

**AIM:**To write a C program to implement two stage pipelining.

**PROCEDURE:**

Step1:Start

Step 2: Initialize the counter variable to 1.

Step 3:Prompt the user to enter the first number (a).

Step 4:Read the first number (a) from the user.

Step 5:Increment the counter by 1.

Step 6:Prompt the user to enter the second number (b).

Step 7:Read the second number (b) from the user.

Step 8:Increment the counter by 1.

Step 9:Display the menu of operations:  
Addition, Subtraction, Multiplication, and Division.

Step 10:Prompt the user to select an operation (choice).

Step 11:Read the choice from the user.

Step 12:Use a switch statement to perform the operation based on the selected choice:

12.1 For choice 1: Perform addition ( $\text{res} = a + b$ ). Increment the counter by 1.

12.2 For choice 2: Perform subtraction ( $\text{res} = a - b$ ). Increment the counter by 1.

12.3. For choice 3: Perform multiplication ( $\text{res} = a * b$ ). Increment the counter by 1.

12.4 For choice 4: Perform division ( $\text{res} = a / b$ ). Increment the counter by 1.

12.5. For any other choice: Display "Wrong input".

Step 13: Display the value of the counter (the number of cycles taken).

Step 14: Prompt the user to enter the number of instructions (ins).

Step 15: Read the number of instructions (ins) from the user.

Step 16: Calculate the performance measure by dividing the number of instructions (ins) by the counter and store it in the performance measure variable.

Step 17: Display the performance measure

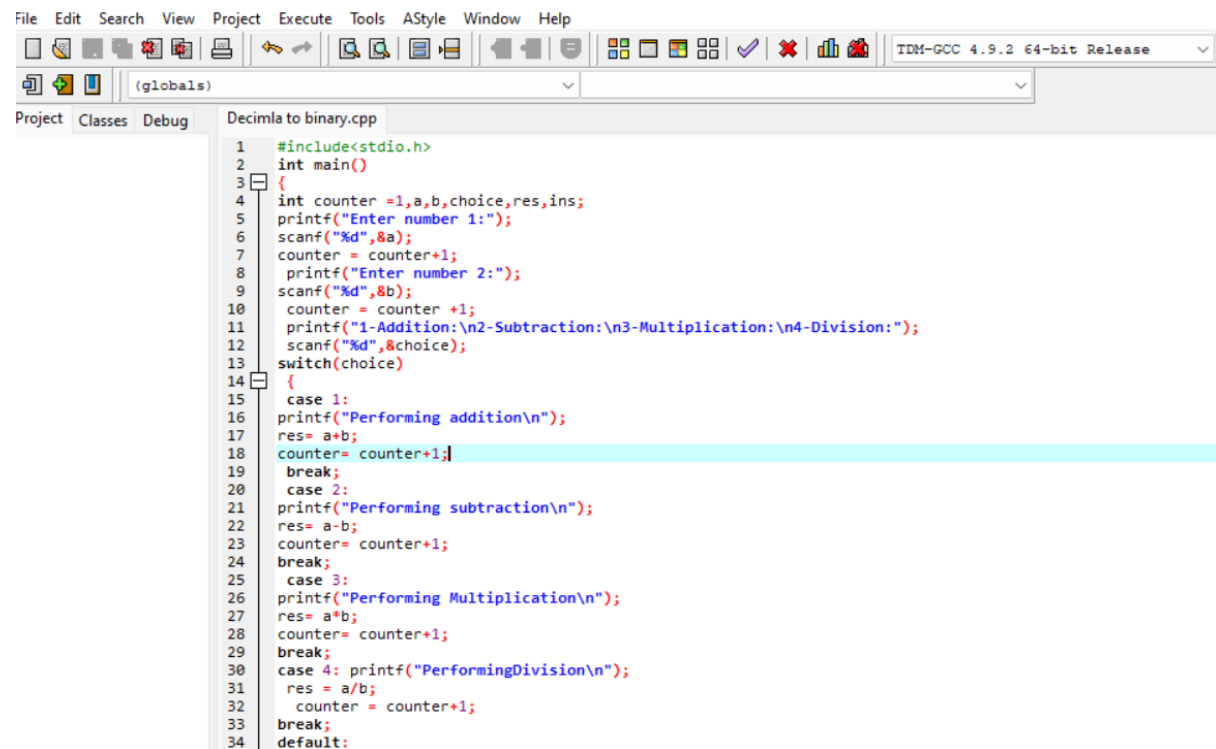
Step 18: End

**PROGRAM:**

```
#include<stdio.h>
int main()
{
int counter =1,a,b,choice,res,ins;
printf("Enter number 1:");
scanf("%d",&a);
counter = counter+1;
printf("Enter number 2:");
scanf("%d",&b);
counter = counter +1;
printf("1-Addition:\n2-Subtraction:\n3-Multiplication:\n4-Division:");
scanf("%d",&choice);
switch(choice)
{
case 1:
printf("Performing addition\n");
res= a+b;
counter= counter+1;
break;
case 2:
printf("Performing subtraction\n");
res= a-b;
counter= counter+1;
break;
case 3:
printf("Performing Multiplication\n");
res= a*b;
counter= counter+1;
break;
case 4: printf("PerformingDivision\n");
res = a/b;
counter = counter+1;
break;
default:
printf("Wrong input");
break;
}
printf("The cycle value is:%d\n",counter);
printf("Enter the number of instructions:");
scanf("%d",&ins);
int performance_measure =ins/counter;
```

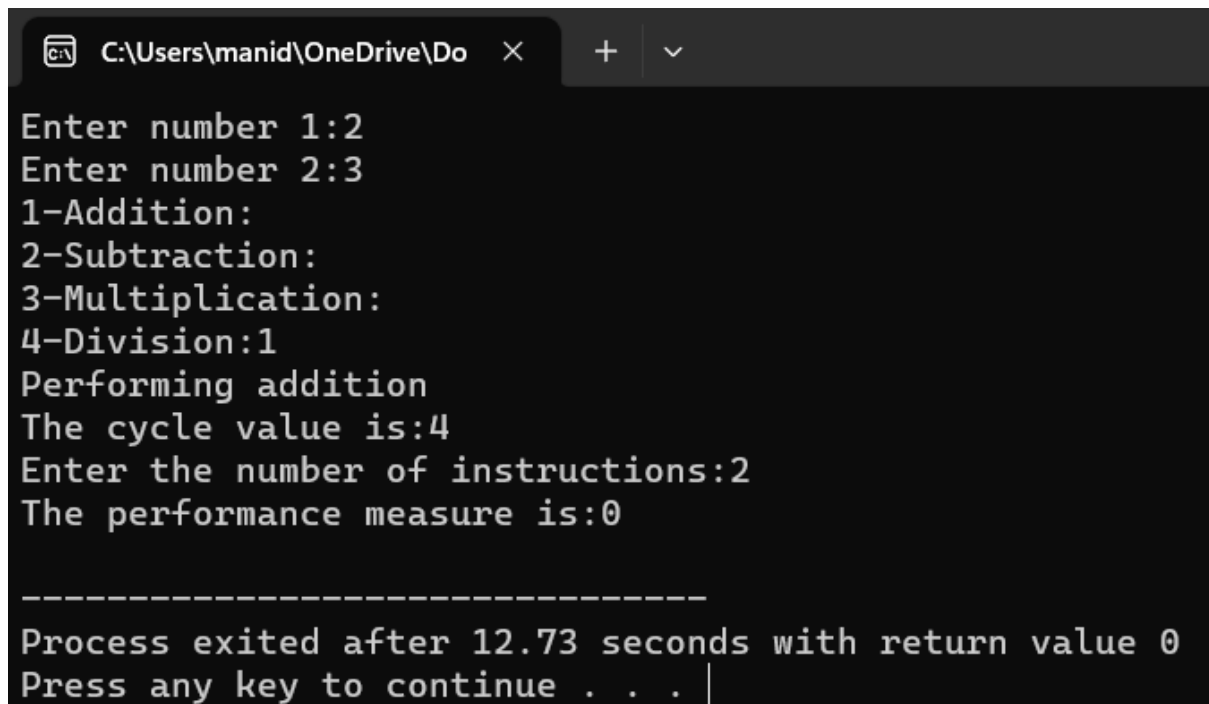
```
printf("The performance measure is:%d\n",performance_measure);
}
```

### INPUT:



```
1 #include<stdio.h>
2 int main()
3 {
4     int counter =1,a,b,choice,res,ins;
5     printf("Enter number 1:");
6     scanf("%d",&a);
7     counter = counter+1;
8     printf("Enter number 2:");
9     scanf("%d",&b);
10    counter = counter +1;
11    printf("1-Addition:\n2-Subtraction:\n3-Multiplication:\n4-Division:");
12    scanf("%d",&choice);
13    switch(choice)
14    {
15        case 1:
16            printf("Performing addition\n");
17            res= a+b;
18            counter= counter+1;
19            break;
20        case 2:
21            printf("Performing subtraction\n");
22            res= a-b;
23            counter= counter+1;
24            break;
25        case 3:
26            printf("Performing Multiplication\n");
27            res= a*b;
28            counter= counter+1;
29            break;
30        case 4: printf("PerformingDivision\n");
31            res = a/b;
32            counter = counter+1;
33            break;
34        default:
```

### OUTPUT:



```
C:\Users\manid\OneDrive\Do
Enter number 1:2
Enter number 2:3
1-Addition:
2-Subtraction:
3-Multiplication:
4-Division:1
Performing addition
The cycle value is:4
Enter the number of instructions:2
The performance measure is:0

-----
Process exited after 12.73 seconds with return value 0
Press any key to continue . . . |
```

**RESULT:** Thus the program was executed successfully using DevC++.