each second in customer situated applications like monetary portfolios, to convey customized data, to give information stockpiling or to control massive, vivid PC games.

Distributed computing utilizes organizations of enormous gatherings of workers, ordinarily running minimal effort customer PC innovation with specific associations with spread information preparing errands across them. This standard IT foundation contains huge pools of frameworks that are connected. Frequently, virtualization procedures will expand the force of distributed computing.

## 1.1.Characteristics and Services Models:

The notable attributes of distributed computing dependent on the definitions given by the National Institute of Standards and Terminology (NIST) recorded underneath:

• **On-request self-administration:** A customer can singularly arrange to figure abilities, for example, worker time and organization stockpiling, depending on the situation naturally without requiring human connection with each specialist co-ops.

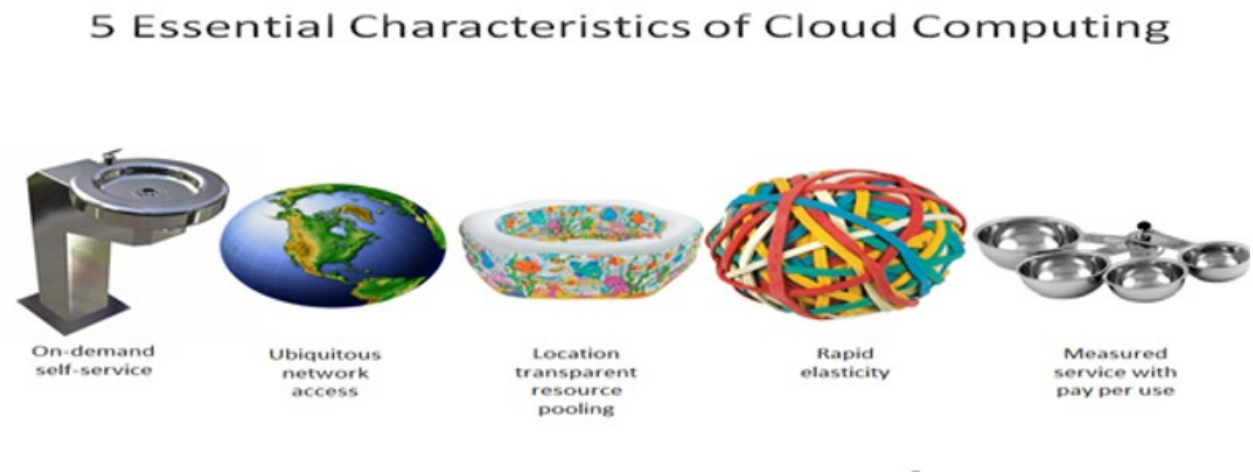
• **Broad network access:** Abilities are accessible ludicrous and gotten to through standard components that advance use by heterogeneous dainty or thick customer stages (e.g., cell phones, workstations, and PDAs).

• **Resource pooling:** The supplier's registering assets will serve numerous purchasers utilizing a multi-inhabitant model, with various physical and virtual assets progressively allocated and reassigned by buyer interest. There is a feeling of area autonomy in that the client, by and large, has no control or information over the specific area of the gave assets; however, might have the option to determine the area at a more elevated level of reflection (e.g., nation, state, or datacenter). Instances of assets incorporate capacity, preparing, memory, network data transmission, and virtual machines.

• **Rapid flexibility:** Capacities can be quickly and flexibly provisioned, now and again, proportional out and quickly delivered to scale rapidly. To the shopper, the abilities accessible for provisioning frequently seem limitless and can be bought in any amount whenever.

• **Measured administration:** Cloud frameworks naturally control and improve asset use by utilizing a metering ability at some degree of deliberation fitting to the kind of administration (e.g., capacity, preparing, transfer speed, and active client accounts). An

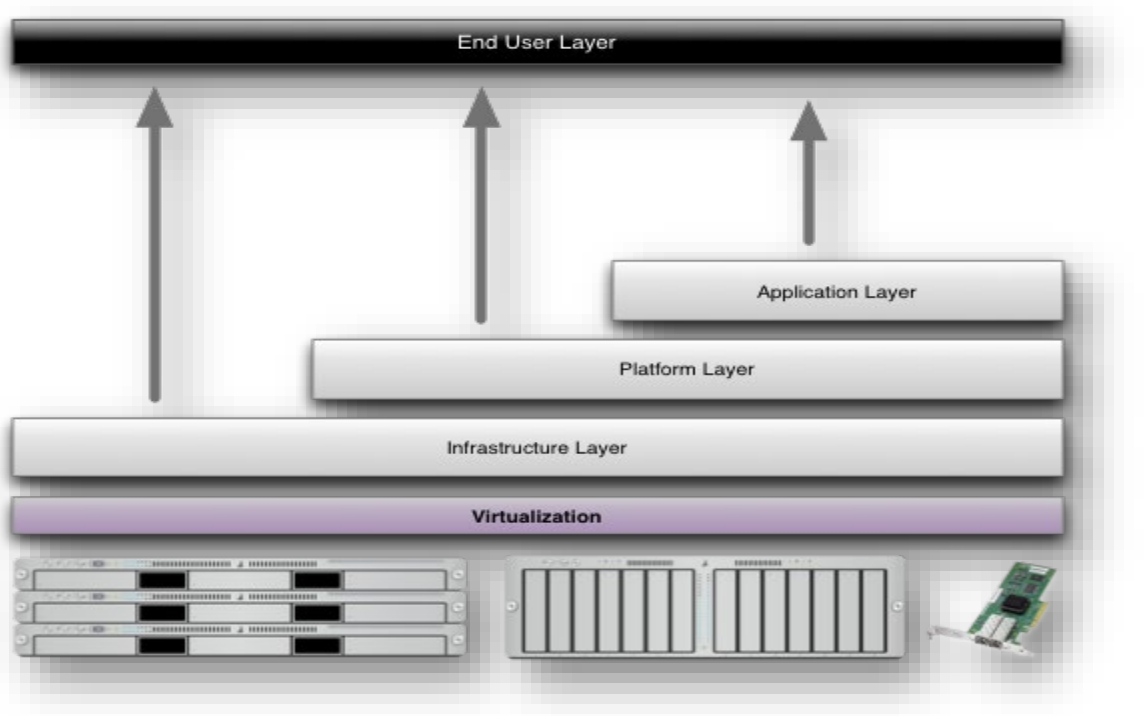
asset can be seen, controlled, and revealed, giving straightforwardness to both the supplier and buyer of the used help.




Characteristics of Cloud Computing

## Services Models:

Cloud Computing contains three distinctive assistance models, specifically Foundation as-Administration (IaaS), Stage as-a-Administration (PaaS), and Programming as-a-Administration (SaaS). The three help models or layers by an end-client layer typifies the end-client viewpoint on cloud administrations. The model of the figure appears underneath. On the off chance that a cloud client gets to administrations on the framework layer, she can run her applications on cloud foundation assets and stay answerable for the help, support, and security of these applications herself. If she gets assistance on the application layer, these errands are regularly dealt with by the cloud specialist organization.




Structure of Service Models

## 1. 2. Benefits of cloud computing:

1. **Achieve economies of scale** – increment volume yield or efficiency with fewer individuals—cost per unit, undertaking, or item plunges.
2. **Reduce spending on innovation framework.** Keep up simple admittance to data with insignificant forthright spending. Pay more only as costs arise (week by week, quarterly, or yearly) because of interest.
3. **Globalize the labor force for barely anything.** Individuals worldwide can get to the Cloud if they have a Web association.
4. **Streamline cycles.** Complete more work in less time with fewer individuals.
5. **Reduce capital expenses.** There is no compelling reason to spend significant cash on equipment, programming, or permitting expenses.
6. **Improve availability.** To approach whenever, anyplace, making life such a ton simpler!

7. **Monitor tasks all the more adequately.** Stay inside the financial plan and in front of fulfillment process durations.
8. **Less faculty preparation is required**. It takes fewer individuals to accomplish more work on a cloud, with a bit of expectation to absorb information on equipment and programming issues.
9. **Minimize the authorizing of new programming.** Extend and develop without the need to purchase costly programming licenses or projects.
10. **Improve adaptability.** It can alter course without genuine "individuals" or "monetary" issues in question.

**Advantages:**

1. Price: Pay for just the assets utilized.

2. Security: Cloud cases are disconnected in the organization from different examples for improved security.

3. Performance: Occurrences can be added immediately for improved execution. Customers approach the thorough assets of the Cloud's center equipment.

4. Scalability: Auto-convey of cloud occurrences at whatever point required.

5. Uptime: Utilizations, various workers for most extreme redundancies. If there should arise an occurrence of worker disappointment, cases can be made naturally on another worker.

6. Control: Ready to login from any area. Worker depiction and a product library will send custom occurrences.

7. Traffic: Manages a spike in rush hour gridlock with the snappy arrangement of extra cases to deal with the heap.

# 2. Objectives and Methodology

## 2.1 Objectives:

The fundamental objective is to propose another plan for huge scope multimedia content insurance frameworks. Our plan uses cloud frameworks to give cost-proficiency, fast arrangement, adaptability, and flexibility to oblige changing responsibilities and can be utilized to ensure diverse multi-media content sorts, including 2-D recordings, 3-D recordings, pictures, brief snippets, melodies, and music cuts. This framework can send on private and public mists. Our framework has two novel parts: (I) strategy to make marks of 3-D recordings, and (ii) disseminated coordinating with motor for multi-media objects. The marking strategy makes strong and agent marks of 3-D recordings that catch the profundity signals in these recordings, and it is computationally productive to process and analyze and requires little stockpiling. The disseminated coordinating with motor accomplishes high versatility and supports diverse multi-media objects. Execution of the proposed Framework and conveyed it on two veils of mist: Amazon cloud and our private Cloud.

## 2.2 Methodology:

Our trials with over 11,000 3-D recordings and 1 million pictures show the proposed framework's high exactness and versatility. Likewise, we contrasted our framework with the protector framework utilized by YouTube, and our outcomes show that the YouTube protector framework neglects to distinguish most duplicates of 3-D recordings, While our Framework recognizes over 98% of them. This examination shows the proposed 3-D mark strategy requirement since the cutting-edge business Framework could not deal with 3-D recordings.

# 3. LITERATURE REVIEW

## 1) Distributed index for matching multi-media objects

**AUTHORS:** A. Abdelsadek

This paper presents the plan and assessment of DIMO, a dispersed framework for coordinating with high-dimensional multi-media objects. DIMO gives multi-media applications the vital capacity of figuring the K closest neighbors for enormous scope datasets. It likewise permits multi-media applications to characterize application-explicit capacities to handle the registered closest neighbors further. DIMO presents a novel technique for parceling, looking, and putting away high-dimensional datasets on circulated foundations that help the MapReduce programming model. We have carried out DIMO and widely assessed it on Amazon bunches with machines going from 8 to 128. We have tried different things with massive datasets of sizes up to 160 million information focuses removed from pictures, and each point has 128 measurements. Our exploratory outcomes show that DIMO: (I) brings about high accuracy when analyzed against the ground-truth closest neighbors, (ii) can flexibly use shifting measures of registering assets, (iii) does not force high organize overheads, (iv) does not need sizeable fundamental memory in any event, for preparing enormous datasets, and (v) balances the heap across the pre-owned figuring machines. DIMO outflanks the nearest framework in writing by a vast edge (up to 20%) in the figured closest neighbors' accomplished usual accuracy. Besides, DIMO needs three sizes fewer capacity orders in any event than the other framework, and it is all the more computationally proficient.

## 2) Distributed Kd-Trees for retrieval from extensive image collections

**AUTHORS:** M. Aly, M. Munich, and P. Perona

Distributed Kd-Trees is a technique for building picture recovery frameworks that can deal with many pictures. It isolates the Kd-Tree into a "root subtree" that lives on a root machine and a few "leaf subtrees," each living on a leaf machine. The root machine handles approaching questions and ranches out highlight coordinating to a proper tiny subset of the leaf machines. Our

execution utilizes the MapReduce design to assemble and circulate the Kd-Tree for many pictures proficiently. It can run on many machines and give significant degrees more throughput than the cutting edge, with better acknowledgment execution. We explore different avenues regarding up to 100 million pictures running on 2048 machines, with a run season of a bit of part of a second for each inquiry picture.

## 3) Multi-dimensional binary search trees used for associative searching

**AUTHORS:** J. Bentley

This paper builds up the multi-dimensional binary search tree (or k-d tree, where k is the dimensionality of the inquiry space) as an information structure for data capacity to be recovered by cooperative quests. The k-d tree is characterized, and models are as beneath. It is to be very proficient in its stockpiling prerequisites. A critical benefit of this design is that a solitary information construction can productively deal with numerous sorts of inquiries. Different utility calculations can create; their demonstrated regular running occasions in a recorded document are inclusion, O(log n); cancellation of the root, O(n(k-1)/k); erasure of an irregular hub, O(log n); and improvement (ensures logarithmic execution of searches), O(n log n). Search calculations given for preliminary match questions with t keys indicated [proven most excellent running season of O(n(k-t)/k)], and for closest neighbor inquiries [empirically noticed regular running season of O(log n).] These exhibitions far outperform the best at present known calculations for these assignments. A calculation presents to deal with any broad crossing point question. The fundamental focal point of this paper is hypothetical. In any case, k-d trees could be beneficial in numerous applications and instances of expected employments.

## 4) Map Reduce: Simplified data processing on large clusters

**AUTHORS:** J. Dean and S. Ghemawat

Map Reduce is a programming model and a related execution for handling and producing enormous datasets that are manageable to a wide assortment of actual errands. Clients indicate the calculation as far as a guide and a decreased capacity. The basic runtime framework naturally

parallelizes the calculation across huge scope bunches of machines, handles machine disappointments, and timetables between machine correspondence to proficiently utilize the organization and circles. Developers discover the framework simple to utilize: over 10,000 unmistakable Map Reduce programs have carried out inside at Google in recent years, and a normal of 100,000 Guide Decrease occupations are executed on Google's bunches each day, handling a sum of over twenty petabytes of information each day.

## 5) Watermarking techniques for intellectual property protection

**AUTHORS:** A. Kahng, J. Lach, W. Mangione-Smith, S. Mantik, I. Markov, M. Potkonjak, P. Tucker, H. Wang, and G. Wolfe

Digital System Designs Advanced framework plans are the result of necessary exertion and skill. Their encapsulations address deliberately watched licensed innovation from programming and HDL programs down to gadget-level netlists and veil information (IP). Consequently, plan techniques dependent on IP reuse require new systems to ensure IP makers and proprietors' privileges. This paper sets up standards of watermarking-based IP insurance, where a watermark is a system for recognizable proof that is (I) almost undetectable to human and machine. assessment, (ii) hard to eliminate, and (iii) forever implanted as a fundamental piece of the plan. We study-related work in cryptography and plan systems, at that point, create desiderata, measurements, and model methodologies — fixating on imperative-based procedures — for watermarking at different phases of the VLSI configuration measure.

# 4. SYSTEM ANALYSIS

## EXISTING SYSTÉM :

- Ensuring different kinds of multi-media content has pulled in critical consideration from the scholarly world and industry. One methodology issue utilizing watermarking, in which some particular data inserted in the actual substance, and a strategy used to look for this data to check its validity.
- Numerous past works proposed various strategies for making and coordinating with marks. These techniques are arranged into four classifications: spatial, worldly, shading, and change space. Spatial marks (especially the square-based) are the most broadly utilized.
- Youtube Content ID, Vobile VDNA, and MarkMonitor are modern models that utilization fingerprinting for media insurance, while strategies, for example, can be alluded to as the scholastic cutting edge.

## DISADVANTAGES OF EXISTING SYSTEM:

- Watermarking approach may not be appropriate for as of now delivered content without watermarks in them. Watermarking may not be valuable for the quickly expanding on the web recordings, particularly those transferred to destinations, for example, YouTube and played back by any video player.
- Spatial mark's shortcoming is the absence of versatility against massive mathematical changes. Fleeting and shading marks are less intense and can utilize to improve spatial marks. Change space marks are computationally escalated and not generally utilized practically speaking.

## PROPOSED SYSTEM:

- We present a novel framework for multi-media content insurance on cloud foundations. The framework can is utilized to secure different multi-media content sorts.
- In our proposed framework, we present the total multi-cloud framework for multi-media content security. The framework upholds various kinds of multi-media content and can successfully use differing figuring assets.
- Here Tale strategy for making marks for recordings. This technique makes marks that catch the profundity in sound system content without registering the profundity signal itself, which is computationally costly.
- The new plan is appropriate coordinating with motor for high-dimensional multi-media objects. This plan gives the crude capacity of finding - closest neighbors for massive scope datasets.
- The plan additionally offers an assistant capacity for additional preparation of the neighbors. This two-level plan empowers the proposed framework to help various sorts of multi-media content without any problem.
- This paper centers around the other methodology for ensuring multi-media content, a content-based copy discovery (CBCD). In this methodology, marks are separated from unique articles. Marks made from the question (suspected) objects downloaded from online destinations. At that point, the comparability is figured between the first and suspected items to discover possible duplicates.

## ADVANTAGES OF PROPOSED SYSTEM:

- Accuracy.
- Computational Efficiency.
- Scalability and Reliability.
- Cost Efficiency.
- The system can run on private clouds, public clouds, or any combination of public-private clouds.
- Our design achieves rapid deployment of content protection systems based on cloud infrastructures that can quickly provide computing hardware and software resources.

- ❖ The design is cost-effective because it uses computing resources on demand.
- ❖ The design can be scaled up and down to support varying amounts of multi-media content that is protected.

# 5. IMPLEMENTATION

## MODULES:

1. Data owner Module
2. Data User Module
3. Encryption Module
4. Rank Search Module

## MODULES DESCRIPTION:

### Data owner Module

Protect different multi-media content types, including 2-D videos, 3-D videos, images, audio clips, songs, and music clips. The System can deployed on private
and public clouds. Our System has two novel components: (i) method to create signatures of 3-D videos, and (ii) distributed matching engine for multi-media objects. The signature method creates robust and representative signatures of 3-D videos that capture the depth signals in these videos, and it is computationally efficient to compute and compare and requires small storage.

## Data User Module

Matching engine content sorts include 2-D recordings, 3-D recordings, pictures, brief snippets, tunes, and music cuts. The framework can convey on private and public clouds. Our framework has two novel parts: (I) strategy to make marks of 3-D recordings, and (ii) conveyed coordinating with motor for multi-media objects. The marking strategy makes vigorous and agent marks of 3-D recordings that catch the profundity signals in these recordings, and it is computationally proficient at registering and looking at and requires little stockpiling.

## Encryption Module

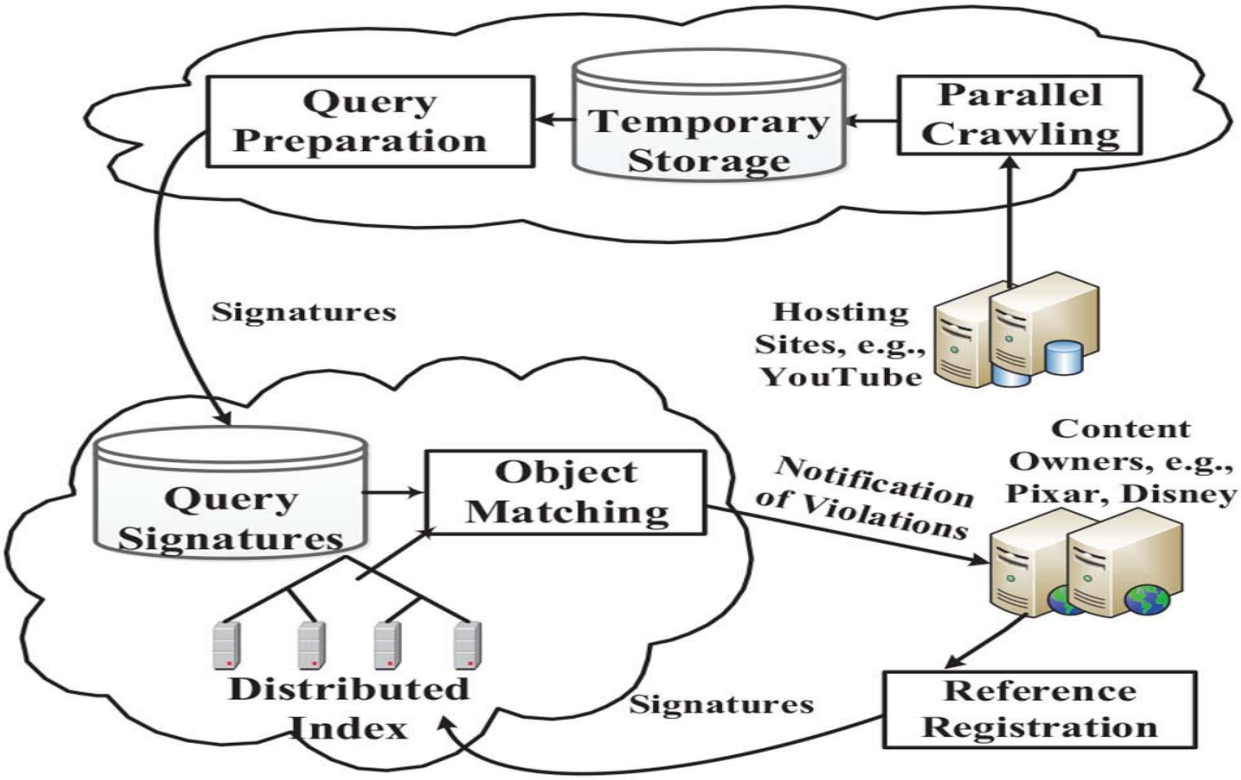
Multi-media content protection systems use multi-cloud foundations. The proposed framework upholds diverse multi-media content sorts, conveyed on private and public mists. Two primary segments of the proposed framework introduced. The first is another technique for making marks of 3-D recordings. Our technique develops coarse-grained difference maps utilizing sound system correspondence for an inadequate arrangement of focuses on the picture.

## Rank Search Module

Rank needs to store the entire reference dataset on numerous occasions in hash tables, up to multiple times. Then again, our motor stores the reference dataset just a single time in containers. Capacity necessities for a dataset of 32,000 focuses show that Position needs up to 8 GB of capacity, while our motor necessities up to 5 MB, which is multiple significant degrees less. These capacity necessities may deliver Rank not pertinent for massive datasets with a vast number of focuses, while our motor can scale well to help gigantic datasets

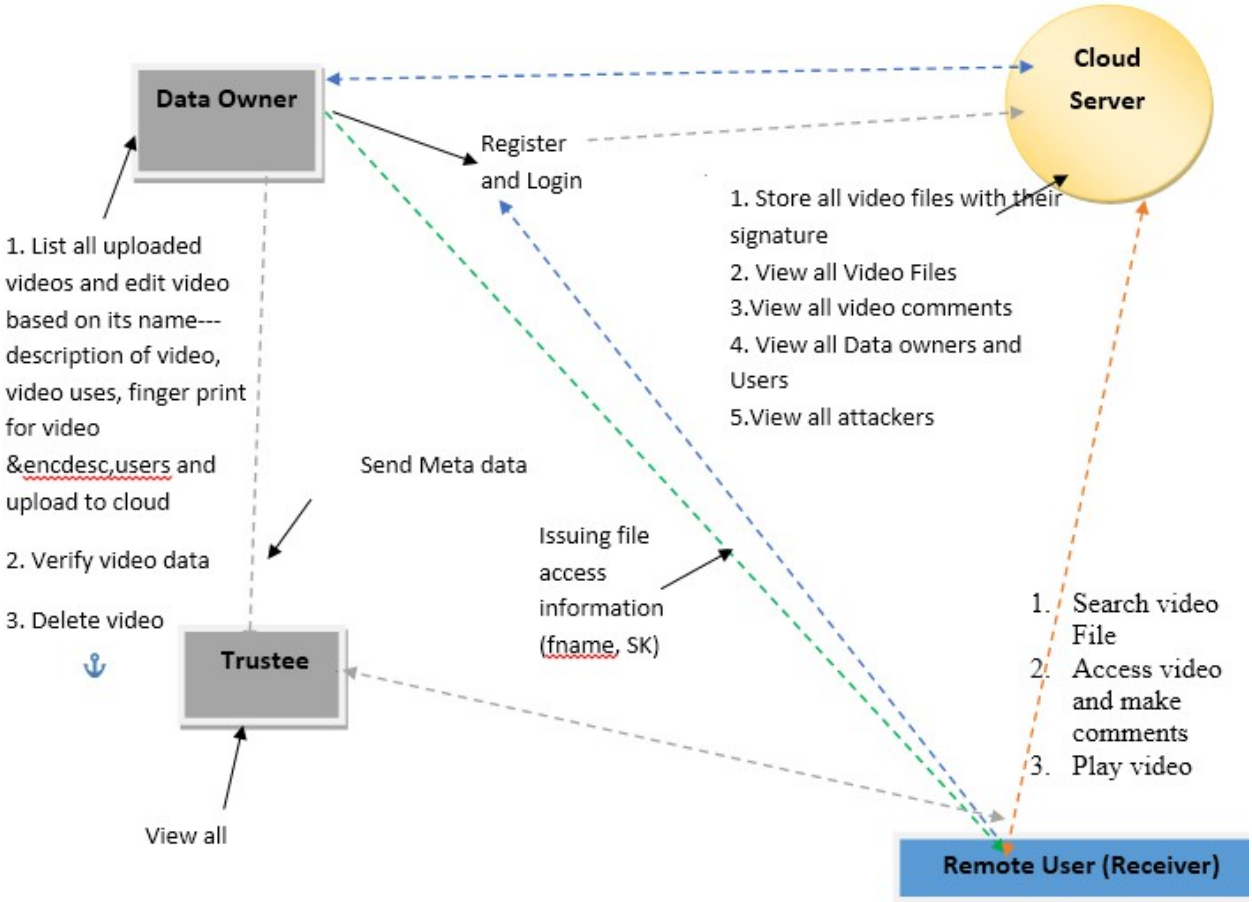
# 6. SYSTEM DESIGN

## SYSTEM ARCHITECTURE:




System Architecture

## ARCHITECTURE DIAGRAM:



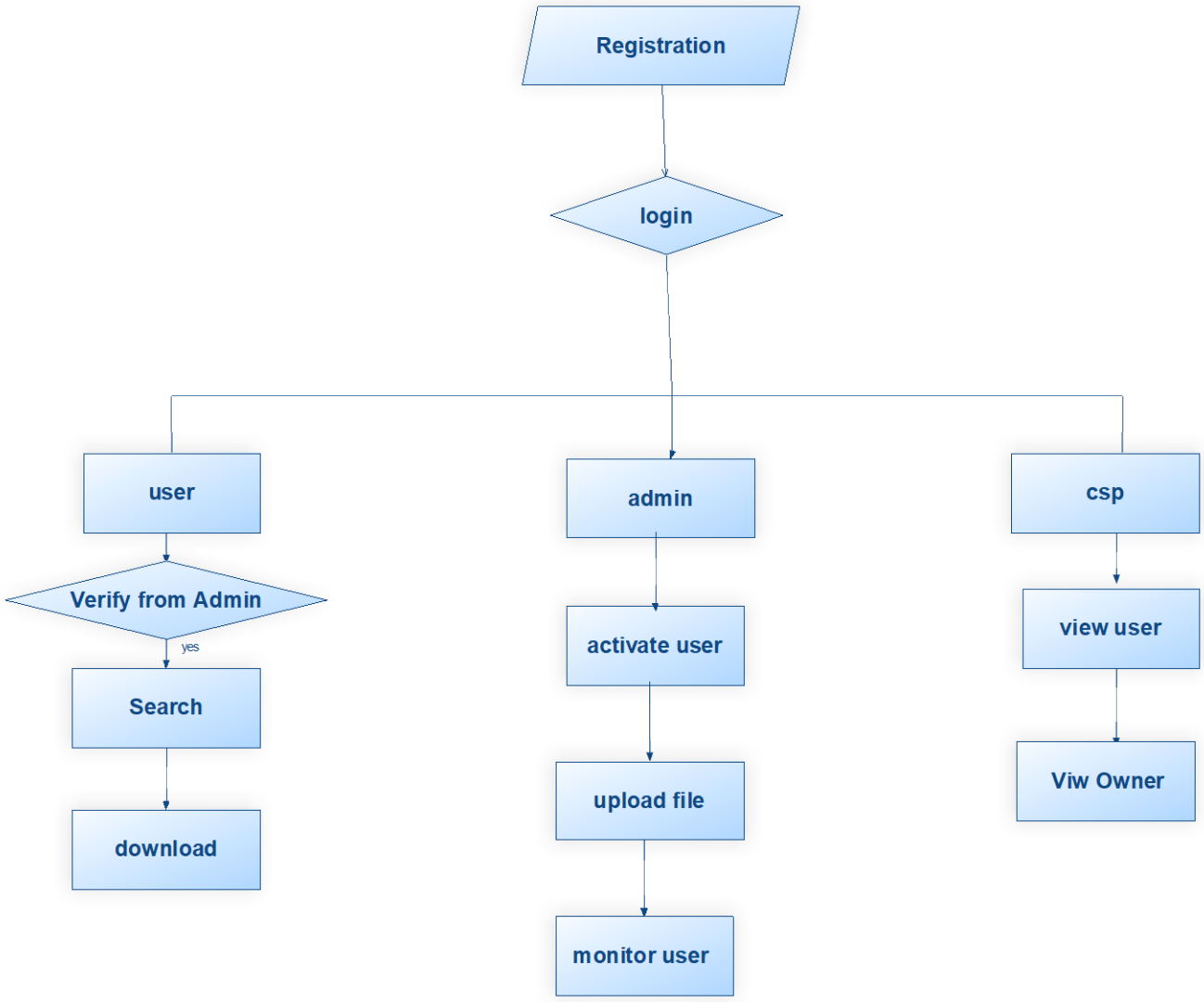
## DATA FLOW CHART:

1. The DFD is also called a bubble chart. It is a basic graphical formalism that can address a framework regarding input information to the framework, different preparing completed on this information, and the yield information produced by this framework.

2. The data flow diagram (DFD) is one of the most important modeling tools used to show the framework segments. These parts are the framework cycle, the cycle's information, an outside substance that collaborates with the framework, and the framework's data streams.

3. DFD shows how the information moves through the system and how a series of transformations modify it. It is a graphical technique that depicts information flow and the transformations applied as data moves from Input to output.

4. DFD is also known as a bubble chart. A DFD may be used to represent a system at any level of abstraction. DFD can be partitioned into levels that represent increasing information flow and functional detail.




Data Flow Chart

## UML DIAGRAMS:

UML stands for Unified Modeling Language. UML is a normalized broadly applicable displaying language in the field of Article situated computer programming. The standard is overseen and made by the item The executives Gathering.

The objective is for UML to turn into a specific language for making models of article-arranged PC programming. In its present structure, UML contained two significant segments: a Meta-model and documentation. Later on, some type of technique or interaction may likewise be added to; or related to UML.

The UML is a standard language for determining, Representation, Developing, and reporting the antiques of a product framework and business demonstrating, and other non-programming frameworks.

The UML addresses an assortment of best designing practices that have demonstrated effectiveness in displaying huge and complex frameworks.

The UML is a critical piece of creating object-arranged programming and the product improvement measure. The UML generally utilizes graphical documentation to communicate the plan of programming projects.

## GOALS:

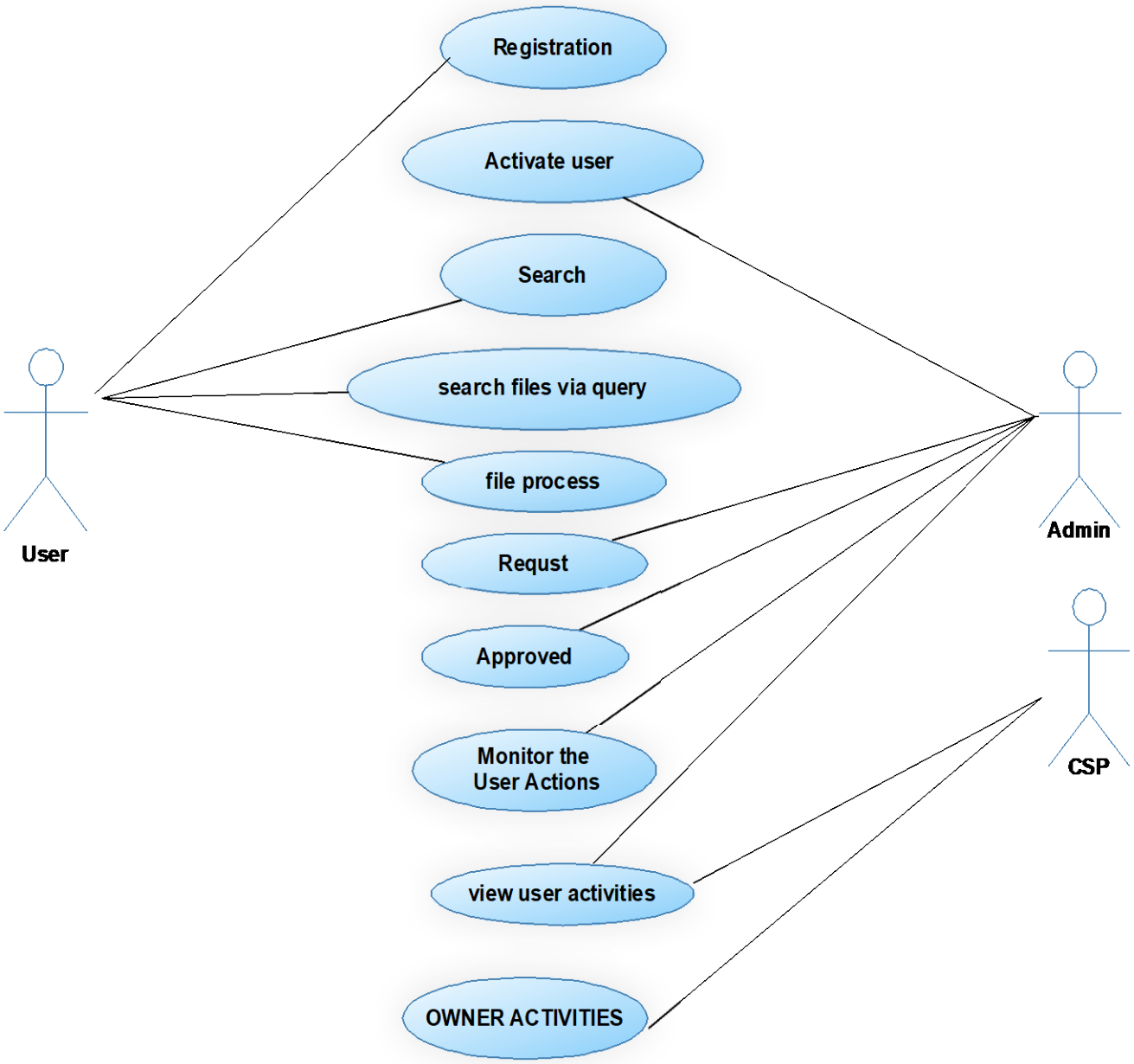
The primary goals in the design of the UML are as follows:

1. Provide users with a ready-to-use, expressive visual displaying Language so they can create and trade significant models.
2. Provide extensibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development processes.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of the OO tools market.

6. Backing more significant level advancement ideas like coordinated efforts, systems, examples, and segments.
7. Coordinate prescribed procedures.

## USE CASE DIAGRAM:

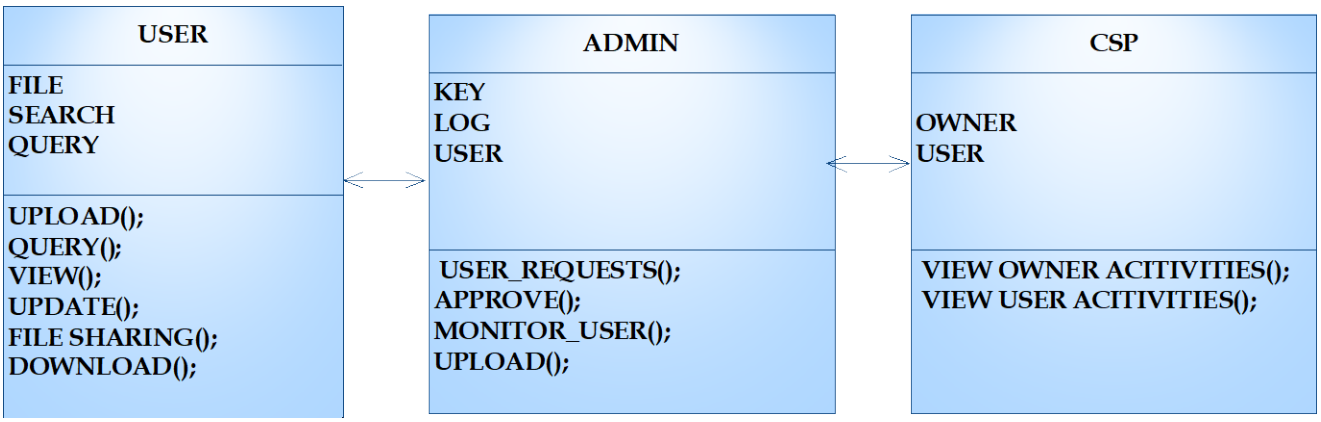
A use case diagram in the Unified Modeling Language (UML) is a conduct graph characterized by and made from a Utilization case examination. Its motivation is to introduce a graphical outline of the usefulness of a framework as far as entertainers, objectives (addressed as use cases), and any conditions between those utilization cases. A utilization case outline's primary role is to show what framework capacities are performed for which entertainer. Parts of the entertainers portrayed in the framework




Use Case Diagram

## CLASS DIAGRAM:

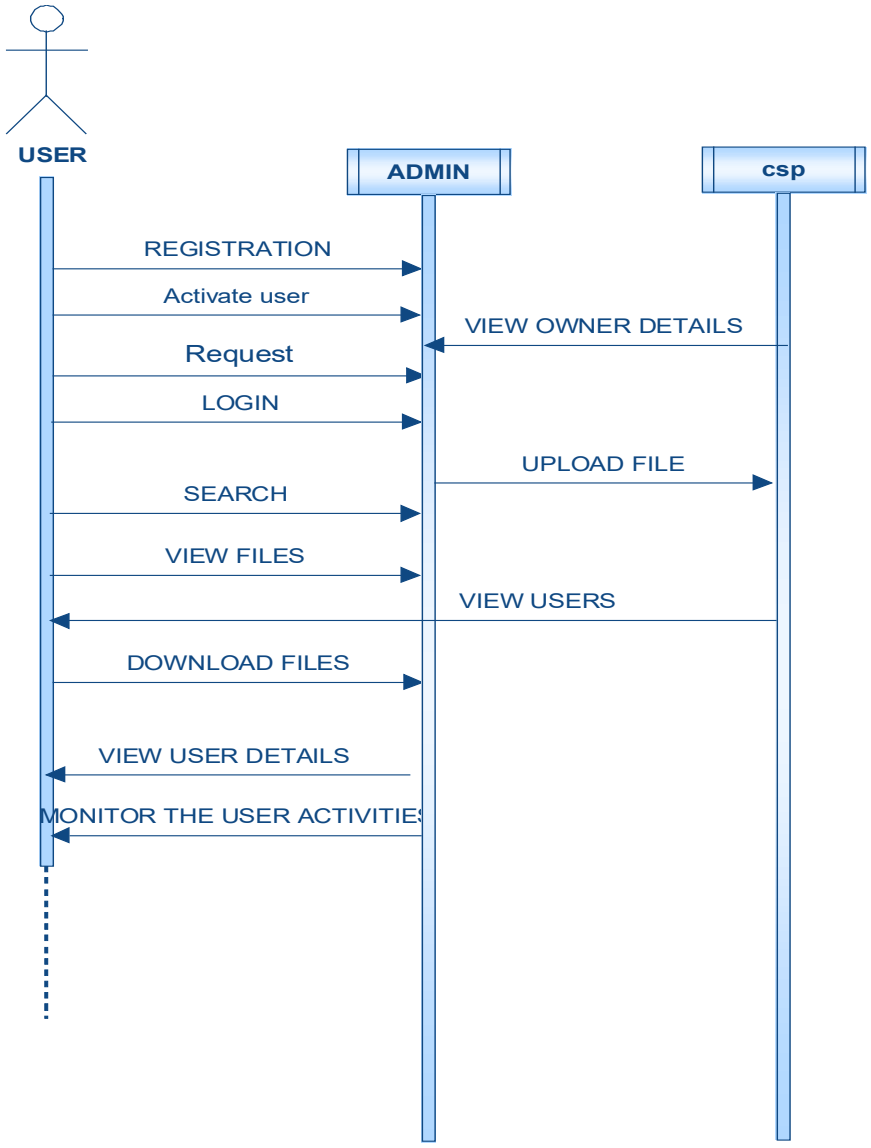
In software engineering, a class diagram in the Unified Modeling Language (UML) is a static design chart that depicts a framework's engineering by showing the framework's classes, characteristics, tasks (or strategies), and the connections among the classes. It clarifies class contains data.




Class Diagram

## SEQUENCE DIAGRAM:

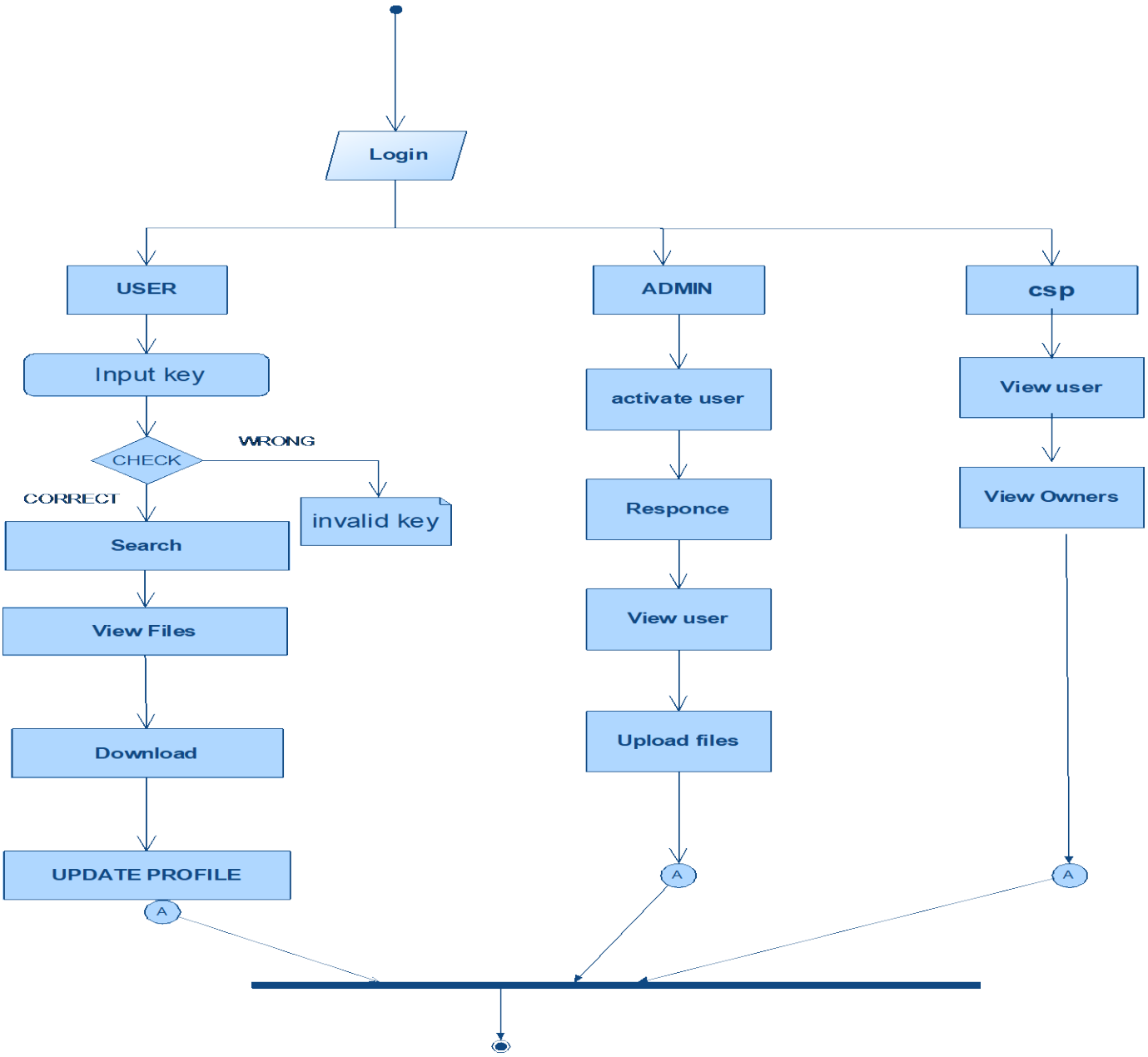
A sequence diagram in Unified Modeling Language (UML) is a sort of association chart that shows how cycles work with each other and in what request. It is a development of a Message Succession Diagram. Grouping graphs are once in a while called occasion charts, occasion situations, and timing outlines.




Sequence Diagram

## ACTIVITY DIAGRAM:

Activity diagrams are graphical representations of workflows of stepwise exercises and activities with help for the decision, emphasis, and simultaneousness. In the Brought together Displaying Language, movement graphs depict the business and, bit by bit, segments' operational work processes in a framework. An activity diagram shows the overall flow of control.




Activity Diagram

# 7. SYSTEM STUDY

## 7.1 FEASIBILITY STUDY

The project's feasibility was analyzed in this phase, and the business proposal to put forth a general plan for the project and some cost estimates. During system analysis, the feasibility study of the proposed system is to carry out. It is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the essential requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- ECONOMICAL FEASIBILITY
- TECHNICAL FEASIBILITY
- SOCIAL FEASIBILITY

## 7.2 ECONOMICAL FEASIBILITY

This study is to check the economic impact that the system will have on the organization. The amount of funds that the company can pour into the system's research and development is limited. The expenditures should be supported. Accordingly, the created framework was well inside the spending plan, which can accomplish the grounds that most of the advances utilized are openly accessible. Just the altered items must be bought.

## 7.3. TECHNICAL FEASIBILITY

This study is to check the technical feasibility, that is, the framework's specialized prerequisites. Any framework created should not have a popularity for accessible specialized assets. It will prompt high requests on accessible specialized assets. The created framework should have a humble necessity, as just insignificant or invalid changes are needed for executing this framework.

### 7.4 SOCIAL FEASIBILITY

The aspect of the study is to check the level of acceptance of the system by the user. It incorporates the way toward preparing the client to utilize the framework effectively. The client should not feel undermined by the framework; instead, they should acknowledge it as a need. The clients' degree of acknowledgment relies upon the techniques utilized to instruct the client about the framework and acclimate them. His degree of certainty raised to make some valuable analysis, which invites, as he is the framework's last client.

## 8. Software Environment

### 8.1.Net Features

Microsoft .NET is a bunch of Microsoft programming advances for quickly building and incorporating XML Web administrations, Microsoft Windows-based applications, and Web arrangements. The .NET System is a language-nonpartisan stage for composing programs without much of a stretch and safely interoperate. There is no language boundary with .NET: there are various dialects accessible to the designer, including Oversaw C++, C#, Visual Essential, and JavaScript. The .NET system gives the establishment to segments to interface flawlessly, regardless of whether locally or distantly, on various stages. It normalizes basic information types, and interchanges conventions with the goal that segments made in various dialects cannot stretch

".NET" is additionally the aggregate name given to different programming parts based upon the .NET stage. These will be the two items (Visual Studio.NET and Windows.NET Worker, for example) and administrations (like Identification, .NET My Administrations).

## THE .NET FRAMEWORK

The .NET Framework has two main parts:

1. The Common Language Runtime (CLR).
2. A hierarchical set of class libraries.

The CLR is described as the "execution engine." NET. It provides the environment within which programs run. The most important features are

- Conversion from a low-level assembler-style language, called Intermediate Language (IL), into code native to the platform executed.
- Memory management will be including garbage collection.
- Checking and enforcing security restrictions on the running code.
- Loading and execution of programs using version control.
- The following features of the .NET framework are also worth description:

### Managed Code

The code that objectives .NET contains a specific extra Data - "metadata" - to depict itself. While both oversaw and unmanaged code can run in the runtime, just oversaw code contains the data that permits the CLR to ensure, for example, safe execution and interoperability.

### Managed Data

With Managed Code comes Managed Data. CLR gives memory assignment and Deallocation offices, and trash assortment. A few .NET dialects utilize Oversaw Information, like C#, Visual Basic.NET, and JScript.NET, while others, specifically C++, do not. Focusing on CLR can, contingent upon the Language utilized, force certain imperatives on the highlights accessible. As with oversaw and unmanaged code, one can have overseen and unmanaged information in .NET applications - information that does not get trash gathered; however, it is taken care of by unmanaged code.

## Common Type System

The CLR uses something called the Common Type System (CTS) to implement type-security carefully. It guarantees that all classes are viable with one another by portraying types in a standard manner. CTS characterizes how types work inside the runtime, empowering types in a single language to interoperate with types in another dialect, including cross-language exemption taking care of. Just as guaranteeing that types utilized unseemly ways, the runtime likewise guarantees that code does not endeavor to get to memory that has not apportioned it.

## Common Language Specification

The CLR provides built-in support for language interoperability. To guarantee that designers can create oversaw code that engineers can utilize utilizing any programming language, many language highlights and rules for utilizing them called the Normal Language Particular (CLS) have characterized. Segments that adhere to these standards and uncover just CLS highlights viewed as CLS-consistent.

## THE CLASS LIBRARY

.NET provides a single-rooted hierarchy of classes containing over 7000 types. The namespace root is called framework; this contains fundamental sorts like Byte, Twofold, Boolean, String, and Item. All items get from the framework. Item. Just as articles, there are esteem types. Worth sorts can be apportioned on the stack, which can give helpful adaptability. There are likewise effective methods for changing over esteem types to protest types if and when vital.

The classes' set is pretty comprehensive, providing collections, file, screen, network I/O, threading, and XML and database connectivity.

The class library is subdivided into many sets (or namespaces), each providing distinct functionality areas, with dependencies between the namespaces kept to a minimum.

## LANGUAGES SUPPORTED BY .NET

The multi-language capacity of the .NET System and Visual Studio .NET empowers engineers to utilize their current programming abilities to construct a wide range of uses and XML Web administrations. The .NET system upholds new forms of Microsoft's old top choices, Visual Essential and C++ (as VB.NET and Overseen C++), yet a few new increases to the family exist.

Visual Essential .NET has refreshed numerous better than ever Language, making it a fantastic article situated programming language. These highlights incorporate legacy, interfaces, and over-burdening, among others. Visual Fundamental likewise now upholds organized exemption taking care of, custom ascribes, and upholds multi-stringing.

Visual Essential .NET is likewise CLS consistent, which implies that any CLS-agreeable language can utilize the classes, items, and segments to make in Visual Fundamental. NET. Overseen Expansions for C++ and ascribed writing computer programs are only a portion of the upgrades made to the C++ language. Overseen Augmentations to improve on the errand of relocating existing C++ applications to the new .NET Systém

C# is Microsoft's new Language. It is a C-style language that is essential "C++ for Rapid Application Development. In contrast to different dialects, its detail is only the sentence structure of the Language. It has no standard library of its own and intends to utilize the .NET libraries as its own.

Microsoft Visual J# .NET gives the most agreeable change to Java-language engineers into the universe of XML Web Administrations and drastically improves the interoperability of Java-language programs with existing programming written in an assortment of other programming dialects.

The dynamic state has made Visual Perl and Visual Python, which empower. NET-mindful applications will work in either Perl or Python. Additionally, it tends to be coordinated into the Visual Studio .NET climate to help Dynamic State's Perl Dev Pack. Other languages for which .NET compilers are available to include

- FORTRAN
- COBOL
- Eiffel

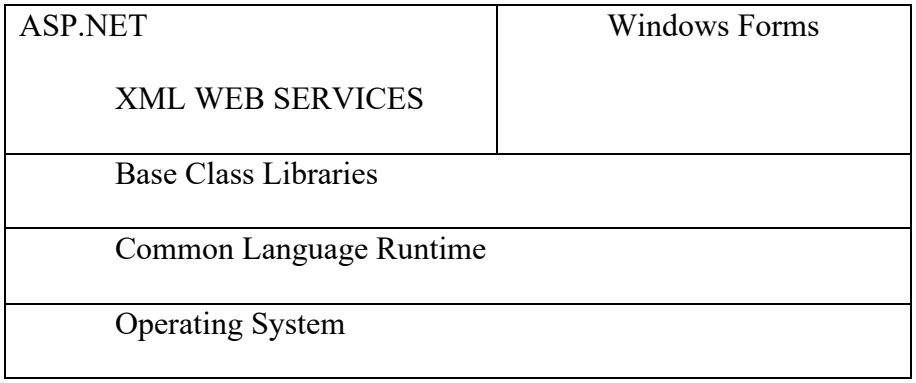



Figure 8.1 **.**Net Framework

C#.NET is also compliant with CLS (Common Language Specification) and supports structured exception handling. CLS is a set of rules and constructs supported by the CLR (Common Language Runtime). CLR is the runtime climate given by the .NET System; it deals with the code's execution and makes the advancement cycle simpler by offering assistance types.

C#.NET is a CLS-compliant language. Any objects, classes, or components created in C#.NET can be used in any other CLS-compliant language. Also, we can use objects, classes, and components created in other CLS-compliant languages in C#.NET.The use of CLS

ensures complete interoperability among applications, regardless of the languages used to create the application.

## CONSTRUCTORS AND DESTRUCTORS:

Constructors are accustomed to instating objects, though destructors used to obliterate them. All in all, destructors used to deliver the assets apportioned to the item. In C#.NET, the sub concludes method is accessible. The sub-settled methodology is used to finish the assignments that should perform when an item is annihilated. The sub-settles technique is called consequently when an item is obliterated. Additionally, the sub-finishes technique can be called distinctly from the class it has a place with or from inferred classes

## GARBAGE COLLECTION

Garbage Collection is another new feature in C#.NET. The .NET System screens designated assets, like articles and factors. Additionally, the .NET System consequently delivers memory for reuse by annihilating items that are not, at this point, used.

In C#.NET, the trash specialist checks for the articles that are not presently used by applications. At the point when the trash specialist goes over an item set apart for trash assortment, it delivers the Article's memory

## OVERLOADING

Overloading is another feature in C#. Overloading enables us to define multiple procedures with the same name, where each procedure has a different set of arguments. Besides using overloading for procedures, we can use it for constructors and properties in a class.

## MULTI-THREADING:

C#.NET also supports multi-threading. An application that supports multi-threading can handle multiple tasks simultaneously; we can use multi-threading to decrease the time taken by an application to respond to user interaction.

## STRUCTURED EXCEPTION HANDLING

C#.NET supports structured handling, which enables us to detect and remove errors at runtime. In C#.NET, we need to use Try…Catch…Finally statements to create exception handlers. Using Try, Catch, Finally statements, we can create robust and effective exception handlers to improve our application's performance.

## THE .NET FRAMEWORK

The .NET Framework is a new computing platform that simplifies application development in the Internet's highly distributed environment.

## . NET FRAMEWORK OBJECTIVES

1. To give a reliable item arranged programming climate, regardless of whether article codes are put away and executed locally on Web disseminated or executed distantly.

2. To give a code-execution climate to limits programming organization and ensures safe execution of code.

3. Kills execution issues.

There are various sorts of utilizations, for example, Windows-based applications and Electronic applications.

## 8.2 Features of SQL-SERVER

The OLAP Services feature available in SQL Server version 7.0 is now called SQL Server 2000 Analysis Services. The term OLAP Services has been replaced with the

term Analysis Services. Analysis Services also includes a new data mining component. The Repository component available in SQL Server version 7.0 is now called Microsoft SQL Server 2000 Meta Data Services. References to the component now use the term Meta Data Services. The term repository used the only reference to the repository engine within Meta Data Services

SQL-SERVER database consists of six types of objects,

They are,

1. TABLE
2. QUERY
3. FORM
4. REPORT
5. MACRO

**TABLE:**

A database is a collection of data about a specific topic.

**VIEWS OF TABLE:**

We can work with a table in two types,

1. Design View
2. Datasheet View

**Design View**

To build or modify the structure of a table, we work in the table design view. We can specify what kind of data will be held.

**Datasheet View**

To add, edit, or analyze the data itself, we work in tables datasheet view mode.

**QUERY:**

A query is a question that has to ask the data. Access gathers data that answers the question from one or more tables. The information that makes up the appropriate response is either a dynaset (on the off chance that you alter it) or a depiction. Each time we run a question, we get the most recent data in the dynaset. Access either shows the dynaset or preview to see or play out an activity on it, for example, erasing or refreshing.

# 9. SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every possible fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies, and a finished product. It is the process of exercising software to ensure that the Software system meets its requirements and user expectations and does not fail unacceptably. Also, there are various types of tests. Each test type addresses a specific testing requirement.

**TYPES OF TESTS**

## 9.1 Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning correctly and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application. It will done after the completion of an individual unit before integration. This is preliminary testing that depends on information on its development and is obtrusive. Unit tests perform necessary tests at a part level and test a particular business cycle, application, and framework setup. Unit tests guarantee that every extraordinary way of a business cycle precisely plays out the archived particulars and contains unmistakably characterized inputs and anticipated outcomes. Particulars and contains characterized inputs and anticipated outcomes.

**Integration testing**

Integration tests are designed to test integrated software components to determine if they run as one program Testing is occasion-driven and is more worried about the actual result of screens or fields. Incorporation tests exhibit that albeit the segments separately fulfilled, the parts' mix is correct and steady, as demonstrated by fruitful unit testing. Incorporation testing pointed toward uncovering the issues that emerge from the blend of segments.

**Functional test**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals. Functional testing centered on the following items:

Valid Input : identified classes of valid Input must be accepted.
Invalid Input : identified classes of invalid Input must be rejected.
Functions : identified functions must exercise.
Output : identified classes of application outputs must exercise.
Systems/Procedures: interfacing systems or procedures must invoke.

The organization and preparation of functional tests focused on necessities, fundamental capacities, or extraordinary experiments. Likewise, methodical inclusion about recognizing business measure streams, information fields, predefined measures, and progressive cycles should be considered for testing. Before functional testing is finished, extra tests are distinguished, and the functional estimation of the current test is resolved.

**System Test**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration-oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

**White Box Testing**

White Box Testing is a testing in which the software tester knows the software's inner workings, structure, and Language, or at least its purpose. It is purpose. It used to test areas that cannot reach from a black-box level.

**Black Box Testing**

Black Box Testing is testing the software without knowing the module's inner workings, structure, or Language. Like most other kinds of tests, black box tests must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

## Unit Testing:

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

***Test strategy and approach***

Field testing will perform manually, and functional tests written in detail.

**Test objectives**

- All field entries must work properly.
- Pages activated from the identified link.
- The entry screen, messages, and responses must not be delayed.

**Features to be tested**

- Verify that the entries are in the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

## 9.2 Integration Testing

Software integration testing is the incremental integration testing of at least two coordinated programming parts on a solitary stage to create disappointments by interface deserts.

The combination test task is to watch that segments or programming applications, e.g., segments in a product framework or – one stage up – programming applications at the organization level – interface without an error.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

## 9.3 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end-user. It also ensures that the system meets the functional requirements.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**HARDWARE REQUIREMENTS:**

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.

**SOFTWARE REQUIREMENTS:**

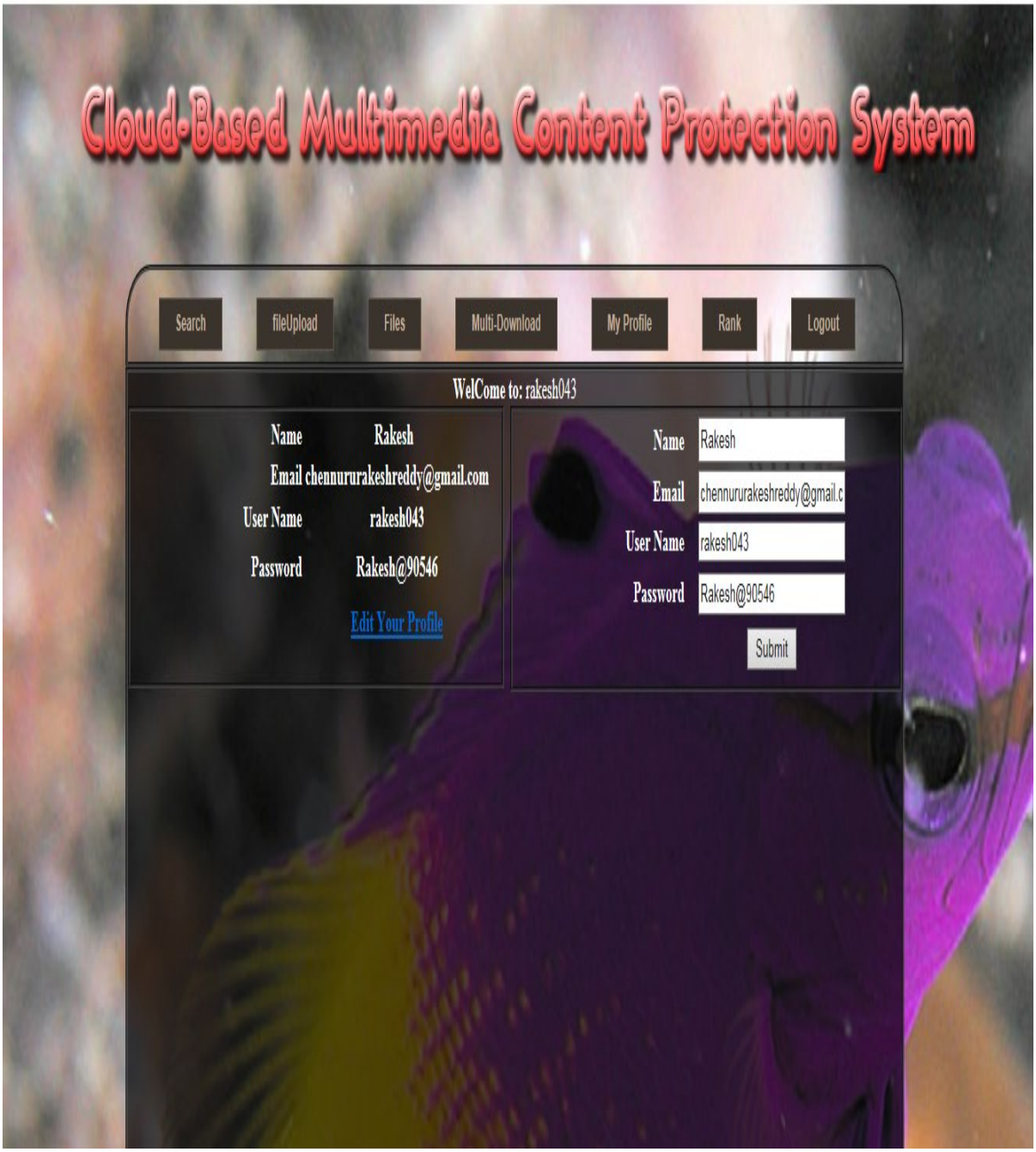
- Operating System: - Windows XP.
- Coding Language: C#.NET
- Database: MS SQL SERVER 2005

# 10. SCREENSHOTS:

**USER**


Cloud-Based Multimedia Content Protection System
Home
Login
Admin
Registration
Registration Form
Name :
Enter Your Name
Email :
Enter Your Email Id
Create User Name :
Enter Your User Name
Create Password :
Generate Your Password
Confirm Password :
Re-Enter Password
Date Of Birth :
Choose Your Date Of Birth
City :
Enter Your City
Submit


Protection
Cloud-Based Multimedia Content Protection System
Home
Login
Admin
Registration
User Login
User Name :
rakesh043
Password :
Login
Register


Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
WelCome to: rakesh043
Name Rakesh
Email chennururakeshreddy@gmail.com
User Name rakesh043
Password Rakesh@90546
Edit Your Profile
Name Rakesh
Email chennururakeshreddy@gmail.c
User Name rakesh043
Password Rakesh@90546
Submit


Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Welcome to: rakesh043
File Details
File Id : 1
File Name: ArtInt1new.pdf
File Ext: .pdf
File Size: 1142.231KB
Upload Date: 11/28/2019 10:17:22 AM
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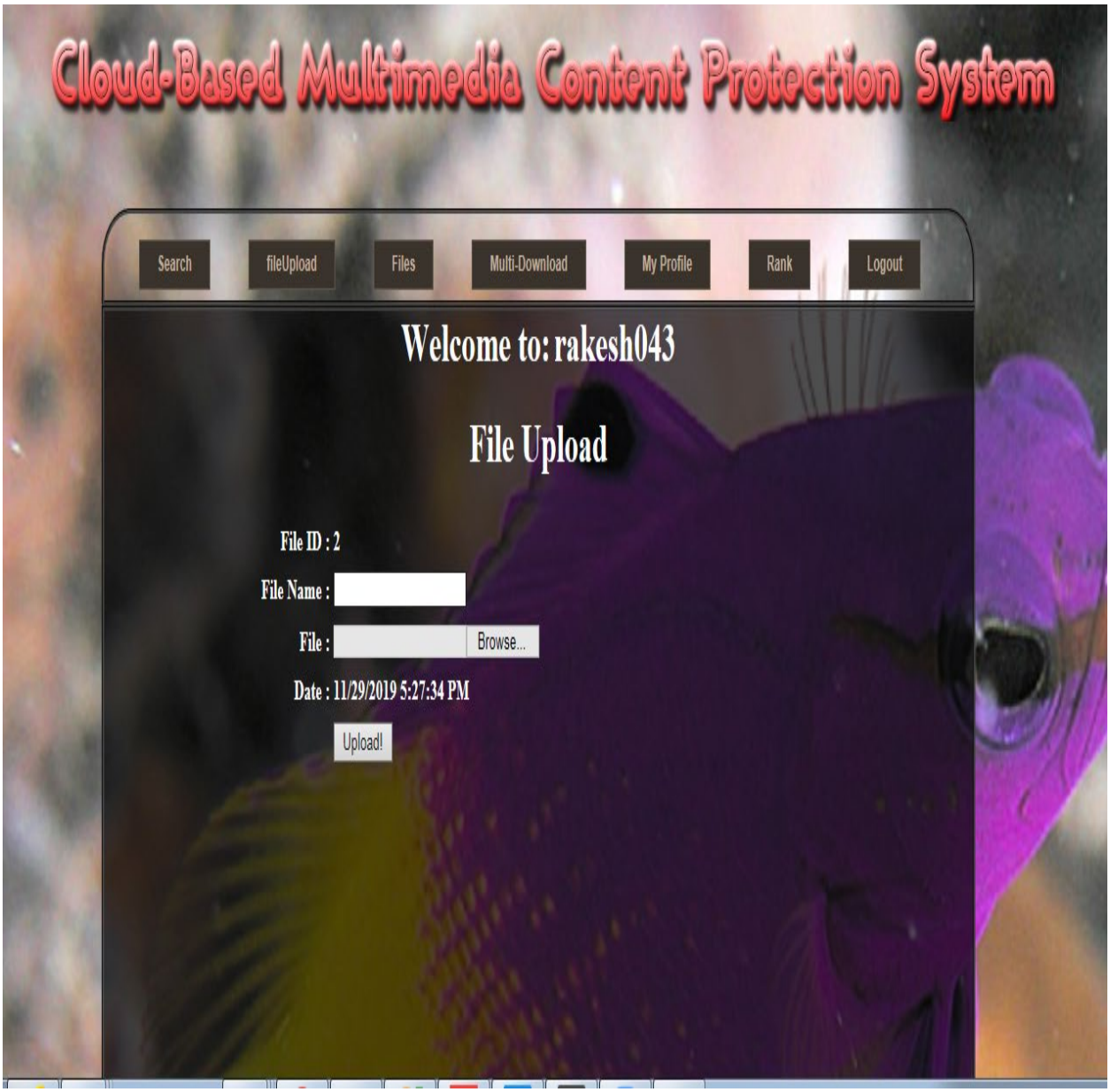
File Id : 2
File Name: download.jpg
File Ext: .jpg
File Size: 5.191406KB
Upload Date: 11/29/2019 5:39:53 PM
Image:


Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Welcome to: rakesh043
File Upload
File ID : 2
File Name :
File :
Browse...
Date : 11/29/2019 5:27:34 PM
Upload!


Cloud-Based Multimedia Content Protection System
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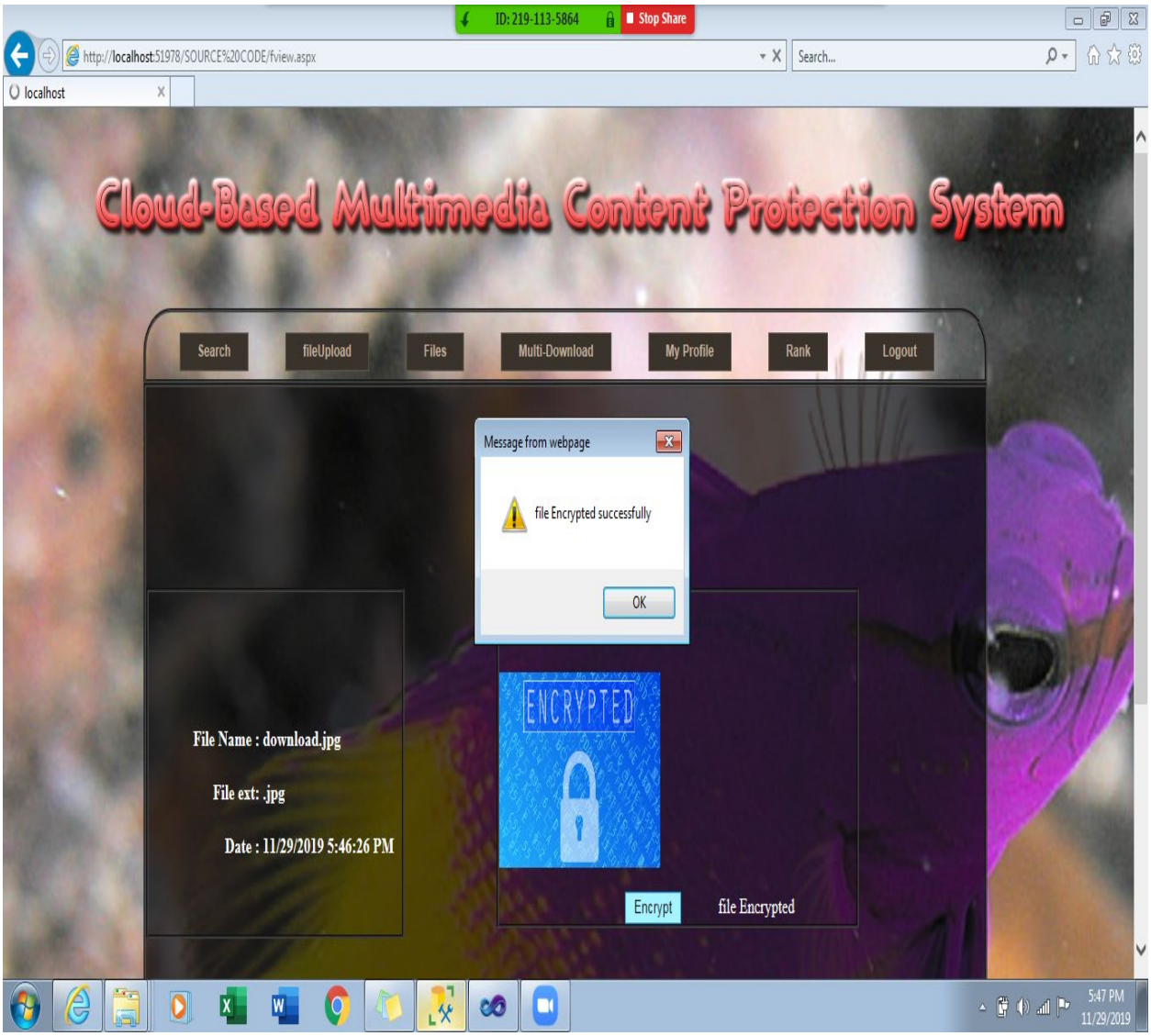
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
File Name : download.jpg
File ext: .jpg
Date : 11/29/2019 5:39:57 PM
Encrypt


ID: 219-113-5864
Stop Share
http://localhost:51978/SOURCE%20CODE/fview.aspx
Search...
localhost
Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Message from webpage
file Encrypted successfully
OK
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File ext: .jpg
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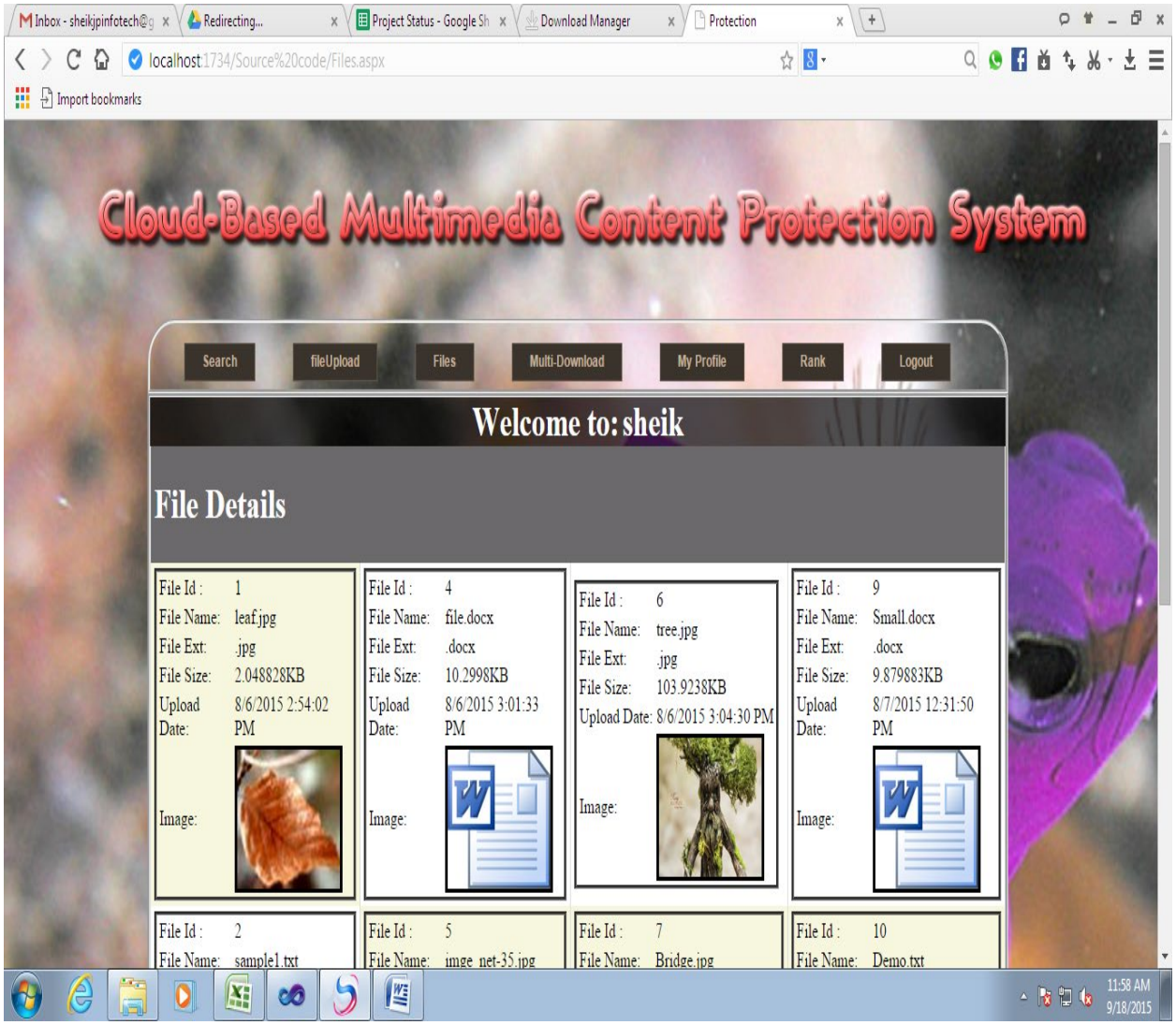
ENCRYPTED
Encrypt
file Encrypted
5:47 PM
11/29/2019


Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
Protection
localhost:1734/Source%20code/Files.aspx
Import bookmarks
Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Welcome to: sheik
File Details
File Id : 1
File Name: leaf.jpg
File Ext: .jpg
File Size: 2.048828KB
Upload Date: 8/6/2015 2:54:02 PM
Image:
File Id : 4
File Name: file.docx
File Ext: .docx
File Size: 10.2998KB
Upload Date: 8/6/2015 3:01:33 PM
Image:
File Id : 6
File Name: tree.jpg
File Ext: .jpg
File Size: 103.9238KB
Upload Date: 8/6/2015 3:04:30 PM
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File Id : 9
File Name: Small.docx
File Ext: .docx
File Size: 9.879883KB
Upload Date: 8/7/2015 12:31:50 PM
Image:
File Id : 2
File Name: sample1.txt
File Id : 5
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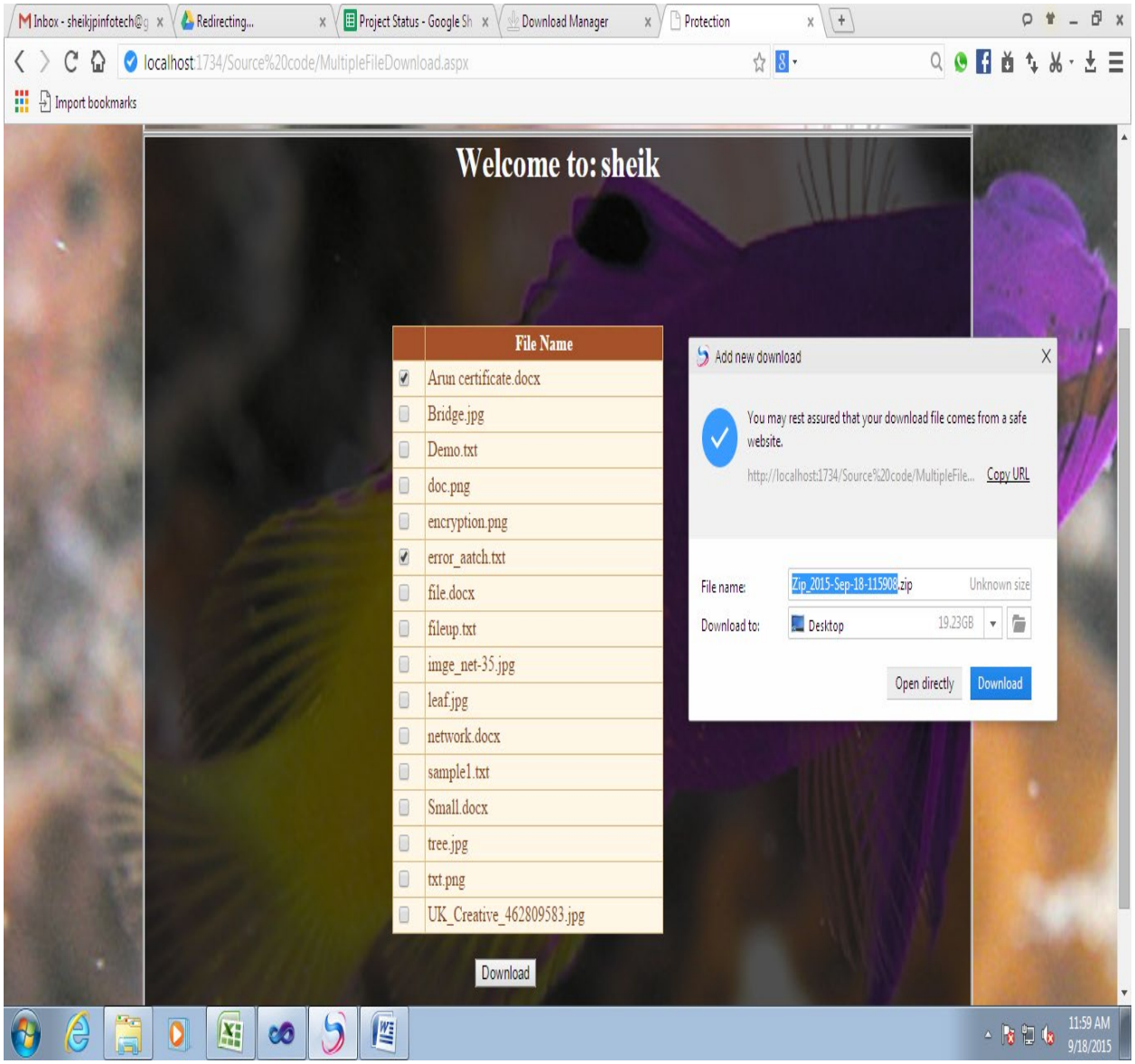
File Id : 7
File Name: Bridge.jpg
File Id : 10
File Name: Demo.txt
11:58 AM
9/18/2015


Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
Protection
localhost:1734/Source%20code/MultipleFileDownload.aspx
Import bookmarks
Welcome to: sheik
File Name
Arun certificate.docx
Bridge.jpg
Demo.txt
doc.png
encryption.png
error_aatch.txt
file.docx
fileup.txt
imge_net-35.jpg
leaf.jpg
network.docx
sample1.txt
Small.docx
tree.jpg
txt.png
UK_Creative_462809583.jpg
Download
Add new download
You may rest assured that your download file comes from a safe website.
http://localhost:1734/Source%20code/MultipleFile...
Copy URL
File name:
Zip_2015-Sep-18-115908.zip
Unknown size
Download to:
Desktop
19.23GB
Open directly
Download
11:59 AM
9/18/2015


Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Welcome to: rakesh043
File Name
ArtInt1new.pdf
Arun certificate.docx
Bridge.jpg
Demo.txt
doc.png
Download Link.txt
download.jpg
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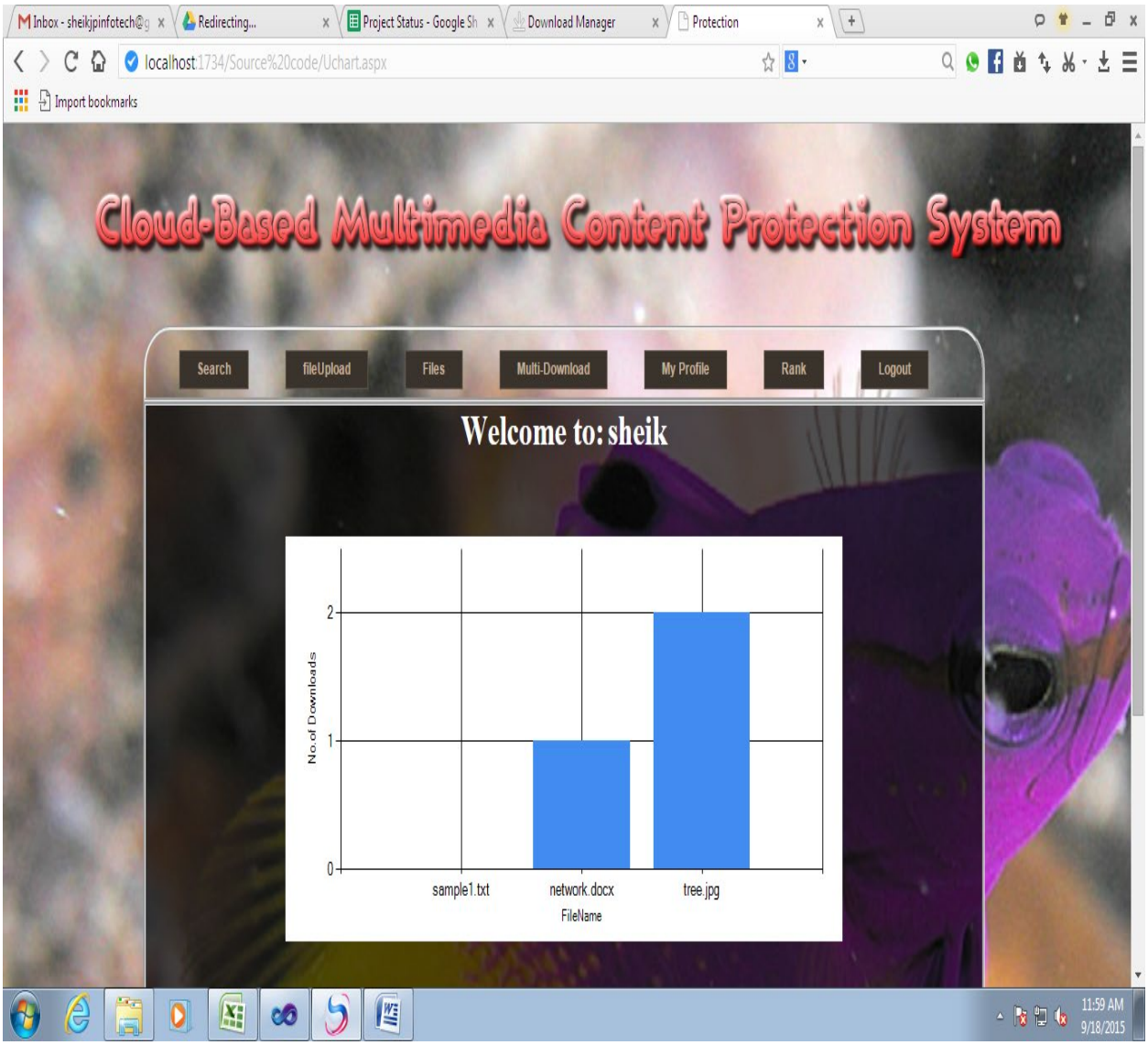
Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
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Import bookmarks
Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
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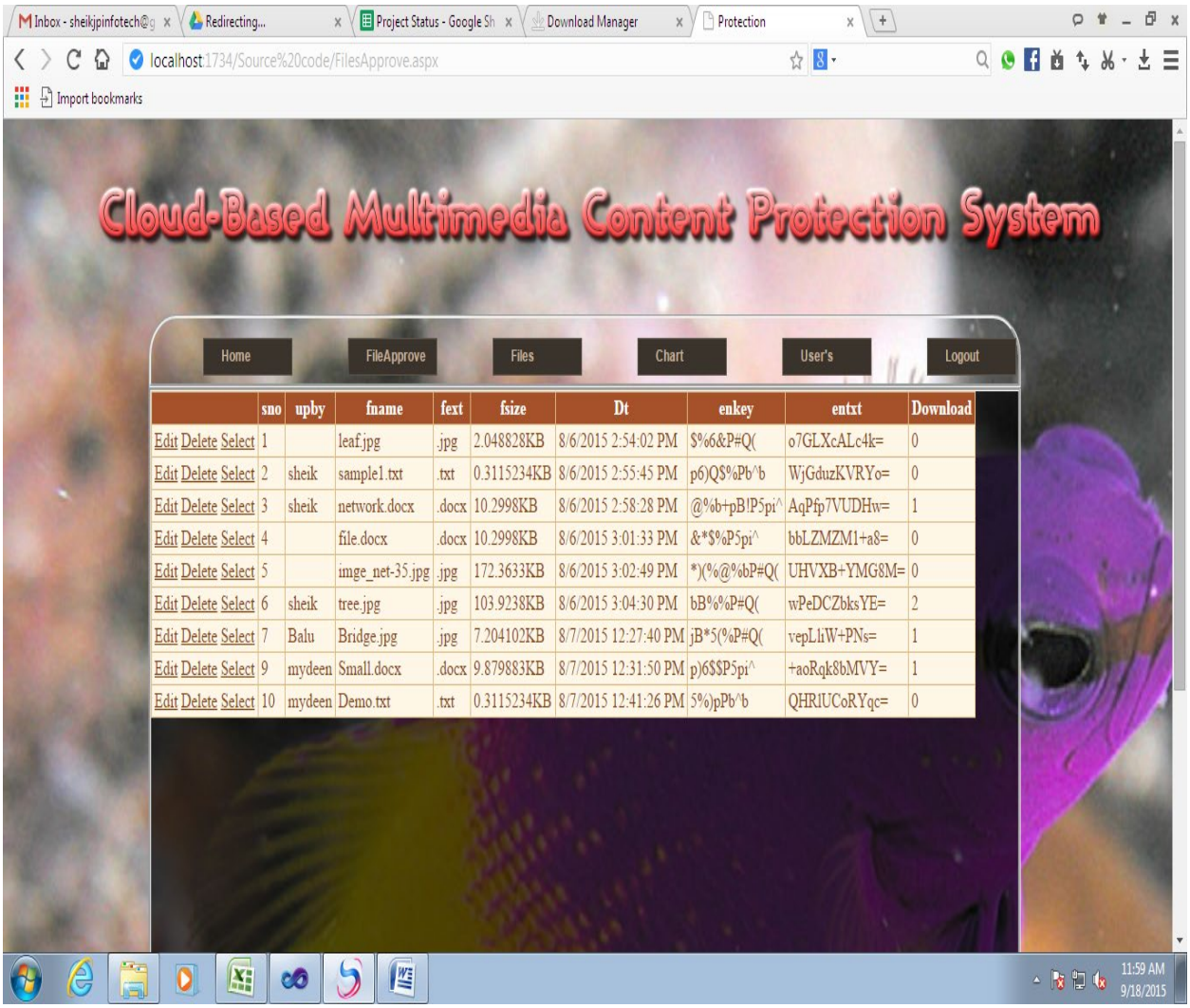
**ADMIN**

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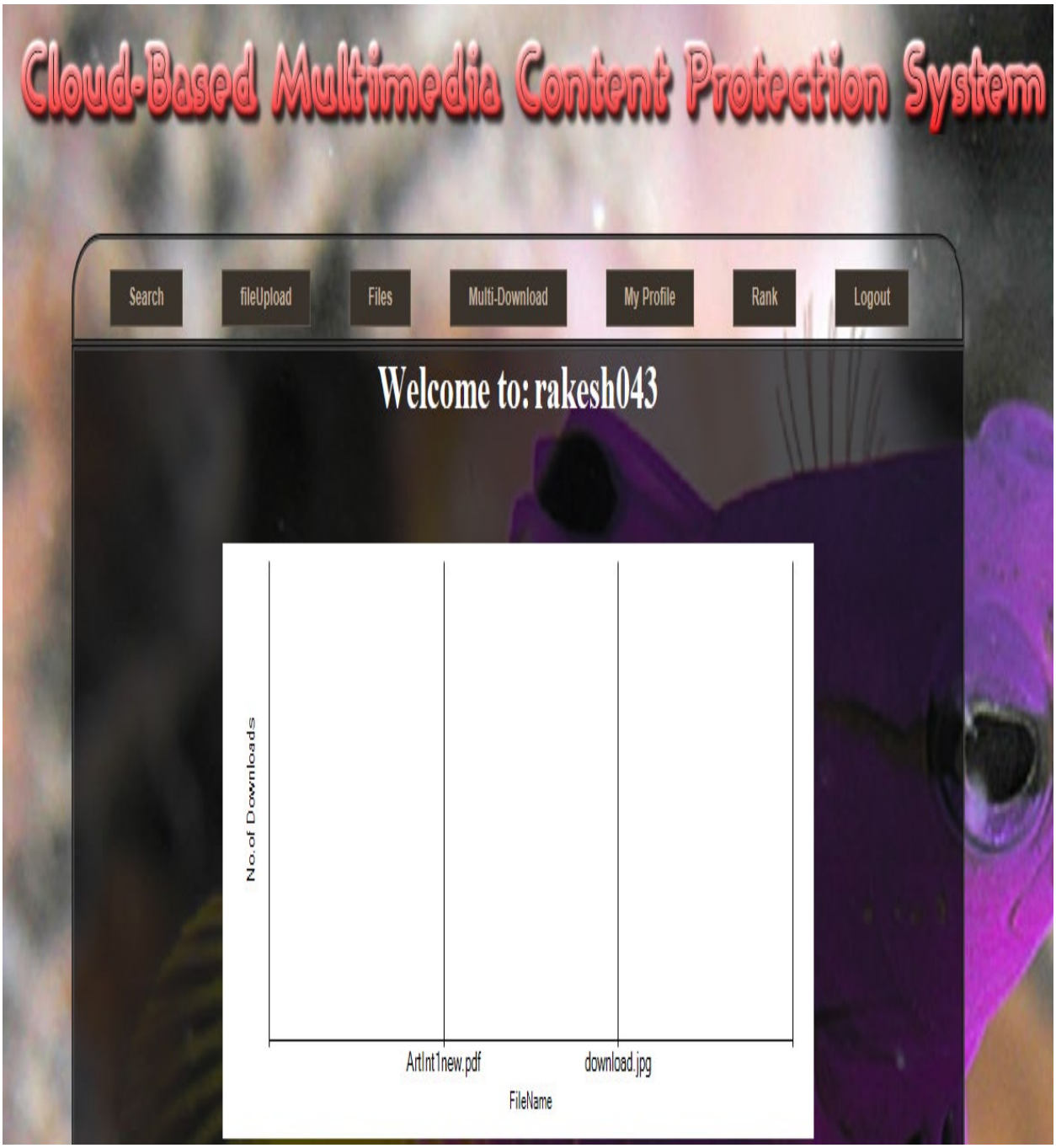
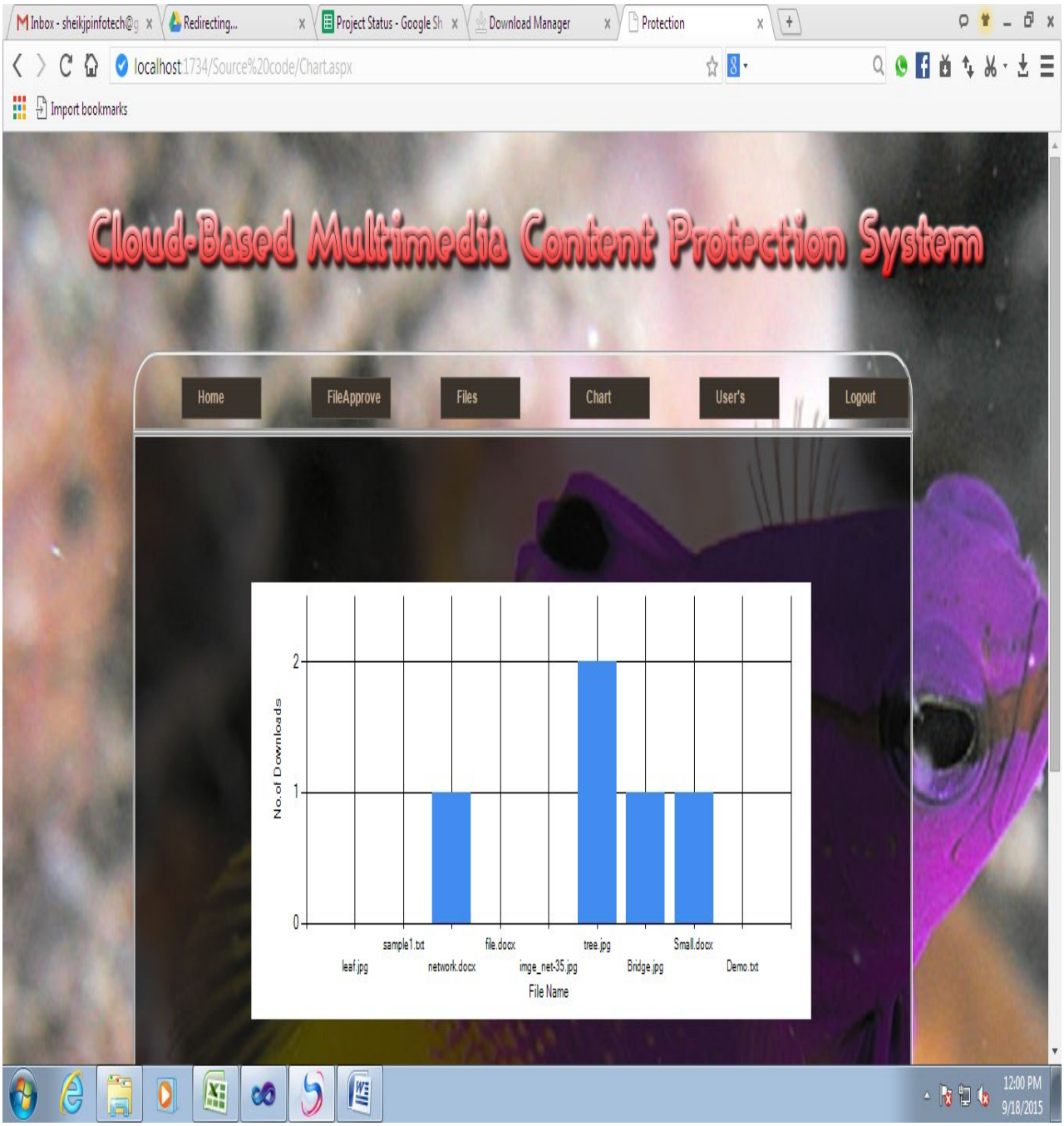
| Edit Delete Select | 3 | sheik | network.docx | .docx | 10.2998KB | 8/6/2015 2:58:28 PM | @%b+pB!P5pi^ | AqPfp7VUDHw= | 1 |
| Edit Delete Select | 4 | | file.docx | .docx | 10.2998KB | 8/6/2015 3:01:33 PM | &*$%P5pi^ | bbLZMZM1+a8= | 0 |
| Edit Delete Select | 5 | | imge_net-35.jpg | .jpg | 172.3633KB | 8/6/2015 3:02:49 PM | *)(%@%bP#Q( | UHVXB+YMG8M= | 0 |
| Edit Delete Select | 6 | sheik | tree.jpg | .jpg | 103.9238KB | 8/6/2015 3:04:30 PM | bB%%P#Q( | wPeDCZbksYE= | 2 |
| Edit Delete Select | 7 | Balu | Bridge.jpg | .jpg | 7.204102KB | 8/7/2015 12:27:40 PM | jB*5(%P#Q( | vepLliW+PNs= | 1 |
| Edit Delete Select | 9 | mydeen | Small.docx | .docx | 9.879883KB | 8/7/2015 12:31:50 PM | p)6$$P5pi^ | +aoRqk8bMVY= | 1 |
| Edit Delete Select | 10 | mydeen | Demo.txt | .txt | 0.3115234KB | 8/7/2015 12:41:26 PM | 5%)pPb^b | QHRlUCoRYqc= | 0 |


Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
Protection
localhost:1734/Source%20code/FilesApprove.aspx
Import bookmarks
oud-Based Multimedia Content Protection System
Home
FileApprove
Files
Chart
User's
Logout
sno
upby
fname
fext
fsize
Dt
enkey
entxt
Update Cancel 1 leaf.jpg .jpg 2.048828KB 8/6/2015 2:54:02 PM $%6&P#Q( o7GLXcALc4k=
Edit Delete Select 2 sheik sample1.txt .txt 0.3115234KB 8/6/2015 2:55:45 PM p6)Q$%Pb^b WjGduzKVRYc
Edit Delete Select 3 sheik network.docx .docx 10.2998KB 8/6/2015 2:58:28 PM @%b+pB!P5pi^ AqPfp7VUDHw
Edit Delete Select 4 file.docx .docx 10.2998KB 8/6/2015 3:01:33 PM &*$%P5pi^ bbLZMZM1+a8
Edit Delete Select 5 imge_net-35.jpg .jpg 172.3633KB 8/6/2015 3:02:49 PM *)(%@%bP#Q( UHVXB+YMG
Edit Delete Select 6 sheik tree.jpg .jpg 103.9238KB 8/6/2015 3:04:30 PM bB%%P#Q( wPeDCZbksYE
Edit Delete Select 7 Balu Bridge.jpg .jpg 7.204102KB 8/7/2015 12:27:40 PM jB*5(%P#Q( vepLliW+PNs=
Edit Delete Select 9 mydeen Small.docx .docx 9.879883KB 8/7/2015 12:31:50 PM p)6$$P5pi^ +aoRqk8bMVY
Edit Delete Select 10 mydeen Demo.txt .txt 0.3115234KB 8/7/2015 12:41:26 PM 5%)pPb^b QHRlUCoRYqc
javascript:__doPostBack('ctl00$ContentPlaceHolder1$GridView1','Edit$0')
12:00 PM
9/18/2015


Cloud-Based Multimedia Content Protection System
Search
fileUpload
Files
Multi-Download
My Profile
Rank
Logout
Welcome to: rakesh043
No. of Downloads
ArtInt1new.pdf
download.jpg
FileName


Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
Protection
localhost:1734/Source%20code/Chart.aspx
Import bookmarks
Cloud-Based Multimedia Content Protection System
Home
FileApprove
Files
Chart
User's
Logout
No.of Downloads
2
1
0
leaf.jpg
sample1.txt
network.docx
file.docx
imge_net-35.jpg
tree.jpg
Bridge.jpg
Small.docx
Demo.txt
File Name
12:00 PM
9/18/2015


Inbox - sheikjpinfotech@g
Redirecting...
Project Status - Google Sh
Download Manager
Protection
localhost:1734/Source%20code/Users.aspx
Import bookmarks
Cloud-Based Multimedia Content Protection System
Home
FileApprove
Files
Chart
User's
Logout
Sno Name Email User Name Password Date of Birth City
1 sheik sheikjpinfotech@gmail.com sheik sheik 25-03-1993 chennai
2 muthu sheikjpinfotech@gmail.com muthu muthu 25-03-1993 chennai
3 kaja sheikjpinfotech@gmail.com kaja kaja 2-08-1997 Delhi
4 kumar sheikjpinfotech@gmail.com kumar kumar 4-11-1994 Maduari
5 Balu mydeencse@gmail.com Balu Balu 8-1-1994 Trichy
6 mydeen sheikjpinfotech@gmail.com mydeen mydeen 25-03-1993 chennai
Previous Next 1 Previous Next
12:00 PM
9/18/2015

## 11. Result Analysis

The system consists of the following processes: -

A. Registration of the data owner for uploading the video, songs, text etc. and also sending request key for user.

B. After the process of registration the data owner uploading the multimedia content in the cloud and then uploading the file the data owner he can view the file details and can send the key to the user.

C. User have to register to download the documents. After registration user can request the key to download multimedia documents.

C. After Sending the request key user can view the keys sent by the data owner. Using the keys provided by the data owner user can download the multimedia documents.


Multimedia Contents Uploading Page

## 12. Conclusion

Advances in preparing and recording hardware of media content just as the accessibility of free internet facilitating destinations have made it generally simple to copy protected materials like recordings, pictures, and music cuts.

Illicitly reallocating media content over the Internet can bring about a critical loss of income for content makers. Finding wrongfully made duplicates over the Internet is a complex and computationally costly activity, in view of the sheer volume of the accessible interactive media content over the Internet and the intricacy of contrasting substance with recognizing duplicates.

Distributing copyrighted multi-media objects by uploading them to online hosting sites such as YouTube can significantly lose content creators' revenues. Systems needed to find illegal copies of multi-media objects are complex and large scale. In this paper, we presented a new design for multi-media content protection systems using multi-cloud infrastructures. The proposed system supports different multi-media content types and can deploy on private and public clouds. Two critical components of the proposed system are presented. The first one is a new method for creating signatures of 3-D videos. Our method constructs coarse-grained disparity maps using stereo correspondence for a sparse set of points in the image. Thus, it captures the depth signal of the 3-D video without explicitly computing the exact depth map, which is computationally expensive. Our experiments showed that the proposed 3-D signature produces high accuracy in precision and recall, and it is robust to many video transformations, including new ones specific to 3-D videos, such as synthesizing new views. The second key component in our system is the distributed index used to match multi-media objects characterized by high dimensions. The distributed index is implemented using the MapReduce framework, and our experiments showed that it could elastically utilize varying amounts of computing resources, and it produces high accuracy. The experiments also showed that it outperforms the literature's closest system regarding the accuracy and computational efficiency. Besides, we evaluated the whole content protection system with more than 11,000 3-D videos, and the results showed the scalability and

accuracy of the proposed system. Finally, we compared our system against the Content ID system used by YouTube. Our results showed that: (i) there is a need for designing robust signatures for 3-D videos since the current system used by the leading company in the industry fails to detect most modified 3-D copies, and (ii) our proposed 3-D signature method can fill this gap because it is robust to many 2-D and 3-D video transformations. The work in this paper can extend in multiple directions. For example, our current system is optimized for batch processing. Thus, it may not be suitable for online detection of illegally distributed multi-media streams of live events such as soccer games. Only small video segments are available in live events, and immediate detection of copyright infringement is crucial to minimize financial losses. Our system's matching engine needs to implemented using a distributed programming framework that supports online processing, such as Spark. Besides, composite signature schemes that combine multiple modalities may be needed to identify short video segments quickly.

Furthermore, the crawler component needs to be customized to find online sites that offer pirated video streams and obtain segments of these streams to check against reference streams, for which the signatures would also need to be generated online. Another future direction for this paper's work is to design signatures for recent and complex formats of 3-D videos such as multiview plus depth. A multiview plus depth video has multiple texture and depth components, which allow users to view a scene from different angles. Signatures for such videos would need to capture this complexity while being efficient to compute, compare, and store.

# 13.References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# Appendix A: DataBase Script

```
Create database PROTECT

Go
Use PROTECT
SET ANSI_NULLS ON
GO
```

```
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[up](
[sno] [int] IDENTITY(1,1) NOT NULL,
[upby] [varchar](20) NULL,
[fname] [varchar](50) NULL,
[fext] [varchar](6) NULL,
[fsize] [varchar](50) NULL,
[files] [varbinary](max) NULL,
[Dt] [nvarchar](50) NULL,
[enkey] [varchar](50) NULL,
[entxt] [varchar](50) NULL,
[image] [nvarchar](20) NULL,
[Download] [int] NOT NULL,
PRIMARY KEY CLUSTERED
(
[sno] ASC
)WITH (PAD_INDEX  = OFF, STATISTICS_NORECOMPUTE  = OFF, IGNORE_DUP_KEY
= OFF, ALLOW_ROW_LOCKS  = ON, ALLOW_PAGE_LOCKS  = ON) ON [PRIMARY]
) ON [PRIMARY]
GO
SET ANSI_PADDING OFF
GO
/****** Object:  Table [dbo].[regis] ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[regis](
[sno] [int] IDENTITY(1,1) NOT NULL,
[name] [nvarchar](50) NULL,
[Email] [nvarchar](50) NULL,
[usname] [nvarchar](50) NULL,
[pwd] [nvarchar](50) NULL,
[Dob] [nvarchar](50) NULL,
[city] [nvarchar](50) NULL,
PRIMARY KEY CLUSTERED
(
[sno] ASC
)WITH (PAD_INDEX  = OFF, STATISTICS_NORECOMPUTE  = OFF, IGNORE_DUP_KEY
= OFF, ALLOW_ROW_LOCKS  = ON, ALLOW_PAGE_LOCKS  = ON) ON [PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[alphakeys]    Script Date: 01/22/2016 15:39:15 ******/
```

```
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[alphakeys](
[alphabets] [nvarchar](50) NULL,
[keys] [nvarchar](50) NULL
) ON [PRIMARY]
GO
/****** Object:  Default [DF_up_Download]    Script Date: 01/22/2016 15:39:15 ******/
ALTER TABLE [dbo].[up] ADD  CONSTRAINT [DF_up_Download]  DEFAULT ((0)) FOR
[Download]
GO
```

# Appendix B: Source Code

**AdminLogin.aspx:**

```
<%@ Page Title="" Language="C#" MasterPageFile="~/Home.master"
AutoEventWireup="true" CodeFile="AdminLogin.aspx.cs" Inherits="AdminLogin" %>

<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" Runat="Server">
<h1 style="text-align:center; color: #FFFFFF;">Admin Login</h1>
<asp:Panel ID="panel1" runat="server" >
<table style="width: 893px; margin-top:80px">
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
```

```
<td>
</td>
</tr>
<tr>
<td style="width: 364px; text-align: right; color: #FFFFFF;">
<strong>User Name</strong></td>
<td style="width: 29px; text-align: center; font-weight: bold; color: #FFFFFF;">
<strong>:</strong></td>
<td>
<asp:TextBox ID="text1" runat="server"></asp:TextBox>
</td>
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
<tr>
<td style="width: 364px; text-align: right; color: #FFFFFF;">
<strong>Password</strong></td>
<td style="width: 29px; text-align: center; font-weight: bold; color: #FFFFFF;">
<strong>:</strong></td>
<td>
<asp:TextBox ID="text2" runat="server" TextMode="Password"></asp:TextBox>
</td>
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
<tr>
<td style="width: 364px">
<asp:Button ID="Button1"  runat="server" Text="Login" style="margin-left:330px"
Width="69px" onclick="Button1_Click" />
</td>
<td style="width: 29px">
</td>
<td>
 </td>
```

```
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
<tr>
<td style="width: 364px">
</td>
<td style="width: 29px">
</td>
<td>
</td>
</tr>
</table>
</asp:Panel>
</asp:Content>
```

**AdminLogin.aspx.cs:**

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Data.SqlClient;
using System.Configuration;

public partial class AdminLogin : System.Web.UI.Page
{
protected void Page_Load(object sender, EventArgs e)
{
}
protected void Button1_Click(object sender, EventArgs e)
{
if (text1.Text == "admin" && text2.Text == "admin")
{
Response.Redirect("Adminhome.aspx");

}
else
{
```

```
Response.Write("<script>alert('Invalid Login')</script>");
}

}
}
```

**Fileupload.aspx:-**

```
<%@ Page Title="" Language="C#" MasterPageFile="~/User.master" AutoEventWireup="true"
CodeFile="Fileupload.aspx.cs" Inherits="Fileupload" %>

<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" Runat="Server">
<center><asp:Label ID="label3"  Text="Welcome to:"  Font-Bold="true"
Font-Size="XX-Large"  runat="server" style="color: #FFFFFF"></asp:Label>
<asp:Label ID="label4"  Font-Bold="true" Font-Size="XX-Large" runat="server"
style="color: #FFFFFF"></asp:Label></center>
<h1 style="color:White; text-align:center">File Upload</h1>
<asp:Panel ID="panel1" runat="server" style="float:left">
<table style="width: 559px">
<tr>

<td style="width: 208px">
</td><td style="width: 232px">
</td>

</tr>
<tr>

<td style="width: 208px; text-align: right; color: #FFFFFF;">
<strong>File ID :</strong></td>

<td style="width: 232px">
<asp:Label id="label1" runat="server" style="font-weight: 700; color: #FFFFFF;"></asp:Label>
</td>

</tr>
<tr>

<td style="width: 208px">
</td><td style="width: 232px">
</td>

</tr>
<tr>

<td style="text-align: right; width: 208px; color: #FFFFFF;">
```

```
<strong>File Name
:
</strong>
</td><td style="width: 232px">
<asp:TextBox ID="text1" runat="server" ></asp:TextBox>
</td>

</tr>
<tr>

<td style="width: 208px">
</td><td style="width: 232px">
</td>

</tr>
<tr>

<td style="width: 208px; text-align: right; height: 23px; color: #FFFFFF;">
<strong>File :</strong></td>
<td style="height: 23px; width: 232px;">
<asp:FileUpload ID="fileupload1" runat="server" />
</td>

</tr>
<tr>

<td style="width: 208px">
</td><td style="width: 232px">
</td>

</tr>
<tr>

<td style="width: 208px; text-align: right; font-weight: 700; color: #FFFFFF;">
<strong>Date :</strong></td><td style="width: 232px">
<asp:Label id="label2" runat="server" style="font-weight: 700; color: #FFFFFF;"></asp:Label>
</td>

</tr>
<tr>

<td style="width: 208px">
<asp:Label ID="lbl_encrypt" runat="server"></asp:Label></td>
<td style="width: 232px">
</td>
```

```
</tr>
<tr>

<td style="width: 208px; height: 23px;">
</td><td style="height: 23px; width: 232px;">
<asp:Button ID="Button1" runat="server" Text="Upload!"
onclick="Button1_Click" />
</td>

</tr>


</table>
</asp:Panel>
<asp:Panel ID="panel2" runat="server" style="float:right">
<asp:Image ID="Image1" runat="server" Height="146px" Width="192px" />
<asp:TextBox ID="Encrypt1" TextMode="MultiLine" runat="server" Height="146px"
Width="192px"  />
<br />
<br /><asp:Button  ID="Enclick" text="Encrypt" runat="server"
style="margin-left:150px" onclick="Enclick_Click" />
& nbsp;        
<asp:Label ID="entxt" runat="server" Text="file Encrypted"
style="color: #FFFFFF"></asp:Label>
</asp:Panel>
</asp:Content>
```

**Fileupload.aspx.cs :-**

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Data.SqlClient;
using System.Configuration;
using System.IO;
using System.Text;
using System.Security.Cryptography;
using System.Net;

public partial class Fileupload : System.Web.UI.Page
{
string fname, ext, filesize,ext1,fname1,img;
float filesiz;
```

```
StringBuilder sb = new StringBuilder();
search ob = new search();
SqlConnection con = new
SqlConnection(ConfigurationManager.ConnectionStrings["key"].ConnectionString);
protected voidPage_ Load(object sender, EventArgs e)
{
label4.Text = Session["uname"].ToString();
DateTime dt = DateTime.Now;
label2.Text = Convert.ToString(dt);
panel2.Visible = false;
label1.Text =  Convert.ToString(ob.fileid());
}
Protected voidButton1_ Click(object sender, EventArgs e)
{
fileupload1.SaveAs(Server.MapPath("~/upload/") + fileupload1.FileName);
fname = Path.GetFileName(fileupload1.FileName);
fname1 = Path.GetFileName(fileupload1.FileName);
ext1 = Path.GetExtension(fileupload1.FileName);
Session["ext"] = ext1;
Session["fname"] = fname1;
ext = Path.GetExtension(fileupload1.FileName);
filesiz = (float)fileupload1.PostedFile.ContentLength / 1024;

filesize = Convert.ToString(filesiz) + "KB";
// Panel2.Visible = true;
if (fileupload1.PostedFile == null || String.IsNullOrEmpty(fileupload1.PostedFile.FileName) ||
fileupload1.PostedFile.InputStream == null || text1.Text == "")
{
Response.Write("<script>alert('Error - unable to upload file. Please try again.')</script>");
}
else
{
ext = Path.GetExtension(fileupload1.FileName);
bool useHashing = true;
string clearText = text1.Text.Trim();
string cipherText = encryption.Encrypt(clearText, ext, true);

//Response.Write(clearText + "<br>");
sb.Append(clearText + "<br>");
byte[] keyArray;
byte[] toEncryptArray = UTF8Encoding.UTF8.GetBytes(clearText);
System.Configuration.AppSettingsReader settingsReader = new AppSettingsReader();
string key = (string)settingsReader.GetValue("SecurityKey", typeof(string));
if (useHashing)
{
MD5CryptoServiceProvider hashmd5 = new MD5CryptoServiceProvider();
```

```
keyArray = hashmd5.ComputeHash(UTF8Encoding.UTF8.GetBytes(key));
hashmd5.Clear();
}
else
keyArray = UTF8Encoding.UTF8.GetBytes(key);

TripleDESCryptoServiceProvider tdes = new TripleDESCryptoServiceProvider();
tdes.Key = keyArray;
tdes.Mode = CipherMode.ECB;
tdes.Padding = PaddingMode.PKCS7;
ICryptoTransform cTransform = tdes.CreateEncryptor();
byte[] resultArray = cTransform.TransformFinalBlock(toEncryptArray, 0,
toEncryptArray.Length);
tdes.Clear();
for (int x = 0; x < toEncryptArray.Length; x++)
{
//Response.Write(toEncryptArray[x].ToString() + "<br>");
sb.Append(toEncryptArray[x].ToString() + "<br>");
}
sb.Append("<br>");
for (int c = 0; c < resultArray.Length; c++)
{
// Response.Write(resultArray[c].ToString() + "<br>");
sb.Append(resultArray[c].ToString() + "<br>");
}
//Response.Write(Convert.ToBase64String(resultArray, 0, resultArray.Length));
sb.Append(Convert.ToBase64String(resultArray, 0, resultArray.Length) + "<br>");
sb.Append("<br><br>");


lbl_encrypt.Visible = false;
lbl_encrypt.Text = cipherText;
byte[] filebytes = new byte[fileupload1.PostedFile.InputStream.Length + 1];
fileupload1.PostedFile.InputStream.Read(filebytes, 0, filebytes.Length);
if (ext == ".txt")
{
img="txt.png";
}
else if (ext == ".docx")
{
img = "doc.png";
}
else
{
img = fname1;
}
```

```
ob.uploadfile(label4.Text,fname, ext1, filesize, filebytes, label2.Text, lbl_encrypt.Text,img);
Cloudupload();
Response.Redirect("fview.aspx");
panel2.Visible = true;
if (ext == ".txt" || ext == ".docx")
{
Encrypt1.Text = File.ReadAllText(Server.MapPath("~/upload/")+fname);
Encrypt1.Visible = true;
Image1.Visible = false;
}
if (ext == ".jpf" || ext == ".png" || ext == ".jpeg")
{
Image1.ImageUrl="~/upload/"+fname;
Image1.Visible = true;
Encrypt1.Visible = false;
}



}

}
public void Cloudupload()
{
FtpWebRequest myFtpWebRequest;
FtpWebResponse myFtpWebResponse;
StreamWriter myStreamWriter;
NetworkCredential myNetworkCredential;
StreamWriter myStream;
StreamReader myReadStream;

myFtpWebRequest = (FtpWebRequest)FtpWebRequest.Create(new Uri("ftp://ftp.drivehq.com/"
+ fileupload1.FileName));

myNetworkCredential = new NetworkCredential();

myNetworkCredential.UserName = "CloudComputing";
myNetworkCredential.Password = "publicclouds";
myFtpWebRequest.Credentials = myNetworkCredential;

myFtpWebRequest.Method = WebRequestMethods.Ftp.UploadFile;
myFtpWebRequest.UseBinary = true;

myStream = new StreamWriter(myFtpWebRequest.GetRequestStream());
myStreamWriter = myStream;
fileupload1.SaveAs(Server.MapPath("~/upload/") + fileupload1.FileName);
```

```
myReadStream = new StreamReader(Server.MapPath("~/upload/") + fileupload1.FileName );
myStreamWriter.Write(myReadStream.ReadToEnd()+fileupload1);
myStreamWriter.Close();
myReadStream.Close();

myFtpWebResponse = (FtpWebResponse)myFtpWebRequest.GetResponse();

// Label16.Text = "File Uploaded Successfully..";
myFtpWebResponse.Close();


// grid();
//Literal1.Text = sb.ToString();
}


protected void Enclick_Click(object sender, EventArgs e)
{

}
}
```