Tutorial 3

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Q1.

```java
public class Tut3_1 {
    public static void main(String[] args){
        System.out.println("i) (for loop)");
        for(int i=1;i<6;i++){
            System.out.println(i);
        }

        System.out.println("i) (while loop)");
        int j = 1;
        while(j<6){
            System.out.println(j);
            j += 1;
        }

        System.out.println("ii) (for loop)");
        for(int x=0; x<=14; x+=2){
            if (x==6){
                continue;
            }
            System.out.println(x);
        }

        System.out.println("ii) (while loop)");
        int y = 0;
        while(y<15){
            if(y==6){
                y = y + 2;
                continue;
            }
            System.out.println(y);
            y = y + 2;

        }

    }
}
```

Q2.

i)

```
public class Tut3_2_1{
    public static void main(String[] args){
        for(int i= 1;i<6;i++){
            for(int j=i;j>0;j--){
                System.out.print(i);
            }
            System.out.println();
        }
    }
}
```

ii)

```
public class Tut3_2_2{
    public static void main(String[] args){
        for(int i= 2;i<10;i+=2){
            for(int j = i;j>0;j--){
                System.out.print(i);
            }
            System.out.println();
        }
    }
}
```

iii)

```
public class Tut3_2_3{
    public static void main(String[] args){
        for(int i = 1; i<6; i++){
            for(int j = (5-i);j>0;j--){
                System.out.print(" ");
            }
            for(int x = i;x>0;x--){

                System.out.print("* ");
            }
            System.out.println();

        }
    }
}
```

iv)

```
public class Tut3_2_4{
    public static void main(String[] args){
        for(int i = 9; i>0; i-=2){
            for(int j = (9-i)/2;j>0;j--){
                System.out.print(" ");
            }
            for(int x = i;x>0;x--){
                System.out.print("*");
            }
            System.out.println();
        }
    }
}
```

Q3.

```
public class Tut3_3{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int number = input.nextInt();
        System.out.print("Enter a number : ");
        String letter = input.next();
        System.out.print("output : ");
        for(int i = number;i>0;i--){
            System.out.print(letter);
        }

    }
}
```

Q4.

```
import java.util.Scanner;
public class Tut3_4{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter number that you want to find factorial :
");
        int num = input.nextInt();
        if (num>0) {
            int Factorial = 1;
            for (int i = num; i > 0; i--) {
                Factorial = Factorial * i;
            }
            System.out.print("Factorial of " + num + " = ");
            for (int j = num; j > 1; j--) {
                System.out.print(j + " x ");
            }

            System.out.print("1 = " + Factorial + ".");
        } else if (num == 0) {
            System.out.println("Factorial of 0 is 1. ");
        } else{
            System.out.println("You need to Enter a positive number. ");
        }
    }
}
```

Q5.

```java
import java.util.Scanner;
public class Tut3_5{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter n : ");
        int n = input.nextInt();
        int n1 = 1;
        int n2 = 1;
        int n3 = 2;
        System.out.print("The Fibonacci series : 1, ");
        for(int i = n-2;i>0;i--){
            n3 = n2 +n1;
            n1 = n2;
            n2 = n3 ;
            System.out.print(n1+", ");
        }
        System.out.println(n3 +"\nn"+n +" = "+n3);
        input.close();

    }
}
```

Q6.

```
import java.util.Scanner;

public class Tut3_6{
    public static void main(String[] args){
        double ans = 0;
        String operator = "";
        Scanner input = new Scanner(System.in);
        double num1 , num2;
        String ansString = "";
        while (true) {
            try {
                System.out.print("Enter first number: ");
                num1 = input.nextDouble();
                break;
            } catch (Exception e) {
                System.out.println("Invalid input. Please enter a valid number.");
                input.next();
            }
        }
        while (true) {
            try {
                System.out.print("Enter second number: ");
                num2 = input.nextDouble();
                break;
            } catch (Exception e) {
                System.out.println("Invalid input. Please enter a valid number.");
                input.next();
            }
        }
        System.out.print("Enter operator(+,-,*,/): ");
        operator = input.next();
        while (!operator.equals("+") && !operator.equals("-")&&
!operator.equals("*") && !operator.equals("/")){
            System.out.print("Enter operator(+,-,*,/): ");
            operator = input.next();
        }

        switch (operator){
            case "+":
                ans = num1 + num2 ;
                ansString = Double.toString(ans);
                break;
            case "-":
                ans = num1 - num2 ;
                ansString = Double.toString(ans);
                break;
            case "*":
                ans = num1 * num2 ;
                ansString = Double.toString(ans);
                break;
            case "/":
                if(num2==0){
                    System.out.println("You cant divide number by 0.");
                    ansString = "X";
                }else{
                    ans = num1 / num2;
                    ansString = Double.toString(ans);
                    break;
                }
        }
        System.out.println(num1 +" "+operator+" "+num2+" = "+ ansString );
    }
}
```

Q7.

```java
import java.util.Scanner;
public class Tut3_7{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        int passcode = 48651;
        int i = 0;
        do {
            System.out.print("Enter your password :");
            int userpw = input.nextInt();
            if (userpw==passcode){
                System.out.println("Correct passcode");
                break;
            }
            else{
                System.out.println("incorrect passcode");
            }
            i++ ;

        }while(i<4);
    }
}
```

Q8.

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

public class Tut3_8 {
    public static void main(String[] args){
        Random random = new Random();
        Scanner input = new Scanner(System.in);
        int randomNum = random.nextInt(20);
        System.out.println(randomNum);
        System.out.print("Enter your guess :");
        int guess = input.nextInt();
        int i = 5;
        while(i>0){
            if(guess==randomNum){
                System.out.println("You are correct :) ");
                break;
            }else{
                System.out.println("You are not correct :( ");
            }
            System.out.print("Enter your guess :");
            guess = input.nextInt();
            i-- ;

        }

    }
}
```

Q9.

```
public class Tut3_9 {
    public static void main(String[] args){
        for(int i = 0;i<=500;i++){

            int vten = (i%1000-i%100)/100;
            int vhun = (((i%100-i%10)/10));
            int vtho = ((i%10));

            int temp = vten*vten*vten + vhun*vhun*vhun + vtho*vtho*vtho;
            if (temp==i){
                System.out.println(i);
            }

        }
    }
}
```

Q10.

```
import java.util.*;
import java.io.*;
public class Tut3_10{
    public static void main(String[] args){
        int number , power, count;

        Scanner input = new Scanner(System.in);
        System.out.println("Enter number : ");
        number = input.nextInt();
        System.out.println("Enter power ");
        power = input.nextInt();
        int total = number;
        count = 1;
        while(count<power){
            total = total * number;
            count++ ;
        }
        System.out.println("The answer is " + total);
    }
}
```