

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Information Engineering (FEM)**



**Bachelor Thesis**

**The Role of Webml Tools in Webpage Development**

**Sadman Amir**

**Supervisor**

**doc. Ing. Vojtěch Merunka, Ph.D**

**© 2019 CULS Prague**

## **SUMMARY**

---

This thesis we introduce IFML (Interaction Flow Modeling Language) a standardized modeling language for creating visual models of user interactions and front-end behavior in software systems which has adopted by a computer standards fellowship organization OMG (Object Management Group). “A portion of OMG's achievements are the Common Object Request Broker Architecture™ (CORBA™), Unified Modeling Language™ (UML™), Meta Article Facility™ (MOF™), XML Metadata interchange (XMI™) and the Common Warehouse Metamodel™ (CWM™). All these standards add to making model driven advancement a reality. Generally, around 2001 OMG received another structure called the Model Driven Architecture Design (MDA). Not at all like different gauges of the OMG the MDA offers an approach to utilize models rather than the customary source code.

The mission of OMG is to create innovation measures that give true an incentive to a great many vertical enterprises. OMG is devoted to uniting its global enrollment of end-clients, sellers, government organizations, colleges and research foundations to create and modify these norms as innovations change consistently.”

In upcoming parts describe the origin of IFML models, concepts, front end modeling principles, integration with UML models, IFML modeling tool WebRatio and then using WebRatio to model and analyze some web pages of a website that implements business logic in the area of administration of the voluntary non-governmental organization for initial software implementation.

### **Objectives of thesis**

The goal of this thesis is to develop an example web-based application using the software modeling tools IFML that implements a business process in the area of administration of the voluntary non-governmental organization of its members having their common interest. The solution in IFML will support three levels of user access: First, it is public free access providing basic data without need of registration and password protection. Second, it is password-protected access for a standard member of the organization. Third, an administration access for committee members of this organization.

## **Methodology:**

The thesis will have two main parts. First, one will be the description of the used technology, theory and tool. The second part will be the project report. The project report will consist of the description in IFML which will be designed and evaluated using the modeling tool WebRatio. The requirement analysis will also include linked UML models which and subsequently will be for the initial software implementation. The entire model will be also used as a source for the operational manual of the designed application.

## **Extended Abstraction:**

The main goal of this thesis is to illustrate the importance of model-driven architecture concepts for the development of Software engineering and encouragement software developers to make a keen interest in the modeling language. The model driven architecture has approached by implementing an outstanding modeling language IFML which demonstrates a web application systems data structure model and also puts that model in a front-end graphical modeling to understand user requirements and interaction process for improving the missing aspects. IFML supports User Interface and it can create such type of system which can fit with interface and behave more precisely to increase user interaction. In this thesis first the evolution of IFML has been discussed so that the reader can understand its purpose, then the model type and syntax have been discussed for understanding the practical part. At the end introduced with the IFML modeling tool Web ratio to create some small webpages of a voluntary non-governmental organization website system structure model and design the model graphically to find out the different types of user's common interest.

**Keywords:** IFML, UI, Case, UML, Event, Action, Complexity, Domain Model, Types, WEB Model Design.

## **Conclusion:**

In this thesis I have demonstrated brief description of IFML model which is inspired by model driven architecture and software system interaction design. Every concepts and syntax's of IFML have been discussed. The UI complexity and several problems have been discussed. Then I have

introduced WEBML tool Webratio which adopts IFML model. The tool has showed the interaction flow of every components of a webpage. Maps User interactions and their common requirements. Finally has provided solution by analyzing using domain and front end model in order to mark common interests of a user(public/member/administrator).I provide some proposals on basis of my thesis ,hope that my research proposals will encourage the learners to experiment further in model driven system engineering sector.

## **REFERENCES:**

1. BRAMBILLA, Marco and Piero FRATERNALI. Interaction Flow Modeling Language: Model-Driven UI Engineering of Web and Mobile Apps With IFML. Waltham, MA: Morgan Kaufmann, 2015. ISBN 978-0-12-800108-0.
2. CONALLEN, Jim. Building Web applications with UML. 2nd ed. Boston: Addison-Wesley, c2003. ISBN 0-201-73038-3.
3. IFML and WEbRatio public sources in the Internet ([www.ifml.org](http://www.ifml.org)).