**Tutorial 3**

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Q1.

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.

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.

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.

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);  
 }  
}