F.S. BE - II
Object Oriented Programming through JAVA
Assignments

Assignment 1

1. Write a Java Program to add marks of two subjects. Write the same program using Command line arguments.
2. Write a Java Program to find the factorial of 20.
3. Write a Java Program to find the first 20 Prime Numbers.
4. Write a Java Program to find the generate the first 50 numbers of Fibonacci Series.
5. Write a Java Program to find the factorial of 50. (Use Recursive function)
6. Write a Java Program to generate String data dynamically with an alphabet {'A', 'B', 'C', 'D'}. Use Math.random() to generate alphabets randomly.

Assignment 2

1. Write a Java Program to perform operations on Complex numbers. (Use objects)
2. Write a Java Program to perform operations on Vectors. (i.e. x,y,z co-ordinates.) (Use objects)

Assignment 3

1. Write a Java Program to inherit time class. (i.e. First class has the hour component, Second class has the minutes component & the Third class has a seconds component.) Given 2 objects, find the time lapsed between them. (Generate Documentation for your program.)
2. Write a Java Program to inherit the vehicle class. (Generate Documentation for your program.)
3. Write a Java Program to implement the Living Organisms hierarchy or to implement the Nomenclature system of Chemical Compounds.

Assignment 4

1. Write a Java Program (Use Package) to inherit time class. (i.e. First class has the hours component, Second class has the minutes component & the Third class has a seconds component.) Given 2 objects, find the time lapsed between them.
2. Write a Java Program (Use Package & Interface) to implement the shape class & find the areas & volumes of each of the objects created for the inherited classes.
3. Write a Java Program to implement the Living Organisms hierarchy or to implement the Nomenclature system of Chemical Compounds. Given the name of living organism, all its attributes should be available, dynamically.

Assignment 5

1. Write all the above programs such that they handle all possible Exceptions.
2. Also specify the User-Defined Exceptions wherever useful.

Assignment 6 (Multithreading)

1. Write a Java Program to simulate stacks.
   The push & pop activities of stack should not clash with each other.
2. Write a Java Program to implement the Banking System.
   The bank has 2 windows, 1 for Deposits & the other for Withdrawals.
   It should be possible to perform both the activities simultaneously.
   The same Bank Account should not be allowed to be operated from both the windows, at the same time.
3. Write a Java Program to implement the Mutual Exclusion Algorithms & Semaphores discussed in Process Management topic in OS
4. Write a Java Program to implement the game of snakes & ladder.

Assignment 7

1. Write a Java Program to check the access specifiers. (Use Packages to check default access specifiers)

Assignment 8

1. Write a Java Program to find the total number of occurrences of a substring in the given string array.
   Also display the positions of each occurrence in every string of an array. The program should also display the total occurrence for substring in each string of an array.
2. Write a Java Program to search multiple substrings, in a given string or group of strings. (May use files).
3. Write a Java Program to find the number of days between two dates.
4. Write a Java Program (Use AWT/Swing class components & Event Handling) to enter the data of student name, his class & marks.
   There should be a list item which displays the list of all existing students and two buttons, one which enables the user to save the data entered in entry fields and second which enables the user to delete a record from the list displayed.

5. Generate the Java documentation for your program.

Assignment 9

1. Write a Java Program to implement the game of Ludo. Implement its graphics also.

(More assignments may be given during class discussions and in the semester)