ASSIGNMENT-01

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COURSE CODE: CSA0914

COURSE NAME: Programming in Java for Rasberry Pi

Submitted To:-

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1) **Aim** :- To write a java Program to calculate student grades based on their scores.

Pseudocode :-

* Initilize the variables. Ask the user to enter the students score.
* Store the entered score in variables score.
* If the score is 90 higher grade is "A". If score is 80 highers but less than 90. the grade is "B". If score is 70 or higher but less than 80, the grade is "C". If score is 60 or highers but less than 70, the grade is "D". If the score is 60 the grade is "F".
* Store the determined grade in variable grade.
* Display the calculated grade.

Program :-

```
import java.util.scanners;
Public class student grading System {
    Public static void main (string[] args) {
        Scanner Scanner = new scanners (~~nextint~~(in);
        char choice;
        do {
            system.out.Println ("Enter Students score:");
            int score = Scanner.nextin();
            string grade;
            if (score >=90)
            {
                grade = "A";
            }
            else if (score >=80)
            {
                grade = "B";
            }
            else if (score >=70)
            {
                grade = "C";
            }
```

```
        else if (score >= 60)
        {
          grade = "D";
        }
        else
        {
          grade = "F";
        }
        System.out.println("grade:" + grade);
        System.out.println("Do you want to enter another score : ");
        choice = Scanner.next().charAt(0);
        } while (choice == 'Y' || choice == 'y');
          Scanner.close()
        }
    }
```

Output :-

```
Enter Student's Score : 85
Grade : B
Do you want to enter another score ? (Y/n) : Y
Enter Student's Score : 92
Grade : A
```

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2) **Aim :-** To write a java Program to randomly select a number between 1 and 10 and Player has to guess it.

Pseudocode :-

* Intitilize the variables.
* Choose a random number between 1 and 10 and store this number in a secret variable.
* Set a counter to 0 to keep track of the no. of attempts.
* While the no. of attemps is less than 3.
* Ask the player to guess a number between 1 and 10.
* If guss. was correct display Congratulations.
* Otherwise Print not correct till 3 attempts.

Program :-

```
import java.util.Random;
import java.util.Scanner;
Public class numberguessing game{
  Public Static void main(String[]args){
    Scanner scanner =new Scanner(system.in);
    Random random = new Random();
    boolean Playagain = true;
    While(Playagain){
      int random number = random.nxt int(10)+1;
      int attempts = 3;
      for (int i=0;i<attempts;i++)
      {
        System.out.Println("guess a number between 1to10:");
        int attempts = 3;
        for (int i=0;i<attempts:;++)
        {
          System.out.Println("gusses a number between 1 to10:");
          int gusses = Scanner.nextint();
          if(gusses==random numbers){
            System.out.Println("Too low");
            }
          else{
            System.out.Println("Too High");
            }
        }
          if(attempts==3){
            System.out.Println("Sorry, You ran out of attempts. The numbers
            was"+ randomnumbers);
          }
          System.out.Println("Do you want to Play again ?(Y/n):");
          string answers = Scanner.next();
          Play again = answers.equalsignore case("Y");
        }
        Scanner.Close();
    }
}
```

OutPut :-

Given a number between 1 to 10.
Attempt 1: 5
too low.
Attempt 2 : 7
too high.
Attempt 3 : 6
Correct ! You guessed it in 3 attempts.

3) Aim :- To write a Java Program to generate and display the multiplication table for any no. of entered by the user.

Pseudocode :-

* Initilize the variables.
* Ask the users to enter a number and store it in 'num' variable.
* Print the message indicating to generate the multiplication table of a given number.
* Start a for that run 10 times.
* Calculate the Product of a given number and the current iteration number.
* Print the result.

Program :-

```
import java.util.Scanner;
Public Class A13q{
  Scanner scanner =new Scanner (System.in);
  System.out.Println ("Enter a number: ");
  int num = Scanner.nextInt();
  System.out.Println("Multiplication Table for "+num+ ":");
  for(int i=1; i<=10; i++){
    System.out.Println(num+ "x "+ i+ " ="+(num*i));
    3
  3
3
```

Output :-

4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40

Input :-

Enter a number : 4

4) Aim :- To write a java Program for Counting the even and odd numbers.

Pseudocode :-

* Initilize the variables.
* Ask the use to enter the no. of integers.
* Set two counters to zero for even and odd numbers.
* Start a for loop will run "num integers' times and ask to enter the numbers.
* If the number is divided by 2 with no remainder increement evenCount by 1 ; else increment odd count by 1.
* Print the result of even and odd count.

Program :-

```
import java.util.Scanner;
Public Class A1q2 {
  Public static void main (String[]args) {
    Scanner scanner = new Scanner (System.in);
    System.out.Println ("Enter the number of integers:");
    int numintegers = scanner.nextInt();
    int evencount = 0;
    int oddcount = 0;
    System.out.Println ("Enter the integers:");
    for (int i=0; i<numintegers; i++) {
    int num = scanner.nextInt();
    if (num %2 ==0) {
      evencount++;
    } else {
      oddcount++;
    }
  }
  System.out.Println ("Even numbers:" + evencount);
  System.out.Println ("odd numbers :" + oddcount);
  }
}
```

OutPut :-

Enter the integers:

1 2 3 4 5

Even numbers: 2

Odd numbers : 3

InPut :-

Enter the no of integers: 5

5) **Aim:-** To write a java Program for Simple ATM Simulation

PseudoCode:-

* Initialize the variables.
* Display a menu to the user with the following options Check Balance, deposit money, withdraw money, exit.
* Ask the user to choosen an option from the menu.
* If the user choose to check Balance: display the current Balance
* withdraw money, ask the user to enter money to withdraw, Check if it is sufficient to cover withdrawn amount and subtract current balance from the amount
* Exit the loop.
* Display the result.

Program:-

```
import java.util.Scanner;
Public Class ATM{
  Public static void main (String[] args) {
    Scanner scanner = new Scanner (System.in);
    double balance = 1000;
    while (true) {
      System.out.println ("Select an option:");
      System.out.println ("1. Bank balance");
      System.out.println ("2. Deposit money");
      System.out.println ("3. withdraw Money");
      System.out.println ("4. Exit");
      int option = Scanner.nextline();
      if (option == 1)
      {
       system.out.println ("Balance: $" + balance);
    } else if (option == 2) {
      System.out.println ("Enter amount to deposit:");
```

```
double deposit = scanner.nextDouble();
balance += deposit;
System.out.println("deposit successful. New balance: $" + balance);
} else if (option == 3) {
  System.out.println("Enter Amount to withdraw: ");
  double withdrawal = scanner.nextDouble();
  if (withdrawal > balance) {
    System.out.println("Insufficient funds.");
    } else {
      balance -= withdrawal;
      System.out.println("Withdrawal successfully new balance: $" + balance);
      } else {
        System.out.println("Invalid option");
      }
    }
  }
}
```

Input:- Enter the amount to deposit: 6000
Enter the amount to withdraw: 7000

Output:-

Welcome to the ATM System!
Choose an option:
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit.

1.
Your current Balance is: $1000.0

2.
Deposit Successful. Your new balance is: $7000.0

3.
Withdrawal Successful. Your new balance is: $ 0.0

4.
Exit.