Assignment : 1

1. Write a program to display Greetings in three lines.

2. Write a program to display your Introduction in three lines.

3. Write a program to find sum and average of two numbers input by User (using Scanner class).

4. Write a program to calculate Simple Interest input by user. Simple Interest = P*T*R/100

5. Write a program to find the area of circle, rectangle, and triangle.

6. Write a program to find the perimeter of circle, triangle, and rectangle.

7. Write a program that read the radius and length of a cylinder and computes volume.

8. Write a program to convert Fahrenheit to Celsius and Celsius to Fahrenheit.

9. Write a program that converts pounds into kg. The program prompts the user to enter number of pounds, converts it to kg and displays the result [1 pound is 0.454 kg].

10. Write a Program for the following Mathematical Function.

a.

b.

c.

11. Write a program to swap two numbers

a) using temp variable

b) without temp variable

12. Write a program to accept the roll, name, and nationality of the person and display those values in good format way.

13. Write a program to print the number entered by user only if the number entered is negative.

14. Write a program to relate two integers entered by user using = =or > or < sign.

15. Write a program that receives an ASCII code (between 0 – 128) and display its character [example: 97 (input) ->a(output)].

16. Write a program to find the given number is even or odd.

17. Write a program to calculate leap year.

18. Write a program to display largest number from given three values.

19. Write a Program to accept three sides of triangle and display which kind of triangle is formed.

20. Write a program to create the equivalent of a four-function calculator. The program to enter two integer's numbers and an operator. It then carries out the specified arithmetic operator operation: addition, subtraction, multiplication or division of the two numbers. Finally, it displays the result.

21. Program to input the number of (1...7) and translate to its equivalent name of the day of the week.

22. Write a program to print the table of given number.

23. Write a Program to sum 1 to nth natural numbers.

24. Write a program to print the factorial number of given number.

Assignment-2

Task 1:

Assignment Specification

Create an ATM System that will perform following operations:

- Balance Inquiry
- Withdrawl
- Deposit

The system contains the following classes

- Account: Stores the information of account_number,pin, available_balance, total_balance.
- Bank Database: represents in-memory database that contains the objects of Account class representing each person's account.
- ATM: displays the switch-case menu for performing Balance inquiry, Wtihdrawl and deposit
- Screen: contains the methods to display the messages.
- Transaction: Contains the fields and methods for performing BalanceInquiry, Withdrawl, and Deposit operations.

Task 2:

Assignment Specification

Create a model class Electricity. Electricity class has

- a unit,
- an amount,

Generate a getter and setter methods:

Create another class CalculateElectricity.

Ask user to supply electricity unit then create the switch case on the basics of following condition.

1 to 20 unit = Rs 100

21 to 25 unit = Rs 5 per unit

25 to 50 unit = Rs 10 per unit

Above 50 unit Rs 2000 flat

Create the method calculateAmount() that takes electricity object as a parameter then return the total amount to be paid.

Assignment-3

PART 1

Requirement 1

The program must have the ability to prompt the user for input of `title`, `author`, `price`, `publisher`, and `ISBN` for each book and accept the command “endinput” when the user no longer wishes to type more data.

The program should store the data (i.e. it is not just echoing the typed in data back to the console) and at the end of data input output the entire library catalogue to the console in the specified format (see below). The following is an example of the typical output to be displayed.

```
Title             Author            Price      Publisher   ISBN
====              =====             =====      =======     =====
OOP programming   Graham Winter     £32.50     OReilly     0471974555
QoS               Geoff Ferguson    £12.99     Wiley       1991974123
Java First        Anthony Jones     £8.00      Pearson     4321567321
```

For the purpose of this assignment, you can assume that the maximum number of books in the catalogue is 100.

Requirement 2

The second requirement for part1 involves aggregating the values from the input and producing a simple report to the console once the user finished inputting data. The report should identify the following information –

- The total number of books.
- The total cost of books.
- The maximum cost of a book
- The minimum cost of a book
- The average cost of a book

The output should be in the following format –

```
Totals
-------------------------
Total number of books: 3
Total cost of books: £53.49
Maximum cost of a book: £32.50
Minimum cost of a book: £8.00
Average cost of a book: £17.83
```

PART 2

Requirement 3

The program should be extend to support an option which allows the catalogue data to be read from a file. Each line in the file contains the data for a specific book. The format of each line within the file is as follows:

```
Title - author – price – publisher - ISBN
```

The following is an example of the typical line of data within the file.

```
OOP programming - Graham Winter - 32.50 – Oreilly - 0471974555
```

The program should output the data to the console as specified in requirement 1.

Requirement 4

The data within a line of the data could be corrupted. Hence, the program must check each line of data, identify invalid data and report these to the user via messages on the console. At a minimum, the program should check and validate the following possible issues–

- The book title may be missing.
- The book author may be missing.
- The book price may be missing.
- The book publisher may be missing.
- The book ISBN may be missing.
- The field delimiter may be missing or wrong field delimiter is used.
- The book price may not be a numeric value.
- The book ISBN may not be a numeric value.

The program should output the totals and total number of valid & invalid books to the console.

The output should be in the following format –

```
Totals
-------------------------
Total number of books: 3
Total cost of books: £53.49
Maximum cost of a book: £32.50
Minimum cost of a book: £8.00
Average cost of a book: £17.83
Total number of valid books: 3
Total number of invalid books: 2
```