SSN College of Engineering

Department of Computer Science and Engineering

UCS1313 – Object Oriented Programming Using Java Lab

II Year CSE - A Section (III Semester)

Academic Year 2019-20

Exercise 1 a: Basic Java Programs (24,26,27 June 2019)

1. Write a java program to check whether the given number is odd or even.
2. Write a java program to find the factorial of the given number.
3. Write a java program to find the sum of first 'n' natural numbers.
4. Write a java program to find whether the given number is Armstrong number or not.
5. Write a java program to create a class named 'Student' with name, id, dept, 3 marks as data members. Write function to assign the inputs, calculate grade, display and search.

Exercise 1 b: Java Programs- Classes and Arrays (1,3,4 July 2019)

1. Write a java program to get 'n' elements in an array. Perform the linear and binary search.
2. Write a java program to find matrix addition, subtraction and multiplication.
3. Develop a Java application to generate Electricity bill. Create a class with the following members: Consumer no., consumer name, previous month reading, current month reading, type of EB connection (i.e domestic or commercial). Compute the bill amount using the following tariff.

   If the type of the EB connection is domestic, calculate the amount to be paid as follows:

   - First 100 units - Rs. 1 per unit
   - 101-200 units - Rs. 2.50 per unit
   - 201 -500 units - Rs. 4 per unit
   - 501 units - Rs. 6 per unit

If the type of the EB connection is commercial, calculate the amount to be paid as follows:

- First 100 units - Rs. 2 per unit
- 101-200 units - Rs. 4.50 per unit
- 201 -500 units - Rs. 6 per unit
- 501 units - Rs. 7 per unit

4. Write a java program to create a class named 'Student' with name, id, dept, 3 marks as data members. Write function to assign the inputs, calculate grade, display and search. Perform these operations for 'n' number of students. [Search using id and dept – use method overloading]

5. Write a java program to create a class named 'Employee' with name, id, designation, years-of-experience, basicpay, DA, HRA, LIC, PF and no. of hours worked. Write functions to calculate the gross pay and net pay.

- If the designation is "Intern" then the salary can be calculated based on working hours.
  Gross salary = no.of hours worked * hourly wage + DA as 2000 + HRA as 1000
  Deductions=LIC premium amount (if employee opted for that) + PF as 500
  Net salary= Gross salary – Deductions

- If the designation is "Manager" then
  Gross salary = Basicpay + DA as 40% of basicpay + HRA as 10% of basicpay
  Deductions=LIC premium amount (if employee opted for that) + PF as 8% of basicpay
  Net salary= Gross salary – Deductions

- If the designation is "others – Trainee, Analyst, Software engineer, TeamLead" then
  Gross salary = Basicpay + DA as 30% of basicpay + HRA as 10% of basicpay
  Deductions=LIC premium amount (if employee opted for that) + PF as 8% of basicpay
  Net salary= Gross salary – Deductions

- Calculate the Payroll for 'n' employees and display the salary details for all employees.
- Prepare the payslip for a particular employee.
- Promote a particular employee based on the years of experience.