# SAGE University, Indore

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| **Institute Name: Institute of Computer Application** | | | | | | | |
| **Recommended Programs :**   1. Master of Computer Application (MCA) | | | | | **Semester: IV** | | |
| **Course Name** | Mobile Application Development | | **Course Code** | CAPDSAAD001P | | | |
| **Credit Hours** | L | T | P | N | | **Total Credits** | 2 |
| - | - | 4 | - | |
| **Prerequisites** | Fundamentals of Computers, BCAFCP01T and Lab Fundamentals of Computers- BCAFCP01P | | | | | | |
| **Course Objectives** | 1. A student is expected to design, implement, document and present a mobile client/server system using standard Java and Java 2 Micro Edition (J2ME) platform. 2. To design and implement a system that consists mainly of a mobile client (MC) and a Proxy Server (PS). MC will be written in J2ME, MIDP 2.0, while PS will be written in standard Java. 3. To use a mobile phone emulator to develop and demonstrate the experiments. | | | | | | |
| **Course Content** | **LIST OF EXPERIMENTS:**   1. Installation of Java Wireless Toolkit (J2ME) 2. Working with J2ME Features:   Working with J2ME Features: Say, creating a Hello World program Experiment with the most basic features and mobile application interaction concepts (lists, text boxes, buttons, radio boxes, soft buttons, graphics, etc)  Create a program which creates to following kind of menu.   * cut * copy * past * delete * select all * unselect all     2.2.Event Handling.  Create a menu which has the following options:   * cut - can be on/off * copy - can be on/off * paste - can be on/off * delete - can be on/off * select all - put all 4 options on * unselect all - put all 4 options off      * 1. Input checking   Create an MIDP application which examine, that a phone number, which a user has entered is in the given format.   * + - Area code should be one of the following: 040, 041, 050, 0400, 044     - There should 6-8 numbers in telephone number (+ area code)     Threads & High Level UI:   * 1. Create a slide show which has three slides, which includes only text. Program should change to the new slide after 5 seconds. After the third slide program returns to the first slide.      * 1. High-level UI   Create a MIDP application, which show to the user 5-10 quiz questions. All questions have 4 possible options and one right option exactly. Application counts and shows to the user how many right answers were right and shows them to user.    3.3 Create a MIDP application, where the user can enter player name and points. The program saves the information to the record using RMS at MIDP device. Program should also print out the top 10 player list to the end user. You can use this class in your game if you made own class for saving and reading record sets.   * 1. Working on Drawing and Images   Create a slide show which has three slides, which includes pictures at PNG format. Program should change to the new slide other 5 seconds    4.2 Create a MIDP application, which draws a bar graph to the display. Data valuescan be given at int[] array.  4.3. Create a MIDP application, which draws a bar graph to the display. Data values can be given at int[] array. You can enter four data (integer) values to the input text field.  5 Developing Networked Applications using the Wireless Toolkit  6.1. Authentication with a Web Server  Write a sample program to show how to make a SOCKET Connection from j2me phone.  This J2ME sample program shows how to how to make a SOCKET Connection from a J2ME Phone. Many a times there is a need to connect backend HTTP server from the J2ME application. shows how to make a SOCKET connection from the phone to port 80.6.2. Login to HTTP Server from a J2ME Program This J2ME sample program shows how to display a simple LOGIN SCREEN on the J2ME phone and how to authenticate to a HTTP server.  Many J2ME applications for security reasons require the authentication of the user. This free J2ME sample program, shows how a J2ME application can do authentication to the backend server.  Note: Use Apache Tomcat Server as Web Server and Mysql as Database Server.  7 & 8 Web Application using J2ME  The following should be carried out with respect to the given set of application domains: (Assume that the Server is connected to the well-maintained database of the given domain. Mobile Client is to be connected to the Server and fetch the required data value/information)  Students Marks Enquiry Town/City Movie Enquiry  Railway/Road/Air (For example PNR) Enquiry/Status Sports (say, Cricket) Update Town/City Weather Update  Public Exams (say Intermediate or SSC)/ Entrance (Say EAMCET) Results Enquiry | | | | | | |
| **Text Books** | T1 [Beginning J2me: From Novice To Professional](http://www.amazon.com/exec/obidos/ASIN/1590594797/hashbang-20) by Jonathan Knudsen, Sing Li  T2 [Developing Scalable Series 40 Applications : A Guide for Java Developers (Nokia Mobile Developer)](http://www.amazon.com/exec/obidos/ASIN/0321268636/hashbang-20) by Michael Juntao Yuan, Kevin Sharp | | | | | | |
| **References** | R1 [Programming Java 2 Micro Edition for Symbian OS: A Developer's Guide to Midp 2.0 [DOWNLOAD: ADOBE READER]](http://www.amazon.com/exec/obidos/ASIN/B00030UOXA/hashbang-20) by Martin de Jode  R2 [Mobile Portals in Western Europe, Forecast and Analysis, 2003-2008 [DOWNLOAD: PDF]](http://www.amazon.com/exec/obidos/ASIN/B0002KK7OM/hashbang-20) by IDC, Rosie Secchi | | | | | | |
| **Course Outcomes** | After the Course Completion the student would able to  CO1 :Develop and design the mobile application  CO2 :Learn how two mobile device Communicate  CO3: Design the mobile UI  CO4 :Identify various concepts of mobile programming that make it unique from programming for other platforms,  CO5: Critique mobile applications on their design pros and cons, | | | | | | |

**Mapping of Course outcome with Program Outcomes, PSO’s, and Knowledge Levels (As per Blooms Taxonomy)**

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| **CO/PO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** | **PSO4** | **Knowledge Levels (K1, K2, …, K6)** |
| **CO1** | 1 |  |  |  | 3 |  |  |  |  |  |  |  | 1 |  |  |  | K3 |
| **CO2** |  | 2 |  |  |  | 2 |  |  | 1 |  |  |  |  | 2 |  |  | K1 |
| **CO3** |  | 1 |  | 2 |  |  |  | 3 |  |  |  |  |  | 1 |  | 2 | K3 |
| **CO4** |  | 2 |  |  |  | 2 |  |  | 1 |  |  |  |  | 2 |  |  | K2 |
| **CO5** | 1 |  |  |  | 3 |  |  |  |  |  | 1 |  | 1 |  |  |  | K3 |

**High-3 Medium-2 Low-1**

**K1 =>Remember K2 =>Understand K3 =>Apply K4 =>Analyze K5 =>Evaluate K6 =>Create**

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| Designed By:  **(Name with Sign.)** | Checked By:  **(Name with Sign.)** | Approved By:  **(Name with Sign.)** |