

Solution of Assignment 6

Question 1.

```
import java.util.*;

class Q1
{
    public static int additionSimple(int x, int y)
    {
        return x + y;
    }
    public static int subtractionSimple(int x, int y)
    {
        return x - y;
    }
    public static int multiplicationSimple(int x, int y)
    {
        return x * y;
    }
    public static double divisionSimple(int x, int y)
    {
        if(x!=0)
            return (double)y / x;
        else
            return 0;
    }
    public static int remainderSimple(int n, int m)
    {
        return n % m;
    }
    public static double squareRootSimple(int n)
    {
        if(n>=0)
            return Math.sqrt(n);
        else
            return 0.0;
    }
    public static void main(String[] args)
```

```

{
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter first number: ");
    int a = sc.nextInt();
    System.out.println("Enter first number: ");
    int b = sc.nextInt();
    System.out.println("Enter operation (+, -, *, /, %, r for root): ");
    char c = sc.next().charAt(0);
    switch(c)
    {
        case '+': System.out.println("Addition value of "+a+" and "+b+" is
"+additionSimple(a,b)); break;
        case '-': System.out.println("Subtraction value of "+a+" and "+b+" is
"+subtractionSimple(a,b)); break;
        case '*': System.out.println("Multiplication value of "+a+" and "+b+"
is "+multiplicationSimple(a,b)); break;
        case '/': System.out.println("Division value of "+b+" by "+a+" is
"+divisionSimple(a,b)); break;
        case '%': System.out.println("Remainder value of "+a+" by "+b+" is
"+remainderSimple(a,b)); break;
        case 'r': System.out.println("Square root of "+a+" is
"+squareRootSimple(a)); break;
        default: System.out.println("Wrong input");
    }
}
}

```

Question 2.

```

class Q2
{
    public static int getPentagonalNumber(int n)
    {
        return n*(3*n-1)/2;
    }
    public static void main(String[] args)
    {
        System.out.println("first 100 pentagonal numbers with 10 numbers on
each line");
    }
}

```

```

        for(int i = 1;i<=100;i++)
        {
            System.out.print(getPentagonalNumber(i)+" ");
            if(i%10==0)
                System.out.println();
        }
    }
}

```

Question 3.

```

import java.util.*;

class Q3
{
    public static int reverse(int number)
    {
        int reversal = 0;
        while(number!=0)
        {
            reversal = reversal*10 + number%10;
            number /=10;
        }
        return reversal;
    }
    public static boolean isPalindrome(int number)
    {
        if(number==reverse(number))
            return true;
        else
            return false;
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number: ");
        int no = sc.nextInt();
        if(isPalindrome(no))
            System.out.println(no+" is a palindrome number");
    }
}

```

```

        else
            System.out.println(no+" is not a palindrome number");
    }
}

```

Question 4.

```

class Q4
{
    public static int numberOfDaysInAYear(int year)
    {
        if(year%400==0 || (year%4==0 && year%100!=0))
            return 366;
        else
            return 355;
    }
    public static void main(String[] args)
    {
        for(int i = 2000;i<=2020;i++)
            System.out.println("Number of days of year "+i+" is
"+numberOfDaysInAYear(i));
    }
}

```

Question 5.

```

import java.util.*;

class Q5
{
    public static double area(int n, double side)
    {
        return (n*Math.pow(side,2))/(4*Math.tan(Math.PI/n));
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of side: ");
    }
}

```

```

        int n = sc.nextInt();
        System.out.println("Enter the value of side: ");
        double side = sc.nextInt();
        System.out.println("Area of a regular polygon is "+area(n, side));
    }
}

```

Question 6.

```

import java.util.*;

class H6
{
    public static int count(String str, char a)
    {
        int count = 0;
        for(int i = 0;i<str.length();i++)
        {
            if(str.charAt(i)==a)
                count++;
        }
        return count;
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the string: ");
        String str = sc.next();
        System.out.println("Enter the search character: ");
        char c = sc.next().charAt(0);
        System.out.println(c+" occur "+count(str,c)+" time(s) in the string "+str);
    }
}

```

Question 7.

```

import java.util.*;

```

```

class Q7
{
    public static int count(String str)
    {
        int count = 0;
        for(int i = 0;i<str.length();i++)
        {
            if(str.charAt(i)=='a' || str.charAt(i)=='A' || str.charAt(i)=='e' || str.charAt(i)=='E' || str.charAt(i)=='i'
            || str.charAt(i)=='I' || str.charAt(i)=='o' || str.charAt(i)=='O' || str.charAt(i)=='u' || str.charAt(i)=='U'
            )
                count++;
        }
        return count;
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the string: ");
        String str = sc.nextLine();
        System.out.println(" Number of vowels in "+str+" is "+count(str));
    }
}

```

Question 8.

```

import java.util.*;

class Q8
{
    public static boolean isPalindrome(String str)
    {
        int len = str.length();
        for(int i = 0;i<len/2;i++)
        {
            if(str.charAt(i)!=str.charAt(len-i-1))
                return false;
        }
        return true;
    }
}

```

```

    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the string: ");
        String str = sc.nextLine();
        if(isPalindrome(str))
            System.out.println(str+" is a palindrome string");
        else
            System.out.println(str+" is not a palindrome string");
    }
}

```

Question 9.

```

import java.util.*;

class HelloWorld
{
    public static boolean passwordChecker(String str)
    {
        boolean b = true;
        if(str.length()>=8)
        {
            int digit_count = 0;
            for(int i=0;i<str.length();i++)
            {
                if((str.charAt(i)>='A' && str.charAt(i)<='Z') || (str.charAt(i)>='a'
&& str.charAt(i)<='z') || (str.charAt(i)>='0' && str.charAt(i)<='9'))
                {
                    if(str.charAt(i)>='0' && str.charAt(i)<='9')
                    {
                        digit_count++;
                    }
                }
            }
            else
            {
                b=false;
                break;
            }
        }
    }
}

```

```

        }
    }
    if(digit_count>=2)
        b=true;
    else
        b=false;
}
else
    b=false;
return b;
}
public static void main(String[] args)
{
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter your password: ");
    String str = sc.next();
    if(passwordChecker(str))
        System.out.println("Valid password");
    else
        System.out.println("Invalid password");
}
}

```

Question 10.

```

import java.util.*;

class Q10
{
    public static double area(int x, int y, int z)
    {
        double s = (x+y+z)/2.0;
        return Math.sqrt(s*(s-x)*(s-y)*(s-z));
    }
    public static int area(int x, int y)
    {
        return x*y;
    }
    public static int area(int x)

```



```

    {
        return x*x;
    }
    public static double area(double r)
    {
        return Math.PI*Math.pow(r,2);
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("press 1 for triangle, 2 for square, 3 for circle, and 4 for
rectangle");
        System.out.println("Enter your choice: ");
        int c = sc.nextInt();
        int x, y, z;
        double r;
        switch(c)
        {
            case 1: System.out.println("Enter the value of three sides of
triangle: ");
                x = sc.nextInt();
                y = sc.nextInt();
                z = sc.nextInt();
                System.out.println("Area of triangle is : "+area(x,y,z));
                break;
            case 2: System.out.println("Enter the side of : square");
                x = sc.nextInt();
                System.out.println("Area of triangle is : "+area(x));
                break;
            case 3: System.out.println("Enter the radius of circle: ");
                r = sc.nextDouble();
                System.out.println("Area of triangle is : "+area(r));
                break;
            case 4: System.out.println("Enter the value of length and breadth of
rectangle: ");
                x = sc.nextInt();
                y = sc.nextInt();
                System.out.println("Area of triangle is : "+area(x,y));
                break;
            default: System.out.println("Wrong Input");

```

```

    }
}

```

Home Assignment

Question 1.

```

import java.util.*;

class HQ1
{
    public static char nonRepeatedChar(String str)
    {
        int pos=0;
        for(int i=0;i<str.length();i++)
        {
            pos = str.indexOf(str.charAt(i));
            if(pos>=0)
            {
                pos = str.indexOf(str.charAt(i),pos);
                if(pos== -1)
                    return str.charAt(i);
            }
        }
        return ' ';
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your password: ");
        String str = sc.next();
        System.out.println(nonRepeatedChar(str));
    }
}

```

Question 2.

```

import java.util.*;

```

```

public class HQ2
{
    public static double volume(int s)
    {
        return Math.pow(s, 3);
    }
    public static double volume(double r)
    {
        return (4.0/3)*Math.PI*Math.pow(r, 3);
    }
    public static int volume(int l, int b, int h)
    {
        return l*b*h;
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("press 1 for cube, 2 for sphere, and 3 for cuboid");
        System.out.println("Enter your choice: ");
        int c = sc.nextInt();
        switch(c)
        {
            case 1: System.out.println("Enter the side of cube");
                    int s = sc.nextInt();
                    System.out.println("volume of cube is: "+volume(s));
                    break;
            case 2: System.out.println("Enter the radius of sphere: ");
                    double r = sc.nextDouble();
                    System.out.println("volume of sphere is: "+volume(r));
                    break;
            case 3: System.out.println("Enter the value of three sides of cuboid:
");
                    int x = sc.nextInt();
                    int y = sc.nextInt();
                    int z = sc.nextInt();
                    System.out.println("volume of cuboid is: "+volume(x,y,z));
                    break;
            default: System.out.println("Wrong Input");
        }
    }
}

```

```
}
```

Question 3.

```
import java.util.*;

public class HQ3
{
    public static char middleCharacter(String str)
    {
        return str.charAt(str.length()/2);
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the String: ");
        String str = sc.next();
        System.out.println("Middle character of "+str+" is "+middleCharacter(str));
    }
}
```

Question 4.

```
import java.util.*;

class HQ4
{
    public static int wordCount(String str)
    {
        int count = 0;
        for(int i=0;i<str.length();i++)
        {
            if(str.charAt(i)==' ')
                count++;
        }
        return count+1;
    }
    public static void main(String[] args)
    {

```

```

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the String: ");
        String str = sc.nextLine();
        System.out.println("Number of words of "+str+" is "+wordCount(str));
    }
}

```

Question 5.

```

import java.util.*;
public class HQ5
{
    public static boolean isConsecutive(int x, int y, int z)
    {
        if(x==y+1 && y==z+1)
            return true;
        else if(x==y-1 && y==z-1)
            return true;
        else
            return false;
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Input the first number: ");
        int x = sc.nextInt();
        System.out.println("Input the second number: ");
        int y = sc.nextInt();
        System.out.println("Input the third number: ");
        int z = sc.nextInt();
        System.out.println("Check whether the three said numbers are
consecutive or not!");
        System.out.println(isConsecutive(x, y, z));
    }
}

```