PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY
(Autonomous)
Kanuru, Vijayawada-520007
DEPARTMENT OF CSE (Data Science)
II B.Tech – I Semester CSE(Data Science)
OBJECT ORIENTED PROGRAMMINGTHROUGH JAVA LAB

Course Code:	23DS3352	Year:	II	Semester:	I
Course Category:	Professional Core	Branch:	CSE (Data Science)	Course Type:	Practical
Credits:	1.5	L – T – P	0-0-3	Prerequisites:	C Programming language
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Demonstrate experimental procedures through oral communication and submit comprehensive documentation reports.	L2
CO2	Apply the concepts of object-oriented programming and Java programming constructs to develop applications.	L3
CO3	Implement programs as an individual on different IDEs/ online platforms.	L3
CO4	Analyze outputs using given constraints/test cases.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: Substantial, 2: Moderate, 1: Slight)												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2									2		
CO2	3											
CO3	3				3							
CO4		3										3

Syllabus		
S No.	CONTENTS	Mapped CO
1	**Exercise – 1**: **a)** Write a JAVA program to display default value of all primitive data type of JAVA **b)** Write a JAVA program that display the roots of a quadratic equation $ax^2+bx=0$. Calculate the discriminate D and basing on value of D, describe the nature of root.	**CO1, CO2, CO3,CO4**

2	**Exercise - 2** **a)** Write a JAVA program to search for an element in a given list of elements using binary search mechanism. **b)** Write a JAVA program to sort for an element in a given list of elements using bubble sort **c)** Write a JAVA program using StringBuffer to delete, remove character.	**CO1, CO2, CO3,CO4**
3	**Exercise - 3** **a)** Write a JAVA program to implement class mechanism. Create a class, methods and invoke them inside main method. **b)** Write a JAVA program implement method overloading. **c)** Write a JAVA program to implement constructor. **d)** Write a JAVA program to implement constructor overloading.	**CO1, CO2, CO3,CO4**
4	**Exercise - 4** **a)** Write a JAVA program to implement Single Inheritance **b)** Write a JAVA program to implement multi level Inheritance **c)** Write a JAVA program for abstract class to find areas of different shapes	**CO1, CO2, CO3,CO4**
5	**Exercise - 5** **a)** Write a JAVA program give example for "super" keyword. **b)** Write a JAVA program to implement Interface. What kind of Inheritance can be achieved? **c)** Write a JAVA program that implements Runtime polymorphism	**CO1, CO2, CO3,CO4**
6	**Exercise – 6** **a)** Write a JAVA program that describes exception handling mechanism **b)** Write a JAVA program Illustrating Multiple catch clauses **c)** Write a JAVA program for creation of JAVA Built-in Exceptions **d)** Write a JAVA program for creation of User Defined Exception	**CO1, CO2, CO3,CO4**
7	**Exercise – 7** **a)** Write a JAVA program that import and use the user defined packages. **b)**Write a JAVA program that import and use the user defined packages with jar file **c)**Write a Java Program to explore the following classes i) Formatter class ii) Random Class iii) Formatting for Date/Time in Java	**CO1, CO2, CO3,CO4**
8	**Exercise – 8** **a)** Write a JAVA program that creates threads by extending Thread class.First thread display "Good Morning "every 1 sec, the second thread displays "Hello "every 2 seconds and the third display "Welcome" every 3 seconds,(Repeat the same by implementing Runnable) illustrating **b)** Write a program **is Alive** and **join ()** **c)** Write a Program illustrating Daemon Threads.	**CO1, CO2, CO3,CO4**
9	**Exercise – 9** **a)** Implement the programs using ArrayList class **b)** Implement the programs using HashSet class **c)** Implement the programs using PriorityQueue class	**CO1, CO2, CO3,CO4**

Learning Resources
Text Books
1) JAVA one step ahead, Anitha Seth, B.L.Juneja, Oxford.
2) Joy with JAVA, Fundamentals of Object Oriented Programming, Debasis Samanta, Monalisa Sarma, 2023, Cambridge.
Reference Books
1) The complete Reference Java, Herbert Schildt, 11thedition, TMH.
2) Introduction to Java programming, Y Daniel Liang, 7th Edition ,Pearson.
E-Resources & other digital material
1) https://nptel.ac.in/courses/106/105/106105191/
2) https://infyspringboard.onwingspan.com/web/en/app/toc/lex_auth_012880464547618816347_shared/overview