

CSA0914 -

Java Programming for
Raspberry Pi

ASSIGNMENT-I

A. Sarvani Kauyaka

192211795

CSA0914 - Java Programming for Raspberry Pi
 Assignment-1 A. Sarvani Kanyaka

Aim :-

- ① To Design a Java program that takes a student's score as inputs and outputs the corresponding grade using if-else control structure

Pseudo code:-

- Step-1:- Initialize the Variables
- Step-2:- Start loop
- Step-3:- Input score
- Step-4:- Determine grade
- Step-5:- Output grade
- Step-6:- End loop
- Step-7:- End program

Code:-

```

import java.util.Scanner;
public class student grading system {
    public static void main (String [] args) {
        Scanner sc = new Scanner (System.in);
        char Continue Input;
        do {
            System.out.print ("enter the students
                score:");
            int score = scanner.nextInt();
        }
    }
}

```

Aim:
To implement a Java program
that generates a Teacher to give the
marks to guess the marks
Use a for loop to give the marks
Attempts to guess the marks
Pseudo code:
Step 1
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("Grading process  
completed");  
Scanner.close();
```

output Input
Input: 85 → student's score
excepted output: Grade B
↓
Grading Process completed

②

Aim:- To implement a Java program that generates a random no b/w 1 and 10 use a for loop to give the player three attempts to guess the number

Pseudo code:-

Step-1 generate random number between 1 and 10 declare attempts = 3

Step-2 For each attempt from 1 to 10
read player guess

Step-3 if player guess equals to random number then
print correct

Step-4 else if PG < RN then
print too low

Step-5 else
print too high

Step-6 if attempts equals to 3
print your attempts over

Step-7 end

Code :-

```
import java.util.Random;
import java.util.Scanner;

public class NumberguessingGame {
    public static void main(String[] args) {
        int random_number = new Random().nextInt(10) + 1;
        Scanner sc = new Scanner(System.in);
        for (int attempts = 1; attempts <= 3; attempts++) {
            System.out.print("Guess the number  
 (1-10): ");
            int guess = scanner.nextInt();
            if (guess == random_number) {
                System.out.println("Correct! guessed in " +
                    attempts + " attempts");
                break;
            } else if (guess < random_number) {
                System.out.println("Too low");
            } else {
                System.out.println("Too high");
            }
        }
        scanner.close();
    }
}
```

Output

Random number - 7

Player inputs - 5, 8, 7

@ "Too low", "Too high" correct!

② Aim:- To create a java program that takes a number as input and uses a for loop to generate & print multiplication table for that number

Pseudo code:-

Step-1:- Create scanner object for input

Step-2:- print start range

Step-3:- print end range

Step-4:- For i from start to end Do

Step-5:- print number + "x" + i + "="
 + (number * i)

Code:-

```
import java.util.Scanner;
```

```
public class multiplicationtable{
```

```
    public static void main(String[] args){
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter the number for  
                     the multiplication table:");
```

```
        int number = scanner.nextInt();
```

```
System.out.println("enter the start of  
the range: ");  
int start = scanner.nextInt();  
System.out.println("enter the end of  
the range: ");  
int end = scanner.nextInt();  
for(int i = start; i <= end; i++) {  
    System.out.print(number + "x"  
        + i + " = " + (number * i));  
}
```

Scanners.close();

}

}

Output

number - 1

start - 1

end - 15

$$5 \times 1 = 5$$

$$5 \times 2 = 10$$

- -

$$5 \times 15 = 75$$

④

Aim :- To develop a program that takes an array of integers as input and uses a for loop to count how many even and odd numbers are in array

Pseudo code:-

Step-1: Create scanner object for input

Step-2: Declare array of integers with size n

Step-3: For i from 0 to n-1 DO
 read array[i]

Step-4: Initialize evenCount=0, oddCount=0
 Initialize evenSum=0, oddSum=0

Step-5: For each number in array Do
 if number is even then
 increment evenCount
 add number to evenSum

Step-6: else
 increment oddCount
 add number to oddSum

Step-7: end if

Code :-

```
public class EvenOddCounter{  
    public static void main(String[] args){  
        int[] numbers = {2, 3, 4, 5, 6};  
        int evenCount = 0; oddCount = 0;  
        int evenSum = 0; oddSum = 0;  
        for (int num : numbers) {  
            if (num % 2 == 0) {  
                evenCount++;  
                evenSum += num;  
            } else {  
                oddCount++;  
                oddSum += num;  
            }  
        }  
        System.out.println("Even count: " + evenCount);  
        System.out.println("Odd count: " + oddCount);  
        System.out.println("Sum of even numbers: " + evenSum);  
        System.out.println("Sum of odd numbers: " + oddSum);  
    }  
}
```

Output:-

Input = {2, 3, 4, 5, 6}

Even count = 3
Odd count = 2

Sum of even numbers and odd = 12 and 8

⑤

Aim:- To write a java program that represents a menu that user using a switch statement perform the appropriate action: check balance, deposit money (or) withdraw money

Pseudo code:-

Step-1:- Set balance = 1000
Set exit = false

Step-2:- While exit is false do

Step-3:- Switch choice Do
Case-1:

Step-4:- Display current balance

Step-5:- Case-2:-

enter deposit money

Step-6:- Case-3:-
enter withdrawl number

Step-7:- Case-4:-

Thankyou for your time
{ using our service

Step-8:- End switch

Code :-

```
import java.util.Scanner;
public class simpleATM
```

```
public static void main(String[] args) {
```

```
Scanner sc = new Scanner(System.in);
```

```
int balance = 1000;
```

```
int choice;
```

```
do
```

```
System.out.println("In ATM menu:");
```

```
System.out.println("1. Check balance");
```

```
System.out.println("2. Deposit money");
```

```
System.out.println("3. Withdraw money");
```

```
System.out.println("4. exit");
```

```
choice = Scanner.nextInt();
```

```
switch(choice) {
```

```
case 1:
```

```
System.out.println("current Balance: $" + balance);
break;
```

```
case 2:
```

```
System.out.println("enter deposit money($"));
break;
```

```
case 4:
```

```
System.out.print("exit");
```

```
scanner.close();
```

Output

Initial balance: \$1000
User action: deposit
Balance: \$1050//
withdraw \$200
Balance: \$150