

## Assignment - 2

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//Q1: Write a program to check whether a given number is positive, negative or zero.

//Program: public class a2q1 {  
    public static void main(String args[]) {  
        int num = -15;  
        if (num > 0) {  
            System.out.println("num is positive.");  
        }  
        else if (num < 0)  
            System.out.println("num is negative.");  
        else  
            System.out.println("num is zero.");  
    }  
}

//Output

-15 is Negative.

//Q2: Write a program to check even or odd.

//Program: public class a2q2 {  
    public static void main (String args[]) {  
        int num = 42;  
        if (num % 2 == 0) {  
            System.out.println(num + " is an even number.");  
        }  
        else  
            System.out.println(num + " is an odd number.");  
    }  
}

//Output:

42 is an even number

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11Q3: Write a program to find the smallest of five numbers.

//Program: public class a2q3{

```
    public static void main (String args[]) {
        int num1=15, num2=8, num3=22, num4=3, num5=12;
        int smallest=num1;

        if (num2 < smallest)
            smallest = num2;
        if (num3 < smallest)
            smallest = num3;
        if (num4 < smallest)
            smallest = num4;
        if (num5 < smallest)
            smallest = num5;
        System.out.println ("Smallest number: " + smallest);
    }
}
```

//Output:

Smallest number: 3

11Q4: Write a java program to check whether a given year is a leap year or not.

//Program: public class a2q4{

```
    public static void main (String args[]) {
        int year = 2028;
        if (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))
        {
            System.out.println ("Year is a leap year");
        }
        else
            System.out.println ("Year is not a leap year");
    }
}
```

//Output: 2028 is a leap year

11Q5: Write a program to accept a student's marks and print "pass" if marks  $\geq 40$  otherwise print "fail".

11Program:

```
public class a295 {
    public static void main(String args[]) {
        int marks = 45;
        if (marks >= 40) {
            System.out.println("pass");
        } else {
            System.out.println("fail");
        }
    }
}
```

11Output:

Pass

11Q6: Write a java program to print the day of the week using a switch statement (1 for Monday... 7 for Sunday).

11Program:

```
public class a296 {
    public static void main(String args[]) {
        int day = 3;
        switch (day) {
            case 1: System.out.println("Monday");
            break;
            case 2: System.out.println("Tuesday");
            break;
            case 3: System.out.println("Wednesday");
            break;
            case 4: System.out.println("Thursday");
            break;
            case 5: System.out.println("Friday");
            break;
            case 6: System.out.println("Saturday");
            break;
            case 7: System.out.println("Sunday");
            break;
            default: System.out.println("invalid day");
        }
    }
}
```

//QUTPUT: Wednesday

//Q7: Write a program to create a calculator using a switch statement to perform addition, subtraction, multiplication, division.

```

//Program: public class a297 {
    public static void main (String args[]) {
        float a=10, b=5;
        char op = '+';
        float res=0;

        switch (op) {
            case '+': res = a+b;
            break;
            case '-': res = a-b;
            break;
            case '*': res = a*b;
            break;
            case '/': res = (b==0)? a/b : 0;
            break;
            default: System.out.println("invalid");
        }
        System.out.println("Result: " + res);
    }
}
  
```

//Output:

Result: 50.0

//Q8: Write a java program to display remarks based on grade using a switch statement.  
 A → Excellent, B → Good, C → Average, D → Pass, F → Fail).

```

//Program: public class a298 {
    public static void main (String args[]) {
        char grade = 'A';
    }
}
  
```

```

switch (grade) {
    case 'A': System.out.println ("Grade:A - Excellent");
        break;
    case 'B': System.out.println ("Grade:B - Good");
        break;
    case 'C': System.out.println ("Grade:C - Average");
        break;
    case 'D': System.out.println ("Grade:D - Pass");
        break;
    case 'F': System.out.println ("Grade:F - Fail");
        break;
    default:
        System.out.println ("Invalid grade");
}
}

```

//Output: Grade:A - Excellent

//Q9: Write a program to print the month name and number of days using switch statement (1 for January...12 for December).

```

//Program: public class a2q9 {
    public static void main (String args[]) {
        int month = 2;
        switch (month) {
            case 1: System.out.println ("January - 31 days");
                break;
            case 2: System.out.println ("February - 28/29 days");
                break;
            case 3: System.out.println ("March - 31 days");
                break;
            case 4: System.out.println ("April - 30 days");
                break;
            case 5: System.out.println ("May - 31 days");
                break;
            case 6: System.out.println ("June - 30 days");
                break;
        }
    }
}

```

```

case 7: System.out.println ("July - 31 days");
        break;
case 8: System.out.println ("August - 30 days");
        break;
case 9: System.out.println ("September - 30 days");
        break;
case 10: System.out.println ("October - 31 days");
        break;
case 11: System.out.println ("November - 30 days");
        break;
case 12: System.out.println ("December - 31 day");
        break;
default:
        System.out.println ("Invalid month");
    }
}

```

//output:

February - 28/29 days

//Q10: Write a program to check whether an alphabet  
is a vowel or a consonant using switch.

```

//Program: public class a2q10{
    public static void main (String args) {
        char ch = 'a';
        switch(ch){
            case 'a':
            case 'E':
            case 'I':
            case 'O':
            case 'U':
                System.out.println (ch + " is a vowel");
                break;
            default:
                System.out.println (ch + " is a consonant");
        }
    }
}

```

//output: a is a vowel.

//Q11: Write a program to calculate the electricity bill based on units consumed:

//Program: public class a2911{  
 public static void main (String args[]){  
 int units = 150;  
 float bill = 0;  
 if (units <= 100) {  
 bill = units \* 5;  
 }  
 else if (units <= 200) {  
 bill = (100 \* 5) + ((units - 100) \* 7);  
 }  
 else {  
 bill = (100 \* 5) + (100 \* 7) + ((units - 200) \* 10);  
 }  
 System.out.println ("Units : " + units);  
 System.out.println ("Bill : " + bill);  
 }  
}

//Output:  
 Units : 150  
 Bill : 850.0

//Q12: Write a program to check if a triangle is equilateral, isosceles, or scalene based on three sides.

//Program: public class a2912{  
 public static void main (String args[]){  
 int side1 = 5, side2 = 5, side3 = 5;  
 if (side1 == side2 & side2 == side3) {  
 System.out.println ("Equilateral");  
 } else if (side1 == side2 || side2 == side3 || side1 == side3) {  
 System.out.println ("Isosceles");  
 } else {  
 System.out.println ("Scalene Triangle");  
 }  
 }  
}

//Output: Equilateral.

//Q13: Write a java program to find the absolute value of a given number.

```
//Program: public class a2q13 {
    public static void main(String args[]) {
        int num = -25;
        int abs = num;
        if (num < 0) {
            abs = -num;
        }
    }
}
```

//Output:  
Original number: -25  
Absolute value: 25

//Q14: Write a program to check whether a person is eligible to vote or not based on age:

```
//Program: public class a2q14 {
    public static void main(String args[]) {
        int age = 22;
        if (age >= 18) {
            System.out.println("Person is eligible to vote");
        } else {
            System.out.println("Person is not eligible to vote");
        }
    }
}
```

//Output:  
Person is eligible to vote

// Q15: Write a java program to convert temperatures:

// 1 → celsius to Fahrenheit

// 2 → Fahrenheit to Celsius

// 3 → Celsius to Kelvin.

// Program: public class A2915 {

    public static void main (String args[]) {

        int choice = 2;

        double temp = 98.6, result = 0;

        switch (choice) {

            case 1: result = (temp \* 9/5) + 32;

                System.out.println ("Celsius to Fahrenheit: " + result);

                break;

            case 2: result = (temp - 32) \* 5/9;

                System.out.println ("Fahrenheit to Celsius: " + result);

                break;

            case 3: result = temp + 273.15;

                System.out.println ("Celsius to Kelvin: " + result);

                break;

        default: System.out.println ("Invalid choice");

    }

}

}

// Output:

Fahrenheit to Celsius: 37.0

//Q16: Write a program to convert Indian Rupees to  
1 → USD , 2 → EURO , 3 → Japanese Yen.

//Program: public class a2q16{

public static void main (String args [] ) {

int choice = 2;

double rupees = 1000;

double result = 0;

switch (choice) {

case 1: result = rupees / 83;

System.out.println ("Dollar = " + result);  
break;

case 2: result = rupees / 90;

System.out.println ("Euro = " + result);  
break;

case 3: result = rupees \* 0.75;

System.out.println ("Japanese Yen = " + result);  
break;

default:

System.out.println ("Invalid choice");

}

}

}

//Output:

Euro = 11.11111111

11Q17: Write a java program to calculate the area of  
 1 → Circle  
 2 → Rectangle  
 3 → Triangle.

```
// Program: public class a2q17 {
    public static void main(String args[]) {
        int ch = 2;
        double area = 0;
        switch(ch) {
            case 1: float r = 5;
                area = Math.PI * r * r;
                System.out.println("Area of Circle:" + area);
                break;
            case 2: float length = 10, width = 8;
                area = length * width;
                System.out.println("Area of Rectangle:" + area);
                break;
            case 3: float base = 6, height = 7;
                area = 0.5 * base * height;
                System.out.println("Area of Triangle:" + area);
                break;
            default:
                System.out.println("Invalid choice");
        }
    }
}
```

// Output:

Area of Rectangle: 80.0

//Q18: Write a java program that takes an integer as input and prints "multiple of 5" only if the number is exactly divisible by 5.

```
//Program: public class a2q18 {
    public static void main (String args[]) {
        int num = 25;
        if (num % 5 == 0) {
            System.out.println ("multiple of 5");
        } else {
            System.out.println ("Not");
        }
    }
}
```

Output: multiple of 5

//Q19: WAP to assign an exam hall based on Roll number.

```
//Program: public class a2q19 {
    public static void main (String args[]) {
        int roll = 1027;
        int last = roll % 10;
        if (last >= 0 & last <= 3)
            System.out.println ("Hall A");
        else if (last >= 4 & last <= 6)
            System.out.println ("Hall B");
        else if (last >= 7 & last <= 9)
            System.out.println ("Hall C");
        else
            System.out.println ("invalid roll no");
    }
}
```

Output:

Hall C

//Q20: Assign a 3 digit number to a variable and check whether it's an Armstrong number or not.

```

//Program: public class Armstrong{
    public static void main(String args[]){
        int num = 153;
        int Org = num;
        int h = num / 100;
        int tens = (num / 10) % 10;
        int ones = num % 10;

        int sum = (h * h * h) + (tens * tens * tens) + (ones * ones
            * ones);

        if (sum == Org) {
            System.out.println("num " + "is an Armstrong");
        }
        else {
            System.out.println("num " + "is NOT an Armstrong");
        }
    }
}

```

//Output:

153 is an Armstrong.