

Assignment 1

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- ① AIM:- To design a Java program that takes a student's score as input and outputs the corresponding grade using an if-else control structure.

Pseudocode:-

- Initialize the variables
- Take student's score as input
- Determine grade using if-else control structure
- Output the corresponding grade
- Ask if the teacher wants to continue entering scores

Program:-

```
import java.util.Scanner;  
public class StudentGradingSystem {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        String continueInput;  
        do {  
            System.out.print("Enter Student's Score: ");  
            int score = scanner.nextInt();  
            char 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);  
            continueInput = scanner.next();  
            if (!continueInput.equals("y")) {  
                break;  
            }  
        } while (true);  
    }  
}
```

```

    } else if(score >= 70) {
        grade = 'C';
    } else if(score >= 60) {
        grade = 'D';
    } else {
        grade = 'F';
    }
    System.out.println("Grade: " + grade);
    System.out.print("Do you want to enter another score? (yes/no): ");
    continueInput = scanner.next();
    } while (continueInput.equalsIgnoreCase("yes"));

    System.out.println("Exiting the program. Have a great day!");
    scanner.close();
}
}

```

Output:-

Enter student's score : 85

Grade: B.

Do you want to enter another score ? (yes/no) : 6.

Enter student's score : 92.

Grade: A

(2)

AIM: Implement a java program that generates a random number b/w 1 and 10;

Pseudocode:-

- Initialize 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 tenis of attempts.
- while the no. of attempts is less than 3
- ask the player to guess a number b/w 1 and 10.
- If guess 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);
        boolean playagain = true;
        while (playagain) {
            int randomnumber = random . nextInt (10) + 1;
            int attempts = 3;
            for (int i = 0; i < attempts; i++) {
                System.out.print ("guess a number b/w 1 to 10");
                int attempts = 3;
                for (int i = 0; i < attempts; i++) {
                    {
                }
            }
        }
    }
}

```

```
System.out.println("guess a number between 1 to 100");
int guess = scanner.nextInt();
if(guess == randomnumber) {
    System.out.println("Correct");
} else {
    System.out.println("too low");
} else {
    System.out.println("too high");
}
if(attempts == 3) {
    System.out.println("Sorry, you run out of attempts remaining");
    + randomnumber);
}
```

3.

```
System.out.println("Do you want to play again? (Y/N):");
String answer = scanner.next();
```

```
if(answer.equalsIgnoreCase("Y")) {
    playAgain = true;
} else {
    playAgain = false;
}
```

Scanner close();

}

Output:-

Give a number between 1 to 100.

Attempts 1: 5.

too low

Attempts 2: 2.

too high.

③ **Aim** - To write a Java program to generate and identify, and display the multiplication table for any no. of entered by user.

Pseudocode

- Initialize the variables.
- Ask the user to enter a number and store it in num variable.
- Print a message indicating to generate the multiplication table of a given number.
- Start a for loop that you defined.
- print the result.

Program

```
import java.util.Scanner;  
public class Aim {  
    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));  
    }  
}
```

Input

Output

Enter num: 4

$$\begin{array}{llll} 4 \times 1 = 4 & 4 \times 4 = 16 & 4 \times 7 = 28 & 4 \times 10 = 40 \\ 4 \times 2 = 8 & 4 \times 5 = 20 & 4 \times 8 = 32 & \\ 4 \times 3 = 12 & 4 \times 6 = 24 & 4 \times 9 = 36 & \end{array}$$

④ Aim:- To write a java program for counting the even and odd numbers.

Pseudocode:-

- Initialize the variables.
- ASK user to enter the no of integers.
- Set two counts together for even and odd numbers.
- Start a for loop will ask "num" integer times and ask .enter numbers.
- print the result of even and odd & counts.

Program:-

```
import java.util.Scanner;  
public class A14 {  
    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
```

Output:-

```
Enter the integers: 1 2 3 4 5
```

(3) 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 money, withdraw, deposit, exit.
- Ask the user to choose an integer from the menu.
- If the user choose to Balance display the current balance.
- 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 options = scanner.nextInt ();
            if (options == 1) {
                System.out.print ("Balance: ");
                System.out.println ("Balance: " + balance);
```

{else if (conton == 2) {

System.out.println("Enter amount to deposit");

double deposit = scanner.nextDouble();

balance = deposit;

System.out.println("deposit successful new balance is " + balance);

} else if (conton == 3) {

System.out.println("Enter Amount to withdraw");

double withdraw = scanner.nextDouble();

if (withdraw > balance) {

} else {

balance -= withdraw;

System.out.println("Withdraw successfully new balance is " + balance);

} else {

System.out.println("invalid option");

}

}

}

Input: Enter amount to deposit: 6000

Enter amount to withdraw: 4000

Output:-

1. Your current balance : is \$10000.

2. Deposit successful your new balance is \$16000.

3. Withdraw successful your new balance is \$12000.

4. Exit.