**CS-103**

**Autumn 2013**

**Tut 7 (Exception Handling)**

Q1. Explain three categories of exceptions. Draw a diagram to show Java Exception classes hierarchy of main subclasses.

Q2. WAP to input integer values in an 1D array for ten elements and find average of positive integer values given and display the result.

1. Catch the following exceptions separately

(a) string inputs (b) negative inputs (b) float values

1. Display the number of times each type of exception was thrown

Q3. WAP to find the slope between ordered pairs of 2D coordinates. Declare a class with appropriate instance variable and methods to find slope = (y2-y1)/(x2-x1) [  e.g. (2,3) and (5,4) is one set of ordered pairs then slope =(4-3)/(5-2)=1/3=0.33 and second set of ordered pair is (2,3) and (4,4) then slope = (4-3)/(4-2)=1/2=0.5. Ist set of ordered pair is having less slope.

Include user defined exception handling required to take care for avoiding (i) slope as infinity (ii) negative slope

Q4. WAP to create your own exceptions by creating your own exception class called **NeedMorepoints** by extending the Exception class. This is required in the following problem:

A mobile game for motor bike race has already been designed for scoring and purchasing the safety gears based on the points scored and rupees earned. Based on the points scored in each consecutive game played, the player gets rewarded in Rupees, which increases/decreases and maintains a balance till the user desires to play as per the following criteria:

1. 1st game, points scored 2000-2500, rewarded Rs. 200
2. 2nd game, points earned 2000-2500, rewarded Rs. 400
3. 3rd game, points earned 2000-2500, deducted Rs. 300; points earned 3000-5000, rewarded Rs. 600
4. Player can buy safety gear(s) to safeguard any crash during the game (a) Helmet for Rs. 500 to recover from single crash (b) Rs. 800 to recover from two crashes

Now depending on your rewarded amount and purchase of each safety gear, exception handling should be implemented in order to prompt you for “rewarded amount is less than the purchase value of safety gear. You are required to play another game with a minimum score ……….. in order to make the desired purchase”.

Q5. WAP to compare the total sales turnover during a financial year of four companies(IT product manufacturers) so that following data could be obtained:

(a) itemwise turnover

(b) region wise turnover

(c) manufacturer wise all India turnover

Declare the following Interfaces with appropriate constants and methods:

(i) ItemsManufactured

(ii) SalesTurnover

Design a class Company with class/instance variables for (i) name of company (ii) year of turnover report.

The class should implement the above interface and also the interface Comparable.

Q6.Take values of arrays from a file and then find the product of the matrices.