

CODE: CSA0238

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# Basic Input/Output and Operators (2/8/25)

## 1. Write a C program to add two integers

### IPO

- Input: get two values as input say a and b
- Process: add the two inputs using the formula  $c=a+b$
- Output: the output is to print the sum of two integers

### Program

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

```
void main()
```

```
{
```

```
    int a,b,c;
```

```
    printf("Enter value of a : ");
```

```
    scanf("%d", &a);
```

```
    printf("Enter value of b: ");
```

```
    scanf("%d", &b);
```

```
    c=a+b;
```

```
    printf("c= %d\n",c);
```

```
}
```

### output

```
Enter value of a : 3
Enter value of b: 4
c= 7
```

## 2. Write a program to swap two numbers using a temporary variable.

### IPO

- Input: Get two values as input, say a and b.
- Process: Swap the values of a and b using a temporary variable with the logic:  
 $c = a; a = b; b = c;$
- Output: The output is to print the values of a and b after swapping.

### Program

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

```
void main()
```

```
{
```

```
    int a,b,c;
```

```
    printf("Enter value of a : ");
```

```
    scanf("%d", &a);
```

```
    printf("Enter value of b: ");
```

```
    scanf("%d", &b);
```

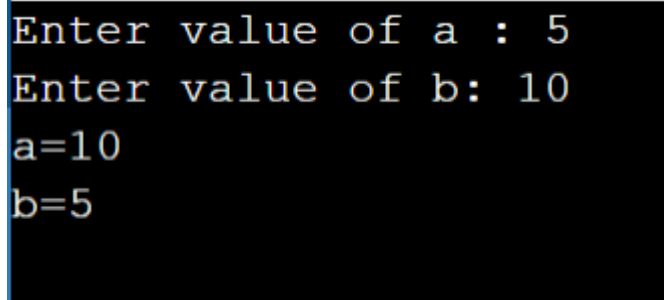
```
    c=a;
```

```
    a=b;
```

```
    b=c;
```

```
printf("a=%d\nb=%d\n",a,b);  
}
```

## output

A screenshot of a terminal window with a black background and white text. It shows the output of a program where the user enters values for variables a and b, and the program prints the swapped values.

```
Enter value of a : 5  
Enter value of b: 10  
a=10  
b=5
```

### 3. Write a program to swap two numbers without using a temporary variable.

#### IPO

- Input: Get two values as input, say a and b.
- Process: Swap the values of a and b without using a third variable ,  
     $a = a + b;$   
     $b = a - b;$   
     $a = a - b;$
- Output: The output is to print the values of a and b after swapping.

#### Program

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

```
void main()
```

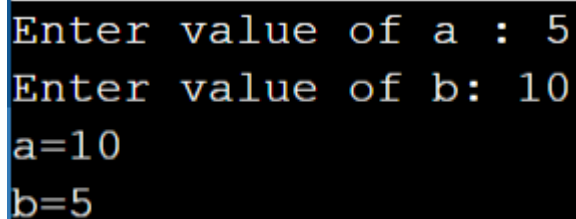
```
{
```

```
int a,b;
```

```
printf("Enter value of a : ");
```

```
scanf("%d", &a);  
printf("Enter value of b: ");  
scanf("%d", &b);  
a=a+b;  
b=a-b;  
a=a-b;  
printf("a=%d\nb=%d\n",a,b);  
}
```

### output

A screenshot of a terminal window with a black background and yellow text. It shows the output of the program: 'Enter value of a : 5', 'Enter value of b: 10', 'a=10', and 'b=5'.

```
Enter value of a : 5  
Enter value of b: 10  
a=10  
b=5
```

## 4. Write a program to find the ASCII value of a character

### IPO

- Input: Get a character as input say ch.
- Process: Find the number (ASCII value) for that character.
- Output: The output is to print the ASCII the entered character.

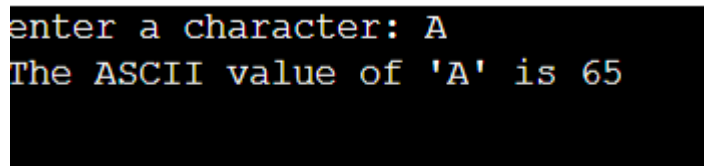
### Program

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

```
void main()
```

```
{  
    char ch;  
    printf("enter a character: ");  
    scanf(" %c", &ch);  
    printf("The ASCII value of '%c' is %d\n", ch, ch);  
}
```

### output

A screenshot of a terminal window with a black background and light blue text. It shows the output of the program: "enter a character: A" followed by "The ASCII value of 'A' is 65".

```
enter a character: A  
The ASCII value of 'A' is 65
```

**5. Write a program to calculate the area and perimeter of a rectangle.**

### IPO

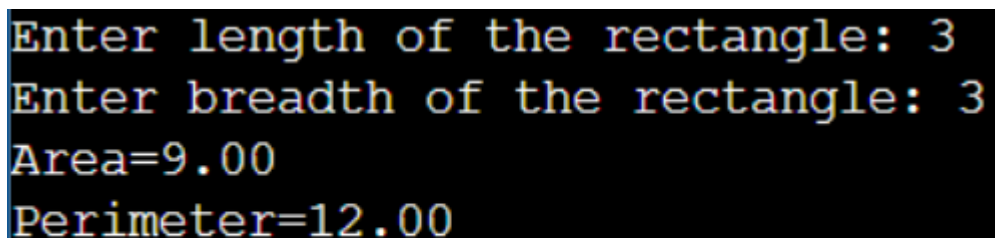
- Input:  
Get two values as input length and breadth of the rectangle.
- Process:
- Calculate the area using the formula:  $\text{area} = \text{length} * \text{breadth}$
- Calculate the perimeter using the formula:  $\text{perimeter} = 2 * (\text{length} + \text{breadth})$
- Output:  
The output is to print the area and perimeter of the rectangle.

## Program

```
#include<stdio.h>

void main()
{
    float area,perimeter,length,breadth;
    printf("Enter length of the rectangle: ");
    scanf("%f",&length);
    printf("Enter breadth of the rectangle: ");
    scanf("%f",&breadth);
    area=length*breadth;
    perimeter=2*(length+breadth);
    printf("Area=%.2f\n",area);
    printf("Perimeter=%.2f\n",perimeter);
}
```

## output

A screenshot of a terminal window showing the output of the program. The text is displayed in a monospaced font with a color scheme where keywords are blue, numbers are red, and other text is green. The output consists of four lines: a prompt for length followed by the input '3', a prompt for breadth followed by the input '3', the calculated area '9.00', and the calculated perimeter '12.00'.

```
Enter length of the rectangle: 3
Enter breadth of the rectangle: 3
Area=9.00
Perimeter=12.00
```

6. Write a program to compute the simple interest.

## **IPO**

- Input:  
Get three values as input say p,r,t
- Process:  
Calculate the simple interest using the formula:  
$$\text{simple interest} = (p * r * t) / 100$$
- Output:  
The output is to print the calculated simple interest.

## **Program**

```
#include<stdio.h>

void main()
{
    float p,r,t,a;
    printf("enter value of p:");
    scanf("%f",&p);
    printf("enter value of r:");
    scanf("%f",&r);
    printf("enter value of t:");
    scanf("%f",&t);
    a=(p*r*t)/100;
    printf("simple interest is %.2f",a);
}
```

## **output**

```
enter value of p:34
enter value of r:44
enter value of t:32
simple interest is 478.72
```

7. Write a program to convert temperature from Celsius to Fahrenheit.

### IPO

- Input:  
Get one value as input say c
- Process:  
Convert Celsius to Fahrenheit using the formula:  
$$\text{fahrenheit} = (\text{celsius} * 9 / 5) + 32$$
- Output:  
The output is to print the temperature in Fahrenheit.

### Program

```
#include<stdio.h>

void main()
{
    float c,f;
    printf("enter celsius:");
    scanf("%f",&c);
    f=(c*9/5)+32;
    printf("The temperature in fahrenheit is %.2f",f);
}
```



## output

```
enter celsius:37
The temperature in fahrenheit is 98.60
```

**8. Write a program to find the quotient and remainder of two integers.**

### IPO

- Input:  
Get two values as input num1 and num2.
- Process:  
Calculate the quotient using:  $\text{quotient} = \text{num1} / \text{num2}$   
Calculate the remainder using:  $\text{remainder} = \text{num1} \% \text{num2}$
- Output:  
The output is to print the quotient and remainder of the given the given numbers .

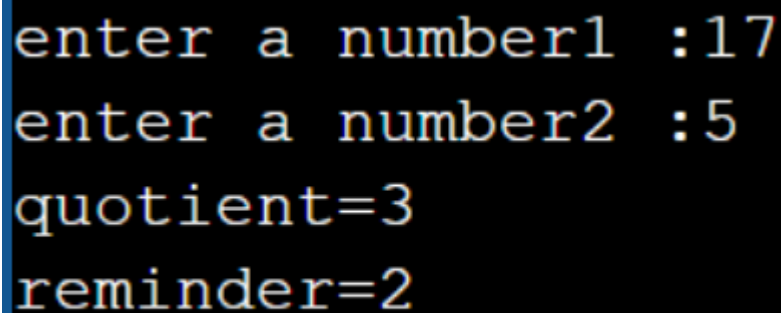
### Program

```
#include<stdio.h>

void main()
{
    int num1,num2,quotient,remainder;
    printf("enter a number1 :");
```

```
scanf("%d",&num1);
printf("enter a number2 :");
scanf("%d",&num2);
quotient=num1/num2;
remainder=num1%num2;
printf("quotient=%d\n",quotient);
printf("remainder=%d\n",remainder);
}
```

### output

A screenshot of a terminal window with a black background and yellow text. The output shows the results of a C program: 'enter a number1 :17', 'enter a number2 :5', 'quotient=3', and 'remainder=2'.

```
enter a number1 :17
enter a number2 :5
quotient=3
remainder=2
```

9. Write a program to check whether a number is even or odd.

### IPO

- Input:  
Get one integer as input say num.
- Process:  
Check the remainder when the number is divided by 2 using the condition:  
If  $\text{num \% 2} == 0$ , it's even

Otherwise, it's odd

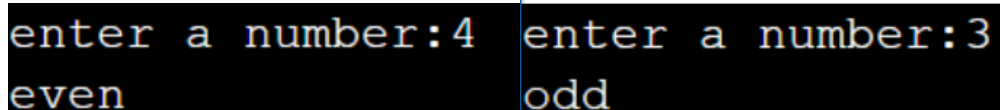
- Output:  
The output is to print whether the number is Even or Odd.

### Program

```
#include<stdio.h>

void main()
{
    int num;
    printf("enter a number:");
    scanf("%d",&num);
    if(num%2==0)
        printf("even");
    else
        printf("odd");
}
```

### output



enter a number:4	enter a number:3
even	odd

**10. Write a program to calculate the square and cube of a number.**

## **IPO**

- Input:  
Get one number as input , say num.
- Process:  
  
    Calculate the square using the formula:  $\text{square} = \text{num} * \text{num}$   
  
    Calculate the cube using the formula:  $\text{cube} = \text{num} * \text{num} * \text{num}$
- Output:  
The output is to print the square and cube of the given number

## **Program**

```
#include<stdio.h>

void main()
{
    int num,square,cube;
    printf("enter a number :");
    scanf("%d",&num);
    square=num*num;
    cube=num*num*num;
    printf("square=%d\n",square);
    printf("cube=%d\n",cube);
}
```

## **output**

```
enter a number :4  
square=16  
cube=64
```