

F.Y.B Tech Academic Year 2021-22

Subject: Programming and Problem Solving  
Trimester: 1

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Division: 1  
Batch: A3

### Assignment -3

Q Write a menu driven program ~~to~~ in C to implement basic arithmetic operations.

Objective: To learn and understand operators in C

To learn and understand switch case statement

Theory:

Arithmetic operator:

These are the arithmetic operators ->

+ → Addition

- → Subtraction

\* → Multiplication

/ → Division

% → Remainder

Teacher's Signature.....

Logical operators  $\rightarrow$

!  $\rightarrow$  Logical not operator

||  $\rightarrow$  Logical or operator

&&  $\rightarrow$  Logical and operator

Relational operators  $\rightarrow$

>  $\rightarrow$  Checks if left value is greater than value of right operand

<  $\rightarrow$  Checks if left value is less than value of right operand

>=  $\rightarrow$  Checks if left value is <sup>greater</sup> ~~less~~ than value of right ~~ope~~ or equal to right value

<=  $\rightarrow$  Checks if value of left operand is less than or equal to value of right.

Switch case →

The switch statement is a selectional control structure that selects a choice from the set of available choices.

Syntax →

```
{ switch (n)
```

```
    case 1: /* code to be executed */  
            break;
```

```
    case 2: /* " " " " */  
            break;
```

```
    break;
```

```
    default: /* code to be executed if  
              n doesn't match any case */  
}
```

Eg →

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

```
void main()
```

```
{
```

```
    int no1, no2, Ans
```

```
    switch (operations)
```

```
{
```

```
    case 1: Ans = no1 + no2
```

```
        break;
```

Teacher's Signature.....

```
case 2: Ans = No1 - No2;  
        break;
```

```
default: printf("choice other than 1 or 2");  
         break;
```

```
    }  
}
```

#### 4. Algorithm

Step 1: Start

Step 2: Input two numbers (I/O)

Step 3: Input arithmetic operation (I/O)

Step 4: IF '+' || '1' (Decision)

$a + b = c$  (Process)

Else Display  $c$  (I/O)

Step 5: IF '-' || '2' (Decision)

$a - b = c$  (Process)

Display  $c$  (I/O)

Step 6: Else if '\*' || '3' (Decision)

$a * b = c$  (Process)

Display  $c$  (I/O)

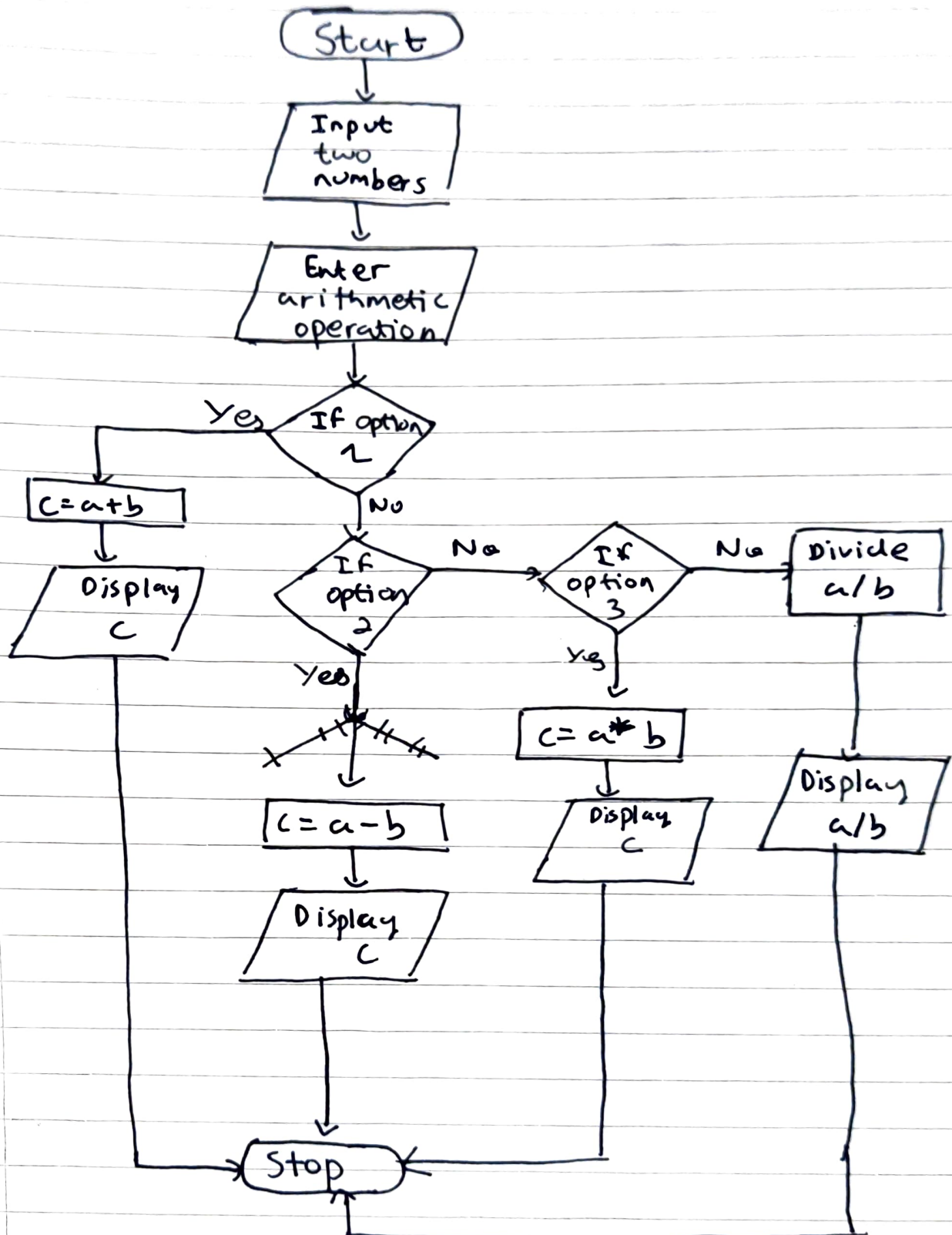
Step 7: Else '/' || '4' (Decision)

$a / b = c$  (Process)

Display  $c$  (I/O).

Step 8: End





6. Input  $\rightarrow$

$NO_1 = 14$

$NO_2 = 8$

Operation = '+', '-', '\*'

7. Output  $\rightarrow$

'+'  $\rightarrow 22$

'-'  $\rightarrow 6$

'\*'  $\rightarrow 112$

Conclusion: Thus implemented basic arithmetic calculator using switch case statement

FAQ

1. What is break statement

$\rightarrow$  Break statement is a loop control statement. It forces termination of a loop. It can only be used in a loop.

2. Is case a keyword?

→ Yes case is a keyword used with Switch statement. Syntax is `case 'n': //code to be executed`

3. Why do we write default case?

→ Default case is written because there can be situations where none of the requirements of a case are fulfilled.