Operators

1. Write a program to find the area and perimeter of a Rectangle/Circle.

```c
#include <stdio.h>
#define PI 3.14

int main()

{
   int usrInp;
   float length, breadth, radius, areaRectangle, perimeterRectangle,
areaCircle, perimeterCircle;

   printf("Select Shape: \n 1: Rectangle\n 2: circle\n");
   scanf("%d", &usrInp);


   if (usrInp == 1) {

        /* to find area and perimeter of rectangle */

       printf("Enter Length: ");
       scanf("%f", &length);
       printf("Enter Breadth: ");
       scanf("%f", &breadth);

       areaRectangle = (length * breadth);
       perimeterRectangle = (2 * (length + breadth));
```

```
        printf("The Area of the Rectangle is: %.2f\n", areaRectangle);
        printf("The Perimeter of the Rectangle is: %.2f\n",
perimeterRectangle);

    }




    else if (usrInp == 2) {

         /* to find area and perimeter of circle */
        printf("Enter Radius: ");
        scanf("%f", &radius);

        areaCircle = (PI * radius * radius);
        perimeterCircle = (2 * PI * radius);

        printf("The Area of the Circle is: %.2f\n", areaCircle);
        printf("The Perimeter of the Circle is: %.2f\n", perimeterCircle);
    }

    else {
        printf("Try again!\n");
    }

    return 0;
}
```

```
Select Shape:
 1: Rectangle
 2: circle
2
Enter Radius: 10
The Area of the Circle is: 314.00
The Perimeter of the Circle is: 62.80
```

```
Select Shape:
 1: Rectangle
 2: circle
1
Enter Length: 10
Enter Breadth: 20
The Area of the Rectangle is: 200.00
The Perimeter of the Rectangle is: 60.00
```

2. Write a program to calculate the volume of a sphere.

```c
#include<stdio.h>
#define PI 3.14

int main()
{
   float radius, volume;

   printf("Enter Radius: ");
   scanf("%f", &radius);

   volume = ((4* PI * radius * radius * radius) / 3);
   printf("The Volume of the Sphere is %.2f\n", volume);

   return 0;
}
```

```
Enter Radius: 10
The Volume of the Sphere is 4186.67
```

3. Write a program to find the square and cube of a number.

```c
#include<stdio.h>

int main()
{
   float x, sq, cu;

   printf("Enter a number: ");
   scanf("%f", &x);

   sq = (x * x);
   cu = (x * x * x);

   printf("The square of %.2f is %.2f\n", x, sq);
   printf("The cube of %.2f is %.2f\n", x, cu);

   return 0;
}
```

```
Enter a number: 4
The square of 4.00 is 16.00
The cube of 4.00 is 64.00
```

4. Write a problem to convert a given temperature in Celsius to Fahrenheit by using formula.
   F = 1.8 * Celsius + 32

```c
#include<stdio.h>

int main()
{
   float cel, far;

   printf("Enter the temperature in Celcius: ");
   scanf("%f", &cel);

   far = (1.8 * cel) + 32;
   printf ("The temperature in Farenheit is: %.1f\n", far);

   return 0;
}
```

```
Enter the temperature in Celcius: 37
The temperature in Farenheit is: 98.6
```

5. Rajesh's basic salary is input through the keyboard. His dearness allowance is 40% of basic salary and house rent allowance is 20% of basic salary. Write a program to calculate his grass salary.

```c
# include <stdio.h>
int main()
{
   float bp, da, hra, grpay;
/*  bp = basic pay,
   da = dearness allowance,
   hra = house rent allowance,
   grpay = gross pay. */

   printf("\n Rajesh, Enter Basic Pay: ");
   scanf("%f",&bp);

   da = (0.4 * bp);
   hra = (0.2 * bp);
   grpay = (bp + da + hra);

   printf("Basic Pay = %.1f\n",bp);
   printf("Dearness Allowance = %.1f\n",da);
   printf("House Rent Allowance = %.1f\n",hra);
   printf("Gross Salary/Pay= %.1f\n",grpay);

   return 0;
}
```

```
 Rajesh, Enter Basic Pay: 50000
Basic Pay = 50000.0
Dearness Allowance = 20000.0
House Rent Allowance = 10000.0
Gross Salary/Pay= 80000.0
```

6. Write a program to interchange the value of the two variables without using a third variable.

```c
#include<stdio.h>

int main()
{
   int a, b;

   printf("Enter 'A': ");
   scanf("%d", &a);

   printf("Enter 'B': ");
   scanf("%d", &b);

   printf("Before Interchanging, the value of \nA: %d\nB: %d\n", a, b);

   a = a + b;
   b = a - b;
   a = a - b;

   printf("After Interchanging, the value of \nA: %d\nB: %d\n", a, b);

   return 0;
}
```

```
Enter 'A': 4
Enter 'B': 5
Before Interchanging, the value of
A: 4
B: 5
After Interchanging, the value of
A: 5
B: 4
```

7. Write a program to rotate the content of three variables without using the fourth variable.

```c
#include<stdio.h>

int main()
{
   int a, b, c;

   printf("Enter 'A': ");
   scanf("%d", &a);

   printf("Enter 'B': ");
   scanf("%d", &b);

   printf("Enter 'C': ");
   scanf("%d", &c);

   printf("Before Rotating, the value of \nA: %d\nB: %d\nC: %d\n", a, b, c);

   a = a + b + c;
   b = ((a + b) - a);
   c = (a - (b + c));
   a = (a - (b + c));

   printf("After Rotating, the value of \nA: %d\nB: %d\nC: %d\n", a, b, c);

   return 0;
}
```

```
Enter 'A': 1
Enter 'B': 2
Enter 'C': 3
Before Rotating, the value of
A: 1
B: 2
C: 3
After Rotating, the value of
A: 3
B: 2
C: 1
```

8. Write a program that converts inches to centimeters. For example, if the user enters 16.9 for a length in inches, the output would be 42.926 cm (One inch equals 2.54 centimeter).

```c
#include<stdio.h>

int main()
{
   float cm, inch;

   printf("Enter the length in inch(es): ");
   scanf("%f", &inch);

   cm = 2.54 * inch;

   printf("%.3f inch(es) is equal to %.3f centimeter(s)\n", inch, cm);

   return 0;
}
```

```
Enter the length in inch(es): 16.9
16.900 inch(es) is equal to 42.926 centimeter(s)
```

9. Write a program to exchange the digits of a two digit number.

```c
#include<stdio.h>

int main()
{
   int number, x, y, exchange;

   printf("Enter a two digit number: ");
   scanf("%d",&number);

   printf("Before Exchange, the number is: %d\n", number);

   x = number % 10;
   y = number / 10;
   exchange = (x * 10) + y;
   printf("After Exchange the number is: %d\n", exchange);

   return 0;
}
```

```
Enter a two digit number: 67
Before Exchange, the number is: 67
After Exchange the number is: 76
```

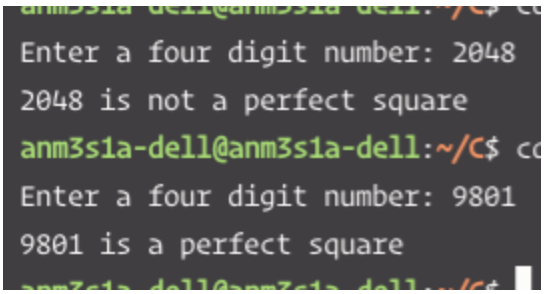
10. Write a program to accept a 4 digit number and display sum of digits and reverse of a number.

```c
#include<stdio.h>

int main()
{
   int digit1, digit2, digit3, digit4, sum;

   printf("Enter 4 digits (Press ENTER each time after every digit unit you get all 4): \n");
   scanf("%d%d%d%d", &digit1, &digit2, &digit3, &digit4);

   sum = (digit1 + digit2 + digit3 + digit4);

   printf("The 4 digit number is: %d%d%d%d\n", digit1, digit2, digit3, digit4);
   printf("The sum of the 4 digit number is: %d\n", sum);
   printf("The reverse format of the 4 digit number is: %d%d%d%d\n", digit4, digit3, digit2, digit1);

   return 0;
}
```

```
Enter 4 digits (Press ENTER each time after every digit unit you get all 4):
3
4
5
6
The 4 digit number is: 3456
The sum of the 4 digit number is: 18
The reverse format of the 4 digit number is: 6543
```

11. Write a program to accept a 4 digit number and to check whether it is a perfect square number or not.

```c
#include<stdio.h>

int main()
{

   int number, i;

   printf("Enter a four digit number: ");
   scanf("%d", &number);

   for(i = 0; i <= number; i++)
   {
       if(number == i * i)
       {
           printf("%d is a perfect square\n", number);
           return 0;
       }
   }
   printf("%d is not a perfect square\n", number);
   return 0;
}
```


Enter a four digit number: 2048
2048 is not a perfect square
anm3s1a-dell@anm3s1a-dell:~/C$ cc
Enter a four digit number: 9801
9801 is a perfect square

12. Write a program to accept a number and to check whether it is even or odd number.

```c
#include<stdio.h>

int main()

{
   int number;
   printf("Enter a number: ");
   scanf("%d", &number);

   if (number % 2 == 0) /*That is if the remainder is 0*/ {
       printf ("It's an even number\n");
   }

   else {
       printf ("It's an odd number\n");
   }

   return 0;
}
```

```
anm3s1a-dell@anm3s1a-de
Enter a number: 2
It's an even number
anm3s1a-dell@anm3s1a-de
Enter a number: 3
It's an odd number
anm3s1a-dell@anm3s1a-de
```

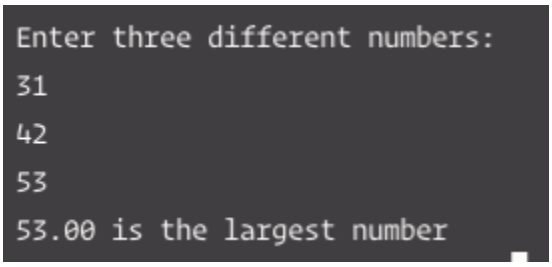
13. Write a program to display absolute value of an entered number using conditional operator.

```c
#include<stdio.h>

int main()
{
   int numberInput;
   printf("Enter a number: ");
   scanf("%d", &numberInput);

   if (numberInput < 0) {
       numberInput = numberInput * (-1);
   }
   else {
       numberInput = numberInput;
   }

   printf("The absolute value of the entered number is %d\n", numberInput);

   return 0;
}
```

```
Enter a number: 4
The absolute value of the entered number is 4
anm3s1a-dell@anm3s1a-dell:~/C$ cd "/home/anm3s1a
e
Enter a number: -6
The absolute value of the entered number is 6
```

14. Write a program to find maximum of three numbers using conditional operator.

```c
#include <stdio.h>

int main()

{
   double num1, num2, num3;

   printf("Enter three different numbers: \n");

   scanf("%lf %lf %lf", &num1, &num2, &num3);

   if (num1 >= num2 && num1 >= num3) {
       printf("%.2f is the largest number\n", num1);
   }

   if (num2 >= num1 && num2 >= num3) {
       printf("%.2f is the largest number\n", num2);
   }

   if (num3 >= num1 && num3 >= num2) {
       printf("%.2f is the largest number\n", num3);
   }

   return 0;
}
```



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