



NAME: RAFI ULLAH KHAN (BCS) 5TH SEMESTER

ID: 14283

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PAPER: OBJECT ORIENTED PROGRAMING LAB

Submitted to: Sir AYUB

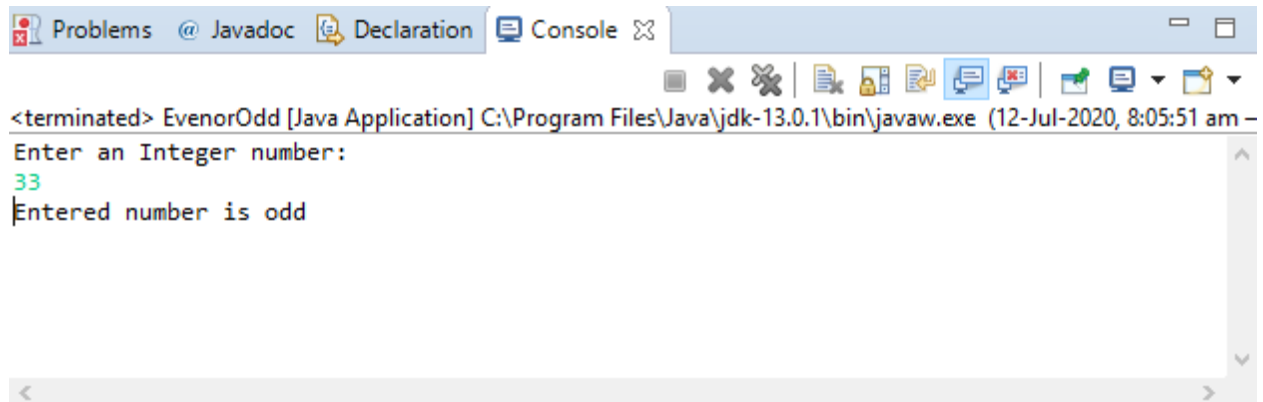
Q1:How to check Even and ODD in java using Object Oriented Approach?

Answer:

```
import java.util.Scanner;

public class EvenorOdd {
    public static void Evenodd() {
        int num;
        System.out.println("Enter an Integer number:");
        Scanner num1 = new Scanner(System.in);
        num = num1.nextInt();
        if ( num % 2 == 0 )
            System.out.println("Entered number is even");
        else
            System.out.println("Entered number is odd");
    }
    public static void main(String[] args) {
        EvenorOdd EO=new EvenorOdd();
        EO.Evenodd();
    }
}
```

Output:



```
<terminated> EvenorOdd [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (12-Jul-2020, 8:05:51 am -
Enter an Integer number:
33
Entered number is odd
```

Q2:How to add 2 complex numbers in java using Object oriented approach?

Answer:

```
class Complex {
    int real, imaginary;
    Complex()
    { }
```

```

Complex(int tempReal, int tempImaginary)
{
    real = tempReal;
    imaginary = tempImaginary;
}
Complex addComp(Complex C1, Complex C2)
{
    Complex temp = new Complex();
    temp.real = C1.real + C2.real;
    temp.imaginary = C1.imaginary + C2.imaginary;
    return temp;
}
}
public class complexNumbers {
public static void main(String[] args) {
    Complex C1 = new Complex(3,2);
    System.out.println("Complex number 1 : "
        + C1.real + " + i"
        + C1.imaginary);
    Complex C2 = new Complex(9, 5);
    System.out.println("Complex number 2 : "
        + C2.real + " + i"
        + C2.imaginary);
    Complex C3 = new Complex();
    C3 = C3.addComp(C1, C2);
    System.out.println("Sum of complex number : "
        + C3.real + " + i"
        + C3.imaginary);
}
}

```

Output:

```

<terminated> complexNumbers [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (12-Jul-2020, 8:10:3)
Complex number 1 : 3 + i2
Complex number 2 : 9 + i5
Sum of complex number : 12 + i7

```

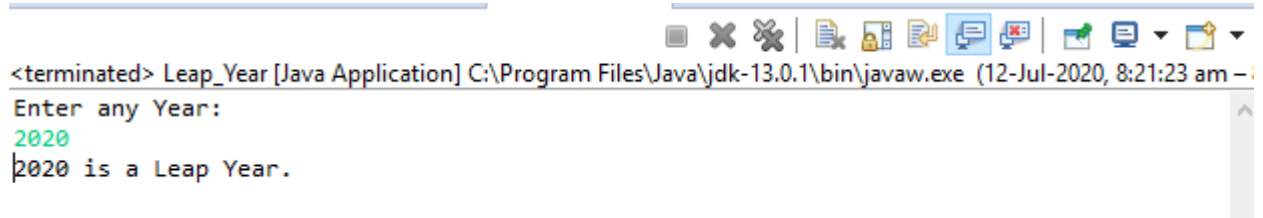
Q3: How to check Leap Year in java using Object Oriented Approach?

Answer:

```
import java.util.Scanner;
public class Leap_Year {
    public static void Leapyear() {
        int year;
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter any Year:");
        year = scan.nextInt();
        scan.close();
        boolean isLeap = false;

        if(year % 4 == 0)
        {
            if( year % 100 == 0)
            {
                if ( year % 400 == 0)
                    isLeap = true;
                else
                    isLeap = false;
            }
            else
                isLeap = true;
        }
        else {
            isLeap = false;
        }
        if(isLeap==true)
            System.out.println(year + " is a Leap Year.");
        else
            System.out.println(year + " is not a Leap Year.");
    }
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Leap_Year ly=new Leap_Year();
        ly.Leapyear();
    }
}
```

Output:



```
<terminated> Leap_Year [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (12-Jul-2020, 8:21:23 am - :
Enter any Year:
2020
2020 is a Leap Year.
```

Q4: How to check that the input from the user is the vowel or not in java using Object Oriented Approach?

Answer:

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

```
public class vowel {
```

```
    public static void vowel() {
```

```
        char ch;
```

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

```
        System.out.print("Enter an Alphabet : ");
```

```
        ch = scan.next().charAt(0);
```

```
        if(ch=='a' || ch=='A' || ch=='e' || ch=='E' ||
ch=='i' || ch=='I' || ch=='o' || ch=='O' ||
ch=='u' || ch=='U')
```

```
        {
            System.out.print("This is a Vowel");
        }
```

```
        else
```

```
        {
            System.out.print("This is not a Vowel");
        }
    }
```

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

```
        // TODO Auto-generated method stub
```

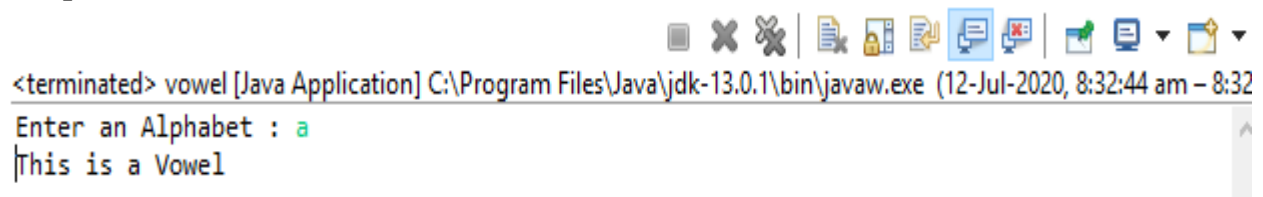
```
        vowel vw1 = new vowel();
```

```
        vw1.vowel();
```

```
    }
```

```
}
```

Output:



```
<terminated> vowel [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (12-Jul-2020, 8:32:44 am - 8:32
Enter an Alphabet : a
This is a Vowel
```

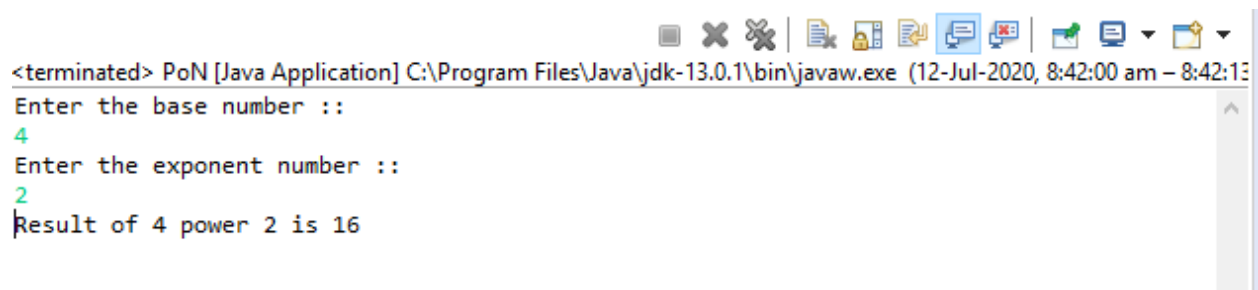
Q5:How to use power of a number in java using Object Oriented approach?

Answer:

```
import java.util.Scanner;
public class PoN {
    public static void PoN() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the base number ::");
        int base = sc.nextInt();
        int temp = base;
        System.out.println("Enter the exponent number ::");
        int exp = sc.nextInt();

        for (int i=1; i<exp; i++){
            temp = temp*temp;
        }
        System.out.println("Result of "+base+" power "+exp+" is
"+temp);
    }
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        PoN PN = new PoN();
        PN.PoN();
    }
}
```

Output:



```
<terminated> PoN [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (12-Jul-2020, 8:42:00 am - 8:42:13)
Enter the base number ::
4
Enter the exponent number ::
2
Result of 4 power 2 is 16
```