

Branch Name:	MCA
Program Code:	CS201
Course Title:	Fundamentals of Java Programming Practical
Course Code:	3CS2010203P
Pre-requisite Course:	Programming Skills

Course Objective:

The objectives of the course are to:

1. Get a better understanding of the concepts of Object-Oriented Programming Language and use of Java.
2. Develop proficiency in creating console based and GUI based applications using the Java Programming Language.
3. Gets a good understanding of developing multithreaded applications using Java Programming Language.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
-	-	3	3	-	-	25	25	50

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may Change/formulate it as per his/her methodology and requirement.

Sr. No	Practical Experiments
1.	<p>1.1. Write a program to find the sum of all integers greater than 100 & less than 200 and are Divisible by 5.</p> <p>1.2 Write a simple java application to print a pyramid with 5 lines. The first line has one character; the second line has two characters and so on. The character to be used in the pyramid is taken as a command line argument.</p> <p>1.3 Write a Java application which takes several command line arguments, which are supposed to be the names of students and prints output as given below: Number of arguments = 3 1: Tom 2: Dick 3: Harry</p> <p>1.4 Write a Java program to sort the elements of an array provided as command line in ascending order.</p> <p>1.5 Write a java application that will take two different String objects and perform different operations on them like checking the equality of two strings, reverse the string, change case etc.</p>
2.	<p>2.1 Define a class called Student. Each Student has a rollno, name, marks and percentage. Define variables, methods and constructor for the Student class. Also write a class called TestStudent; with the main method to test the methods and constructors of the Student class.</p> <p>2.2 Define a class called Cartesian Point, which has two instance variables, x and y. Provide the methods get X() and getY() to return the values of the x and y values respectively, a method called move() which would take two integers as parameters and change the values of x and y respectively. A method called display() which would display the current values of x and y. Now overload the method move() to work with a single parameter, which would set both x and y to the same values. Provide constructors with two parameters and overload to work with one parameter as well. Now define a class called Test Cartesian Point, with the main method to test the various methods in the Cartesian Point class.</p> <p>2.3 An educational institution wishes to maintain a database of its employees. The database is divided into a number of classes whose hierarchical relationships are as follows: Staff (code, name): the base class Teacher (subject, publication):child class of the Staff Officer (grade): child class of the Staff. Note that the information given in brackets specifies the minimum information required for each class. Specify all classes and define functions and constructors to create the database and retrieve information as and when needed.</p> <p>2.4 Write a program that demonstrates the concept of abstract methods and class.</p> <p>2.5 Write a program that imports the user defined package and access the members of the classes that are contained by the package.</p> <p>2.6 Write a java application that takes the current date from the system and performs the following. ✓ Display the date in format like “dd-MMM-yy”. ✓ Apply comparison of two dates.</p> <p>2.7 Write a program that demonstrates the concept of Vector class constructors and its all methods.</p> <p>2.8 Write a program that demonstrates the concept of HashMap constructors and its all methods.</p> <p>2.9 Write a program that demonstrates the concept of ArrayList constructors and its all methods.</p>
3.	<p>3.1 Write a java program that demonstrates the concept of multithreading.</p> <p>3.2 Write a java program which shows the use of wait() and notify() methods.</p>
4	<p>4.1 Write a program which lists all files in a specific directory with its name, length, and last modification date. The directory name should be passed as command line argument.</p> <p>4.2 Write a program that copies all the content from one file to another.</p> <p>4.3 Write a program to compare two files. The filename must be passed as a command line argument. Provide proper error messages and perform appropriate exception handling where ever required.</p> <p>4.4 Write program that creates simple java bean which will give the appropriate message such as Good Morning, Good Noon or Good Night to the user based on the hours of the day.</p>

- | | |
|----------|---|
| 5 | <p>5.1 Create a frame with three text Fields and two buttons add and subtract. User will enter numeric values in the Text Fields. When add button is pressed, the addition of the two values should be displayed in the third Text Field. Same the Subtract button should perform the subtraction operation</p> <p>5.2 Make a frame that contains three scroll-bars. The scroll-bars adjust the Red, Green and Blue components of the frame color.</p> <p>5.3 Write a program that creates a scrolling list with several choices and informs you about selection of items using a label.</p> <p>5.4 Write a program to display the focus status of components in the label.</p> <p>5.5 Make font size and font type List Boxes and give that effect in your Label or Text Box.</p> <p>5.6 Create a user entry form for student data. Users will enter roll no, name, department and semester in the form. Use a Radio Button for the department. When the user clicks on the Insert button all the values should be displayed in the Text Area.</p> <p>5.7 Write a program to draw line, rectangle, oval and text using graphics methods.</p> <p>5.8 Write a program to create the Menu within the Frame.</p> <p>5.9 Write a program to display Load and Save file dialog & display the name of a selected file from the file dialog.</p> <p>5.10 Write a program to explain the concept of adapter class for window listeners.</p> <p>5.11 Create an applet which has a TextField to accept a URL string, and displays the document of the URL string in a new browser window.</p> |
|----------|---|

Text

Books:

- Herbert Schildt, "The Complete Reference Java2", Fifth Edition, Tata McGRAW-Hill

Reference Books:

- Pravin Jain, "The class of Java" Pearson Education, (2010).
- Ivor Horton, "Beginning Java 2", JDK 5 Edition, Wiley Computer Publishing, (2007)

List of Open Source Software/learning website:

<https://www.geeksforgeeks.org>

<https://www.w3schools.com>

<https://www.codecademy.com>

<https://www.tutorialspoint.com>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Create appropriate classes using the Java Programming Language for solving real world problems.	6. Creating, 5. Evaluate 3. Applying 4. Analyze
CLO2	Develop console based and GUI based applications using the Java Programming Language.	1 Remembering 2. Understanding 6. Creating
CLO3	Develop multi-threaded applications using the Java Programming Language	1 Remembering 2. Understanding 6. Creati
CLO4	Create Applets for simple web based applications.	6. Creating, 5. Evaluate 3. Applying 4. Analyze
CLO5	Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.	3. Applying, 6. Creating
CLO6	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.	1 Remembering 2. Understanding 6. Creating

Mapping of CLOs with POs & PSOs

Course	Program Outcomes (POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1		H	H				L				M	M	H	M
CLO2		H	H			M		M		H	M	M	H	M
CLO3					M	H		M					H	M
CLO4		M	M	M		M		M	M					M
CLO5				M	H	M	H	M	H					
CLO6										L		M		H

H:High, M:Medium, L:Low