**BRIDGE COURSE (DAY 3)**

**PROBLEM 1:** Countdown Print numbers from 10 to 1, then “Blastoff!”

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable

Step 3 :Check the condition

Step 4 : Decrement operation

Step 5 :End

**PSEUDO CODE:**

**START**

Declare a variable

Check the given condition

Decrement the value

Print the output

**END**

**C0DE:**

package Day3;

import java.util.Scanner;

public class CountD {

public static void main(String[]args) {

int n=10;

while(n>0) {

System.*out*.println(n);

n--;

}

System.*out*.println("Blastoff");

}

}

**OUTPUT:**

10

9

8

7

6

5

4

3

2

1

Blastoff

**PROBLEM 2:** Sum Until Zero Ask user for numbers repeatedly until they

enter 0. Sum and print the total.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare the variables

Step 3 :Check variable is equal to 0

Step 5 : print sum

Step 6:End

**PSEUDO CODE:**

**START**

Start

Declare the given variable sum=0

Check variable is equal to zero

If yes print sum else sum=sum+variable

END

**CODE:**

package Day3;

import java.util.Scanner;

public class SumZ {

public static void main(String[]args) {

int sum=0;

while(true) {

Scanner sc=new Scanner(System.in);

System.out.println("Enter a number");

int a= sc.nextInt();

if(a==0) {

System.out.println(sum);

break;

}

sum=sum+a;

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter a number  2  Enter a number  5  Enter a number  9  Enter a number  0  16 | Enter a number  0  0 | Enter a number  10  Enter a number  4  Enter a number  3  Enter a number  2  Enter a number  0  19 |

**PROBLEM 3:** Guess the Number Generate a random number between 1-10.Ask the user to guess. Provide feedback and loop until correct

**ALGORITHM:**

Step 1 : Start

Step 2 :Import random library

Step 3 : Declare a variable

Step 5 : Perform the condition

Step 6 :Print the output

Step 8 :End

**PSEUDO CODE:**

**START**

INPUT varible

Check for the condition

Print respective output

END

**CODE:**

package Day3;

import java.util.\*;

public class RandomG {

public static void main(String[]args) {

Random ran=new Random();

Scanner sc=new Scanner(System.in);

int num=ran.nextInt(10+1);

System.out.println("guess a number 1-10");

while(true) {

System.out.println("enter the number");

int a=sc.nextInt();

if(a==num) {

System.out.println("correct");

break;

}else if(a>num) {

System.out.println("guess a smaller number");

}else{

System.out.println("guess a greater number");

}

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| guess a number 1-10  enter the number  4  guess a smaller number  enter the number  3  guess a smaller number  enter the number  2  correct | guess a number 1-10  enter the number  5  guess a greater number  enter the number  3  guess a greater number  enter the number  8  correct | guess a number 1-10  enter the number  6  guess a greater number  enter the number  7  guess a greater number  enter the number  8  guess a greater number  enter the number  9  correct |

**PROBLEM 4:** Infinite Loop Debugging Analyze and fix:

**ALGORITHM**

Step 1: Start

Step 2:Declare variable

Step 3: Check condition

Step 4: Print output

Step 5: End

**PSEUDO CODE:**

**START**

INPUT number

Check for the condition

Print output

END

**CODE:**

package Day3;

import java.util.Scanner;

public class InfiniTe {

public static void main(String[]args) {

int counter =0;

while(counter<5) {

System.out.println("hello");

counter++;

}

}

}

**OUTPUT:**

hello

hello

hello

hello

hello

**PROBLEM 5:** Even Numbers Print even numbers from 2 to 20 using a for

loop.

**ALGORITHM:**

Step 1 : Start

Step 2 :Enter for condition

Step 3 :Enter if condition

Step 5 : Print output

Step 8 :End

**PSEUDO CODE:**

**START**

Enter for condition

Check for the condition

Enter if conditon

Check for the condition

Print result

END

**CODE:**

package Day3;

import java.util.Scanner;

public class EvenN {

public static void main(String[]args) {

for(int i=2;i<=20;i++) {

if(i%2==0) {

System.out.println(i);

}

}

}

}

**OUTPUT:**

2

4

6

8

10

12

14

16

18

20

**PROBLEM 6:** Factorial Calculator Calculate n! for user input n. Handle

edge case when n == 0.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable

Step 3 :For loop

Step 6 :Print output

Step 7:end

**PSEUDO CODE:**

**START**

Declare a variable

For loop statement

Arthematic operation

Print output

**CODE:**

package Day3;

import java.util.Scanner;

public class FactC {

public static void main(String[]args) {

Scanner sc =new Scanner(System.in);

System.out.println("enter a number");

int a=sc.nextInt();

int fact=1;

if(a!=0) {

for(int i=1;i<=a;i++) {

fact=fact\*i;

}

System.out.println(fact);

}else {

System.out.println("1");

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number  5  120 | enter a number  10  3628800 | enter a number  0  1 |

**PROBLEM 7:** Count ‘a’ in String Ask for a string input. Count how many

times ‘a’ or ‘A’ appears.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable

Step 3 :Introduction of For loop

Step 5 : Check for if condition

Step 6 :Incrementation

Step 7:Print result

Step 8 :End

**PSEUDO CODE:**

**START**

Declare count

For loop condition

Check if condition

Incrementation

Print the output

END

**CODE:**

package Day3;

import java.util.Scanner;

public class CountA {

public static void main(String[]args) {

Scanner sc =new Scanner(System.in);

System.out.println("enter a string");

String s=sc.next();

int count=0;

for(int i=0;i<s.length();i++) {

char c=s.charAt(i);

if(c=='a'||c=='A') {

count++;

}

}System.out.println(count);

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a string  AAaaa  5 | enter a string  yufe  0 | enter a string  dfghjka  1 |

**PROBLEM 8:** Simple Star Pattern Print:\*\*\*\*\*

**ALGORITHM:**

Step 1 : Start

Step 2 :Enter a for loop

Step 3 :Print ouput

Step 4:End

**PSEUDO CODE:**

**START**

Check for loop

Print according to condition

END

**CODE:**

package Day3;

import java.util.Scanner;

public class StarP {

public static void main(String[]args) {

for(int i=0;i<5;i++) {

System.out.print("\*");

}

}

}

**OUTPUT:**

**\*\*\*\*\***

**PROBLEM 9**: Skip Negatives Input 5 numbers. Use continue to skip

negative ones and sum the rest.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare two variable

Step 3 :Check for the if condition

Step 5 : Execute the operation and add accordingly

Step 6 :Print the output

Step 8 :End

**PSEUDO CODE:**

**START**

Declare two variables

Check for if condition

Print output

END

**CODE:**

package Day3;

import java.util.Scanner;

public class SkipN {

public static void main(String[]args) {

Scanner sc=new Scanner(System.in);

int count=0;

int sum=0;

while(count<5) {

System.out.println("enter a number: ");

int a=sc.nextInt();

count++;

if(a<0) {

continue;

}else {

sum=sum+a;

}

}

System.out.println("sum is "+sum);

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number:  23  enter a number:  5  enter a number:  -11  enter a number:  34  enter a number:  56  sum is 118 | enter a number:  1  enter a number:  2  enter a number:  3  enter a number:  4  enter a number:  5  sum is 15 | enter a number:  9  enter a number:  0  enter a number:  8  enter a number:  7  enter a number:  6  sum is 30 |

**PROBLEM 10:** Rectangle Pattern Input rows and cols, print a rectangle of \*.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare two variable

Step 3 :Input values

Step 3 :Check for the condition

Step 5 : Print the output pattern

Step 6 :End

**PSEUDO CODE:**

**START**

Declare two variables

Enter rows and colums

Check for the condition

Print the pattern

END

**CODE:**

package Day3;

import java.util.Scanner;

public class RectanG {

public static void main(String[]args) {

Scanner sc=new Scanner(System.in);

System.out.println("enter rows and columns");

int b=sc.nextInt();

int l=sc.nextInt();

for(int i=0;i<b;i++) {

for(int j=0;j<l;j++) {

System.out.print("\*");

}System.out.println();

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter rows and columns  2  2  \*\*  \*\* | enter rows and columns  2  3  \*\*\*  \*\*\* | enter rows and columns  5  7  \*\*\*\*\*\*\*  \*\*\*\*\*\*\*  \*\*\*\*\*\*\*  \*\*\*\*\*\*\*  \*\*\*\*\*\*\* |

**PROBLEM 11:** Triangle Pattern Input height. Print right-angled triangle

with \*.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable

Step 3 :Check for the condition

Step 5 : Print the output pattern

Step 6 :End

**PSEUDO CODE:**

**START**

INPUT a variable

Check for the condition

Print the pattern

END

**CODE:**

package Day3;

import java.util.Scanner;

public class Triangle {

public static void main(String[]args) {

Scanner sc =new Scanner(System.in);

System.out.println("Enter the height");

int a=sc.nextInt();

for(int i=0;i<a;i++) {

for(int j=0;j<=i;j++) {

System.out.print("\*");

}System.out.println();

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter the height  5  \*  \*\*  \*\*\*  \*\*\*\*  \*\*\*\*\* | Enter the height  2  \*  \*\* | Enter the height  3  \*  \*\*\*  \*\*\*\*\* |

**PROBLEM 12:** Pyramid Pattern Challenge Input height. Print centered

pyramid:

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable and enter the height

Step 3 :Check for the condition

Step 5 : Print the output pattern

Step 6 :End

**PSEUDO CODE:**

**START**

Declare a variable

Enter the height

Check for the condition

Print the pattern

END

**CODE:**

package Day3;

import java.util.Scanner;

public class PyraM {

public static void main(String[]args) {

Scanner sc =new Scanner(System.in);

System.out.println("Enter the height");

int a=sc.nextInt();

for(int i=1;i<=a;i++) {

for(int j=1;j<=a-i;j++) {

System.out.print(" ");

}

for(int k=1;k<=2\*i-1;k++) {

System.out.print("\*");

}System.out.println();

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter the height  3  \*  \*\*\*  \*\*\*\*\* | Enter the height  5  \*  \*\*\*  \*\*\*\*\*  \*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\* | Enter the height  2  \*  \*\*\* |