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

Contract Number: 544490-TEMPUS-1-2013-1-ES-TEMPUS-JPCR

Starting date: 01/12/2013 **Ending date:** 30/11/2016

Deliverable Number: 2.3

Title of the Deliverable: AIISM teaching resources - Mobile and Cloud Computing Platforms

Task/WP related to the Deliverable: Development of the AIISM teaching resources - Mobile and Cloud Computing Platforms

Type (Internal or Restricted or Public): Internal

Author(s): Radu Dobrin and Sasikumar Punnekkat

Partner(s) Contributing:

Contractual Date of Delivery to the CEC: 30/09/2014

Actual Date of Delivery to the CEC: 30/09/2014

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. Section 4 describes the labs. Section 5 gives an overview to the seminars. Finally section 7 lists the bibliography and the references.

2 Introduction

Chapter 4 includes two lectures and gives an overview of the Graphical User Interface (GUI) in general as well as the GUI for Android and iOS platforms.

3 Lectures

This chapter has 2 lectures. Lecture 7 (*lecture7_GUI1.pptx*) covers GUI notion, major components and major paradigms in computer science. Moreover, it describes the basic GUI standards that are formed based on the contributing human factors.

Lecture 8 (*lecture8_GUI2.pptx*) covers GUI for Android and iOS. Firstly, it presents an overview of the GUI in Android followed by *View* and *ViewGroup* description to build Android UI elements. It also describes Android layouts, defining the visual structure of a UI, attributes, ID and common layouts. Moreover, XML is described as an approach for layout declaration in Android. This lecture continues talking about the GUI in iOS, how to design a UI and define the interactions.

At the end of the lectures students will be able

- To understand the GUI in general and how to develop them efficiently in their applications
- To develop simple GUIs in their applications for Android platform

4 Lab

The chapter includes 2 labs. Lab 7 is about creating an Android layout in XML that includes a text field and a button.

In Lab 8, students will develop Lab ”7” further such that it responds when the button is pressed by sending the content of the text field to another activity.

5 Seminar

There are 2 seminars in Chapter 4. Seminar 7 is about action bar that is one of the most important design elements for the application's activities. Students are supposed to discuss the steps required to add action bar to their UI.

In Lab ”8”, students made a simple application that shows an activity (a single screen) with a text field and a button. In Seminar 8, they should discuss how the application can start a new activity when the user clicks the *Send* button.

6 Miniproject

This chapter includes 2 miniprojects. In Miniproject 7, students should discuss the ways to intercept the events from user’s interaction with an Android application. More specifically, they should discuss *Event Listeners* and *Event Handlers* interfaces.

In Miniproject 8, they should discuss the steps to build a dynamic UI using Android fragments.

7 References

[1] Graphical User Interface Design and Evaluation: A Practical Process by Alan Moore, David Redmond-Pyle
[2] GUI: http://old.sigchi.org/bulletin/1998.2/students.html
[3] GUI: http://www.fujitsu.com/downloads/MAG/vol49-2/paper14.pdf
[4] GUI: https://www.hcde.washington.edu/files/521/jan14_lecture_ppt.pdf
[5] Android UI: http://developer.android.com/guide/topics/ui/index.html
[6] Android Layouts: http://developer.android.com/guide/topics/ui/declaring-layout.html
[7] ViewGroup: http://developer.android.com/reference/android/view/ViewGroup.html
[8] View: http://developer.android.com/reference/android/view/View.html
[9] Android Layout Resources:
http://developer.android.com/guide/topics/resources/layout-resource.html
[10] Android Activities:
http://developer.android.com/guide/components/activities.html%23Lifecycle
[11] iOS UI:
https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/DesigningaUserInterface.html
[12] Apple Tutorial, Storyboards:
https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/SecondTutorial.html#//apple_ref/doc/uid/TP40011343-CH8-SW1