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Efthimios Alepis · Maria Virvou

Object-Oriented User Interfaces for Personalized Mobile Learning

Springer

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Foreword

Efthimios Alepis and Maria Virvou have investigated two recent related areas that attracted the attention of the scientific community, namely mobile learning and interfaces. The motivation arose from the fact that, when integrating these technologies, we obtain personalized educational software that meets the prerequisites of modern mobile learning software that has become very popular worldwide in recent years. These two technologies have made significant advances recently and have become hot disciplines with increasing research projects around the world in both academia and industry.

Demand for mobile learning is growing at a remarkable rate; however, there seems to be a shortfall in software development to meet this fast-growing demand and associated challenges.

This book is a significant addition to this field and an excellent effort to address these challenges and trends. The authors employ an interesting approach that utilizes the Object-Oriented (OO) method in order to find answers for these issues and difficulties. They chose to follow the object-oriented scheme so as to embrace the basic concepts and traits in order to offer a very flexible, vigorous, and extendable structure for the devised framework.

Specifically, in the book, the authors develop a broad paradigm built using the OO approach. I found that each chapter concentrates on the structure of a particular section of the paradigm; however, it puts all of these together in a nice way.

I believe that the authors have done a good job at addressing the tackled issues. I consider the book a good addition to the areas of mobile learning and user interfaces. It definitely will help software developers to build better state-of-the-art personalized software aiming at mobile education, while maintaining a high level of adaptivity and user-friendliness within individualized-mobile interfaces.

New Jersey, USA — Prof. Mohammad S. Obaidat

Preface

This book covers two very important and quite recent scientific fields, namely that of mobile learning and the other, advanced user interfaces. These two scientific fields' successful combination can result in personalized educational software that meets the requirements of state-of-the-art mobile learning software. Both mobile learning and user-personalized interfaces have grown over the last decade from minor research fields to a large set of significant projects in universities, schools, workplaces, museums, and cities around the world. According to a report in 2013, "the market for Mobile Learning products and services has been growing at a five-year compounded annual growth rate of more than 25 %." Benefits by using and/or incorporating these technologies in software engineering include social, economic, and educational gains. However, the swift growth of new software technologies and their corresponding services keeps in pace with new challenges in these scientific fields. As a result, new approaches try to resolve the resulting problems and at the same time give more potential and robustness to the next generation of software applications.

In this book, the authors try to provide a framework that is capable of incorporating the aforementioned software technologies, exploiting a wide range of their current advances and additionally investigates ways to go even further by providing potential solutions to future challenges. Our proposed approach uses the well-known Object-Oriented method in order to address these challenges. By using the OO approach, we adopt its fundamental concepts and features for the purposes of providing a highly adjustable, dynamic, and extendable architecture for our proposed framework. Throughout this book, a general model is constructed using Object-Oriented Architecture. Each chapter focuses on the construction of a specific part of this model, while in the conclusion these parts are unified. We believe that this book will help software engineers build more sophisticated personalized software that targets in mobile education, while at the same time retaining a high level of adaptivity and user-friendliness within human-mobile interaction.

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