



# Vidyavardhini's College of Engineering & Technology

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<b>Class/Sem:</b>	SE/IV
<b>Experiment No.:</b>	8
<b>Title:</b>	Mixed language program to add two numbers
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**Aim:** Mixed language program for adding two numbers.

**Theory:**

C generates an object code that is extremely fast and compact but it is not as fast as the object code generated by a good programmer using assembly language. The time needed to write a program in assembly language is much more than the time taken in higher level languages like C.

However, there are special cases where a function is coded in assembly language to reduce the execution time.

Eg: The floating point math package must be loaded in assembly language as it is used frequently and its execution speed will have a great effect on the overall speed of the program that uses it.

There are also situations in which special hardware devices need exact timing and it is must to write a program in assembly language to meet this strict timing requirement. Certain instructions cannot be executed by a C program.

Eg: There is no built-in bit-wise rotate operation in C. To efficiently perform this it is necessary to use assembly language routine.

In spite of C being very powerful, routines must be written in assembly language to:

1. Increase the speed and efficiency of the routine
2. Perform machine specific function not available in Microsoft C or Turbo C.
3. Use third party routines

Combining C and assembly:

Built-In-Inline assembly is used to include assembly language routines in C program without any need for a specific assembler.

Such assembly language routines are called in-line assembly.

They are compiled right along with C routines rather than being assembled separately and then linked together using linker modules provided by the C compiler.

Turbo C has inline assembly.

In mixed language program, prefix the keyword `asm` for a function and write Assembly instruction in the curly braces in a C program.

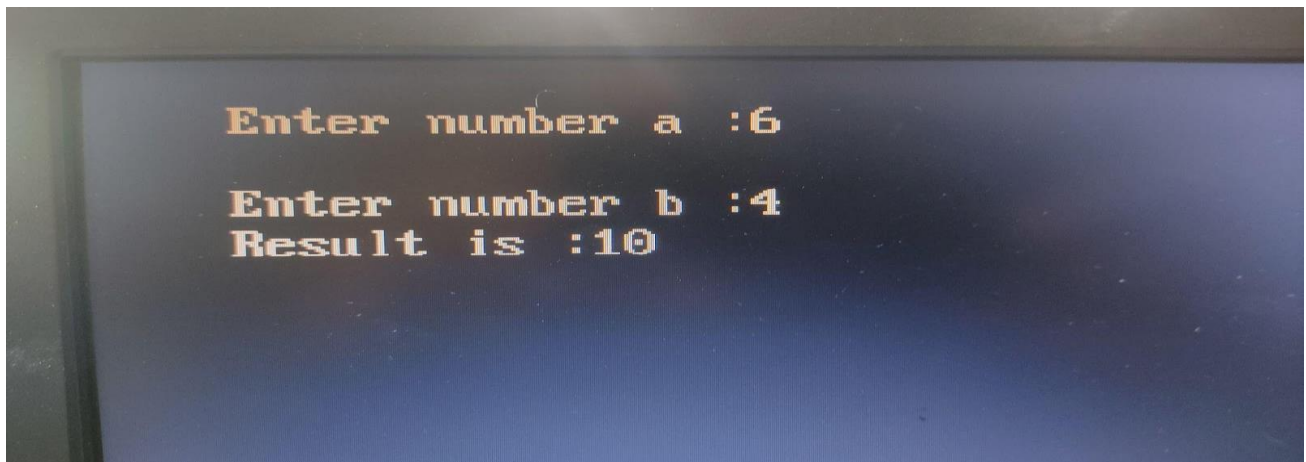
**Code :**

```
#include<stdio.h>
#include<conio.h>

void main(){
int a, b, c;
clrscr();
```

```
printf("\nEnter number a :");  
scanf("%d", &a);  
printf("\nEnter number b :");  
scanf("%d", &b);  
asm{  
    mov ax, a  
    mov bx, b  
    sub ax, bx  
    mov c, ax  
}  
printf("Result is :%d", c);  
  
getch();  
}
```

### **Output :**



### **Conclusion :**

In conclusion, the development of a mixed-language program to add two numbers underscores the versatility and efficiency of leveraging multiple programming languages. By seamlessly integrating the strengths of different languages, such as Python, C, or Java, we can harness their respective capabilities to optimize performance, enhance functionality, and streamline development processes. Through this project, we have demonstrated the power of collaboration across language boundaries, paving the way for future innovations and solutions in software development. As technology continues to evolve, the synergy between diverse programming languages will remain instrumental in addressing complex challenges and driving progress in the digital landscape.