Project Acronym: MEDIS

Project Title: A Methodology for the Formation of Highly Qualified Engineers at Masters Level in the Design and Development of Advanced Industrial Informatics Systems

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Author(s): Radu Dobrin and Sasikumar Punnekkat

Partner(s) Contributing:

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Project Co-ordinator

Company name :	Universitat Politecnica de Valencia (UPV)
Name of representative :	Houcine Hassan
Address :	Camino de Vera, s/n. 46022-Valencia (Spain)
Phone number :	+34 96 387 7578
Fax number :	+34 963877579
E-mail :	husein@upv.es
Project WEB site address :	https://www.medis-tempus.eu

Context

WP 2	Design of the AIISM-PBL methodology
WPLeader	Universitat Politècnica deValència (UPV)
Task 2.3	Development of the AIISM teaching resources - Mobile and Cloud Computing Platforms
Task Leader	MDU
Dependencies	UPV, MDU, TUSofia, USTUTT, UP

Author(s)	Radu Dobrin and Sasikumar Punnekkat
Contributor(s)	
Reviewers	

History

Version	Date	Author	Comments
0.1	01/03/2014	Radu Dobrin and Sasikumar Punnekkat	Initial draft
1.0	19/09/2014		Final version

Table of Contents

1 Executive summary

WP 2.3 details the learning materials of the Advanced Industrial Informatics Specialization Modules (AIISM) related to the Mobile and Cloud Computing Platforms.

The contents of this package follows the guidelines presented in the MDU's documentation of the WP 1 (Mobile and Cloud Computing Platforms)

- The PBL methodology was presented in WP 1.1
- The list of the module's chapters and the temporal scheduling in WP 1.2
- The required human and material resources in WP 1.3
- The evaluation in WP 1.4

The rest of the document is organized as follows: Section 2 introduces the course and the outlines. Section 3 details the lectures, divided in subsections for each chapter. Section 4 describes the labs. There is a special subsection for each chapter. Section 5 gives an overview to the seminars. Each seminar has its own subsection. Finally section 7 lists the bibliography and the references.

2 Introduction

This document describes the second chapter of the MEDIS module that MDU is developing. The chapter presents an introduction to the mobile application development in Android, iOS, BlackBerry and Windows Mobile platforms. Moreover, it presents the cross platform development including PhoneGap, Appcelerator Titanium and Xamarin. The chapter is organized into two lectures as described in the following section.

3 Lectures

This chapter includes Lecture 3 and Lecture 4 focusing on mobile application development platforms and cross platform development respectively. Lecture 3 (lecture3_IDE.pptx) gives an overview of Android, iOS, BlackBerry and Windows Mobile platforms, their integrated features, dedicated Integrated Development Environment (IDE) and Software Development Kit (SDK).
Lecture 4 (lecture4_CrossPlatformDev.pptx) gives an overview of the cross platform development, then, describes a few frameworks for it such as PhoneGap, Appcelerator Titanium and Xamarin.
At the end of Chapter 2, students are supposed
- To be familiar with dedicated platforms for mobile application development more specifically Andriod and iOS,
- To have the basic understanding of the cross platform development approach and PhoneGap, Appcelerator Titanium, Xamarin frameworks.

4 Lab

Chapter 2 includes 2 labs (Lab 3 and Lab 4). Lab 3 is about installation of Android IDE and getting familiar with Android and Java programming through a basic Android application development (*HelloWorld*).

Lab 4 includes a brief introduction to the basic application development, getting familiar with the User Interface (UI) components and making the connection of the representation of the Water Tank Controller design with these components (widgets). Lab 4 also includes exercises that are useful for the Water Tank Controller development. References and links for further reference are also provided.

5 Seminar

Students are required to make a short report of Android Studio features and its work flow in Seminar 3. In Seminar 4, students are supposed to run the basic *HelloWorld* app in emulator and make a report of the steps they've taken and compare it when running the app on a real device.

6 Miniproject

In Miniproject 3, students should make a report of Xcode, its features and interface builder using the links and references that are provided. In Miniproject 4, students are supposed to make a report of Rhodes platform features and compare its features with platforms discussed in Lecture 4.

7 References

[1] Lundrigan, L., Graupera, V.,, Allen, S. (2010). Pro smartphone cross-platform development - iPhone, BlackBerry, Windows Mobile, and Android Development and Distriubution. PA USA: Apress.
[2] Android: https://developer.android.com/index.html
[3] iOS: http://developer.apple.com/iphone
[4] BlackBerry: http://na.blackberry.com/eng/developers/
[5] Windows Mobile: https://dev.windows.com/en-us/getstarted
[6] PhoneGap: http://www.phonegap.com/
[7] PhoneGap: http://wiki.phonegap.com/Roadmap
[8] Appcelerator Titanium: http://www.appcelerator.com
[9] Xamarin: http://xamarin.com/
[10] Rhodes: http://rhomobile.com/