**JAVA**

**Packages**

**Lab Exercise No:**29

**Exercise Objective(s):***Package*

**Exercise:***Create a package called shapes. Create some classes in the package representing some*

*common geometric shapes like Square, Triangle, Circle and so on. Create a class called*

*TestShapes and create objects for all the shapes and print corresponding messages.*

*Execute the TestShapes class.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *NA*

**Lab Exercise No:**30

**Exercise Objective(s):***Jar*

**Exercise:**

1. *Create a new project in which create a package named org.animals. In that create various classes like Lion, Tiger, Deer, Monkey, Elephant and Giraffe. In each class create data members like color, weight,age etc. Create methods like isVegetarian, canClimb, sound etc*
2. *Create another project and in that create a package called zoo and create a class called VandalurZooand create objects for the animals that are existing in zoo and print the characteristic of each animal.*

**Recommended duration:***15Mins*

**Solution Guidance (if applicable):***Export the jar and add it as an External Archive.*

**Lab Exercise No:**31

**Exercise Objective(s):***System class*

**Exercise:***Create a class which displays the following about the JVM.*

1. *Version of Java*
2. *Vendor for Java*
3. *Class Path*
4. *Installed home directory*
5. *OS name on which it is installed with version*

**Recommended duration:***10Mins*

**Solution Guidance (if applicable):** *NA*

**Lab Exercise No:**32

**Exercise Objective(s):***Scanner class*

**Exercise:***Create a class called Student. Get the details like name, degree, age, total marks and*

*percentage from the user and display the same.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *NA*

**Lab Exercise No:**33

**Exercise Objective(s):***Systemclass,usingstaticimport*

**Exercise:***Create a Package called house. Create 2 classes namely Hall and Kitchen.*

1. *In the Hall class print the message “This is the first room while entering the house” without using the class name System explicitly in the println statement.*
2. *In the Kitchen class create an array called appliances and initialize with values and print the same.*
3. *After printing copy that array into a different array.*
4. *Invoke garbage collector explicitly for the Kitchen class.*

**Recommended duration:***20Mins*

**Solution Guidance (if applicable):** *NA*

**JAVA**

**Exception Handling**

**Lab Exercise No:**50

**Exercise Objective(s):***syntax*

**Exercise:***In the Lab Exercise 14, change the code such that the numbers are taken as input from the*

*user. Handle the appropriate exceptions.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):***InputMismatchException, Arithmetic Exception*

**Lab Exercise No:**51

**Exercise Objective(s):***syntax*

**Exercise:***In the Lab Exercise 17, handle the scenarios if the String variable is not initialized.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *Null Pointer Exception*

**Lab Exercise No:**52

**Exercise Objective(s):***syntax*

**Exercise:***Using Lab Exercise 17, catch and demonstratethe required exceptions.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):***StringIndexOutOfBoundsException*

**Lab Exercise No:**53

**Exercise Objective(s):***syntax*

**Exercise:***Using Lab Exercise 22, catch and demonstrate the required exceptions.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):***ArrayIndexOutOfBoundsException*

**Lab Exercise No:**54

**Exercise Objective(s):***Exception class methods*

**Exercise:***By using multiple catch blocks, write a class to demonstrate the order of the execution of the*

*catch blocks usingNegativeArraySizeException,ArrayIndexOutOfBoundsException,*

*StringIndexOutOfBoundsException, IndexOutOfBoundsException, NullPointerException,*

*ArithmeticException and print the stack trace for each exception.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):***NA*

**Lab Exercise No:**55

**Exercise Objective(s):***User-defined exceptions*

**Exercise:***In the Lab Exercise 46, handle the expected exceptions by writing custom defined exceptions.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *NA*

**Lab Exercise No:**56

**Exercise Objective(s):***finally keyword*

**Exercise:***Create a class such that it resets the value of the objects it used to null after its usage in all*

*cases.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *Use finally block*

**Lab Exercise No:**57

**Exercise Objective(s):***finally keyword*

**Exercise:***Create a class such that a method uses the try catch block with the return type of String.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):** *Use finally block*

**Lab Exercise No:**58

**Exercise Objective(s):***User-defined exceptions*

**Exercise:***Createa class called Employee which asks the user to input the name and the age of a*

*employee. Raise a custom defined exception when the user enters an employee name*

*that has been already entered and raise another exception if the age is negative or less*

*than 18 or greater than 60.*

**Recommended duration:** *20 Mins*

**Solution Guidance (if applicable):***NA*