

ITEC 113 Algorithms and Programming Techniques

Lab 1 Programming Exercises

Task 1: Display 'Hello World' on screen.

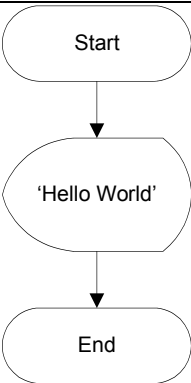
Desired Output:



Analysis

Input: none
Output : "Hello World"
Process: None

Algorithm

Flowchart	Pseudocode
 <pre>graph TD; Start([Start]) --> HelloWorld('Hello World'); HelloWorld --> End([End]);</pre>	Display 'Hello World'

C program

```
#include <iostream.h>

void main()
{
    cout<<"Hello World";
}
```

Task 2 : Add two numbers (10 and 20) and display the result

Desired Output



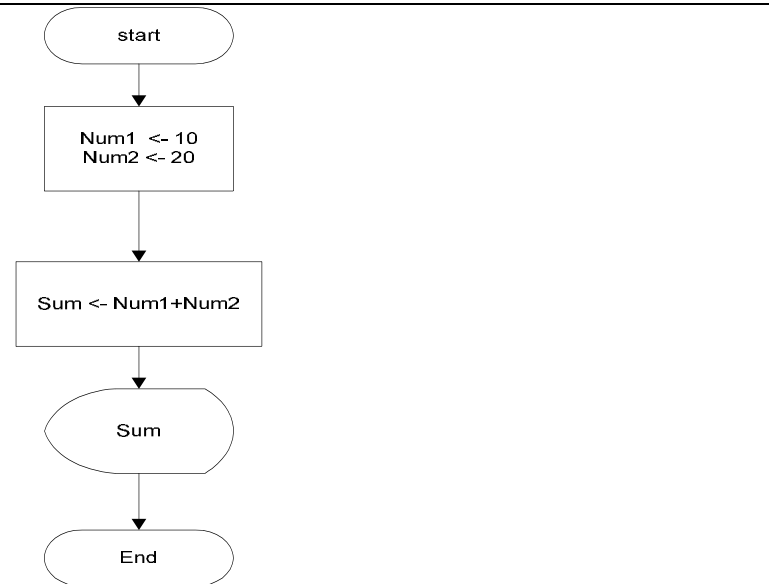
Analysis

Input: none

Output : sum

Process: num1=10, num2=20, sum=num1+num2

Algorithm

Flowchart	Pseudocode
 <pre>graph TD; Start([start]) --> Init[Num1 <- 10 Num2 <- 20]; Init --> Calc[Sum <- Num1+Num2]; Calc --> Display([Sum]); Display --> End([End]);</pre>	<p>Set Num1 to 10 Set Num2 to 20 Sum \leftarrow Num1+Num2 Display Sum</p>

C program

```
#include <iostream.h>
```

```
void main()
```

```
{
```

```
int num1;
```

```
int num2;
```

```
int sum;
```

```
num1 = 10;
```

```
num2 = 20;
```

```
sum = num1+num2;
```

```
cout<<sum;
```

```
}
```

Task 3: Read two numbers from the keyboard. Add these two numbers and display the summation on screen.

(Version 1)

Desired Output



Analysis

Input: num1, num2

Output : sum

Process: $sum = num1 + num2$

Algorithm

Flowchart	Pseudocode
<pre>graph TD; Start([start]) --> Input[/Num1 Num2/]; Input --> Process[Sum <- Num1+Num2]; Process --> Output([Sum]); Output --> End([End]);</pre>	Input Num1, Num2 Sum \leftarrow Num1+Num2 Display Sum

C program

```
#include <iostream.h>
void main()
{
    int num1;
    int num2;
    int sum;

    cout<<"Enter a number";
    cin>>num1;

    cout<<"Enter a number";
    cin>>num2;
    sum = num1+num2;
    cout<<sum;
}
```

Task 3: Read two numbers from the keyboard. Add these two numbers and display the summation on screen.

(Version 2)

Better Output



```
#include <iostream.h>
void main()
{
    int num1;
    int num2;
    int sum;

    cout<<"Enter a number";
    cin>>num1;

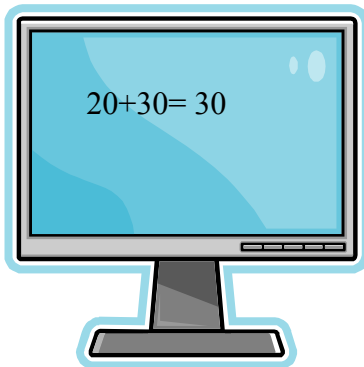
    cout<<"Enter a number";
    cin>>num2;

    sum = num1+num2;
    cout<<"The result is ";
    cout<<sum;
}
```

Task 3: Read two numbers from the keyboard. Add these two numbers and display the summation on screen.

(Version 3)

Better Yet



C Program

```
#include <iostream.h>
void main()
{
    int num1;
    int num2;
    int sum;

    cout<<"Enter a number";
    cin>>num1;

    cout<<"Enter a number";
    cin>>num2;

    sum = num1+num2;
    cout<<num1;
    cout<< "+";
    cout<<num2;
    cout<< "=" ;
    cout<<sum;
}
```