**BRIDGE COURSE (DAY 1)**

**PROBLEM 1:**  **Write a program that takes your name and age as input and prints a greeting like:"Hello John, you are 20 years old."**

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable name,age

Step 3: Assign values

Step 4:Print output

Step 5 :End

**PSEUDO CODE:**

**START**

INPUT name,age

Assign respwctive values

Print output

**END**

**C0DE:**

name= input ("Enter the name")

age = input ("Enter the age”)

print ("hello" + name + ", you are" + age +"years old")

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter the name  Jay  Enter the age  20  **“hello Jay,you are 20 years old”** | Enter the name  John  Enter the age  27  **“hello John, you are 27 years old”** | Enter the name  Nithya  Enter the age  21  **“hello Nithya, you are 21 years old”** |

**PROBLEM 2:** Take two numbers as input (strings), convert them to integers, ar print their sum, difference, and product

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare two variables

Step 3 :Print result

Step 4 :End

**PSEUDO CODE:**

**START**

Start

Declare two variables

Perform operation

Print result

END

**CODE:**

a= int (input ("Enter a number"))

b = int (input("Enter number"))

print (a+b, a-b, a\*b)

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| a=3  b=2  5,1,6 | a=5  b=5  10,0,25 | a=10  b=5  15,5,50 |

**PROBLEM 3:** **I**dentify the data type of the following inputs in your language of choice:

"123", 123, 123.45, True, "Hello".

Print the results.

**ALGORITHM:**

Step 1 : Start

Step 2 :Check using type inbuilt function

Step 3:Print output

Step 8 :End

**PSEUDO CODE:**

**START**

Check using type in built function

Print output

END

**CODE:**

print (type ("123"))

print (type (123))

print (type (123.75))

print (type (True))

print (type ("Hello"))

**OUTPUT:**

Str

Int

Float

Bool

str

**PROBLEM 4:** Write a program that converts Celsius to Fahrenheit using a variable and formula:

F = (C\*9/5) +32

**ALGORITHM**

Step 1: Start

Step 2: Input number

Step 3: Perform operation

Step 4: Print result

Step 5: End

**PSEUDO CODE:**

**START**

INPUT number

Perform operation

Print Output

END

**CODE:**

C= float (input ("Enter the Celsius")

f = (C \*(9/5))+32

print(" the Fahrenheit value is" + str (f))

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter the Celsius  25  The Fahrenheit value is 77.0 | Enter the Celsius  32  The Fahrenheit value is 89.6 | Enter the Celsius  23  The Fahrenheit value is 73.4 |

**PROBLEM 5:** Create a basic calculator that performs +, -, \*, and/ between two user provided numbers.

**ALGORITHM:**

Step 1 : Start

Step 2 :Enter two variables value

Step 3 :Perform and print operation

Step 5 : End

**PSEUDO CODE:**

**START**

INPUT two numbers

Perform and print operation

END

**CODE:**

a=int (input ("Enter a number'))

b= int (input("Enter a number"))

print ("a+b=" + str(a+b), "a-b="+str (a-b), "a\*b="+str(a\*b), "a/b = " + str(a/b))

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number 4  enter a number 4  a+b=8 a-b=0 a\*b=16 a/b=1.0 | enter a number 2  enter a number 3  a+b=5 a-b=-1 a\*b=6 a/b=0.66 | enter a number 5  enter a number 10  a+b=15 a-b=-5 a\*b=50 a/b=0.5 |

**PROBLEM 6:** Accept a number from the user and print whether it is even or odd using if-else.

**ALGORITHM:**

Step 1 : Start

Step 2 :Enter a value

Step 3 :Print even or odd

Step 4:end

**PSEUDO CODE:**

**START**

INPUT a value

Perform operation

Print res

END

**CODE:**

num = int(input ("Enter a number"))

print ("Ever" if num%2==0 else "odd")

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter a number  4  even | Enter a number  10  even | Enter a number  5  odd |

**PROBLEM 7:** Based on marks (0-100), print grade using:

* A: 90+
* B: 80-89
* C: 70-79
* D: 60-69
* F: <60

**ALGORITHM:**

Step 1 : Start

Step 2 :Input a value

Step 3 :Check for the condition

Step 4:Print the output

Step 8 :End

**PSEUDO CODE:**

**START**

Input a value

Check for the condition

Print the output

END

**CODE:**

m= int (input ("Enter the marks"))

If m> 90;

print("A")

elif m>80 and m<89;

print("B")

elif m>70 and m<79;

print("c")

elif m>60 and m<69;

print("D")

else:

print ("F")

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter the marks  60  “F” | Enter the marks  100  “A” | Enter the marks  95  “A” |

**PROBLEM 8:** Accept two numbers and print which is greater, or if they are equal.

**ALGORITHM:**

Step 1 : Start

Step 2 :Input a value

Step 3 :Check for condition

Step 5 : Print output

Step 6 :End

**PSEUDO CODE:**

**START**

INPUT a number

Check for condition

Print output

END

**CODE:**

num 1= int (input("Enter a number"))

num 2 = int( input ("Enter a number"))

print (numl if numl > num2 else if num2 if num > num1 else "Both are equal")

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| Enter a number  5  Enter a number  5  "Both are equal" | Enter a number  45  Enter a number  55  55 | Enter a number  67  Enter a number  32  67 |

**PROBLEM 9**: Using a while loop, print numbers from 10 down to 1

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable

Step 3 : Execute the operation

Step 4 :Print the output

Step 5:End

**PSEUDO CODE:**

**START**

INPUT a number

Declare a variable

Print output

END

**CODE:**

n = 10

while (n>0):

prind (n)

n-=1

**OUTPUT:**

10

9

8

7

6

5

4

3

2

1

**PROBLEM 10**: Accept a number from the user and print its multiplication table up to 10 using a for loop.

**ALGORITHM:**

Step 1 : Start

Step 2 :Input a number

Step 3 :Execute the loop

Step 5 : Print the output

Step 6 :End

**PSEUDO CODE:**

**START**

Enter a number

Execute the loop

Print the output

END

**CODE:**

num = int (input (" enter a number"))

for i in xange (1, 11):

print (str (num) + "\*" + str(i) + " = " + str(num \*i))

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number 5  5\*1=5  5\*2=10  5\*3=15  5\*4=20  5\*5=25  5\*6=30  5\*7=35  5\*8=40  5\*9=45  5\*10=50 | enter a number 3  3 \* 1 = 3  3 \* 2 = 6  3 \* 3 = 9  3 \* 4 = 12  3 \* 5 = 15  3 \* 6 = 18  3 \* 7 = 21  3 \* 8 = 24  3 \* 9 = 27  3 \* 10 = 30 | enter a number 7  7 \* 1 = 7  7 \* 2 = 14  7 \* 3 = 21  7 \* 4 = 28  7 \* 5 = 35  7 \* 6 = 42  7 \* 7 = 49  7 \* 8 = 56  7 \* 9 = 63  7 \* 10 = 70 |