INTERACTIVE SOLUTION OF C PROGRAM PRACTICE PROBLEM

Let's Start Problem Solving

Total 150 Problems

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Contents

Basic or Operators Problem

1. Write a program to print your name, date of birth. and mobile number.

C Program Code:

```c
#include <stdio.h>
void main(){
    printf("Md Fuadul Islam Redoy");
    printf("\n5 April 2000");
    printf("\nPhone Number : +8801236987");
}
```

C++ Code:

```cpp
#include <iostream>
using namespace std;
int main(){
    cout<<"Md Fuadul Islam Redoy";
    cout<<"\n5 April 2000";
    cout<<"\nPhone Number : +8801236987";

    return 0;
}
```

2. Write a program to enter length and breadth of a rectangle and finish its perimeter.

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3. Write a program to enter length and breadth of a rectangle and finish its area.

4. Write a Program to calculate area of an equilateral triangle.

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5. Write a program to compute the perimeter and area of a circle with a given radius.

C Program Code:

```c
#include <stdio.h>
void main()
{
    int radius;
    float area, perimeter;
    radius = 6;
    perimeter = 2*3.14*radius;
    printf("Perimeter of the Circle = %0.2f inches\n",perimeter);
    area = 3.14*radius*radius;
    printf("Area of the Circle = %0.2f square inches\n", area);
}
```

C++ Code:

```cpp
#include <iostream>
using namespace std;
int main()
{
    int radius = 6;
    float area, perimeter = 2*3.14*radius;
    printf("Perimeter of the Circle = %0.2f inches\n",perimeter);
    area = 3.14*radius*radius;
    printf("Area of the Circle = %0.2f square inches\n", area);
    return 0;
}
```

6. Write a program to find the third angle of a triangle if two angles are given.

Code:

```
#include<stdio.h>
void main(){
    int angleO, angleT, angleTh;
    angleO = 50, angleT = 60;
    angleTh = 180 - (angleO + angleT);
    printf ("Third triangle = %d",angleTh);
}
```

7. Write a program to perform addition, subtraction, multiplication, and division of two numbers.

Code:

```c
#include<stdio.h>
void main ()
{
    int x,y,sum,sub,mul;
    float div;
    printf("Enter Two Numbers = ");
    scanf("%d %d",&x,&y);
    sum = x+y;
    sub = x-y;
    mul = x*y;
    div = x/y;

    printf("\nSummation of Two Numbers = %d",sum);
    printf("\nSubtraction of Two Numbers = %d",sub);
    printf("\nMultiplication of Two Numbers = %d",mul);
    printf("\nDivision of Two Numbers = %0.2f",div);
}
```

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8. Write a program that converts Centigrade to Fahrenheit.

Code:

```c
#include<stdio.h>
void main () {
    float f, c;
    printf ("Enter Celsius temperature: ");
    scanf("%f",&c);
    f = ((9 * c) / 5) + 32;
    printf ("Fahrenheit: %.2f", f);
}
```

9. Write a program that converts Fahrenheit to Centigrade.

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10. Write a Program to enter marks of five subjects and calculate total, average and percentage.

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11. Write a Program to enter P, T, R and calculate simple interest.

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12. Write a Program to enter P, T, R and calculate compound interest.

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13. Write a Program that takes minutes as input and display the total number of hours and minutes.

Code:

```
#include<stdio.h>
void main(){
    int time, tHours, tMinutes;
    printf("Enter total minutes = ");
    scanf("%d",&time);
    tHours = time / 60;
    tMinutes = time - (tHours * 60);
    printf("%d minutes = total %d hours and %d minutes", time,
tHours, tMinutes);
}
```

14. Write a program that reads a first name, last name and year of birth and display the names and the year one after another sequentially.

    Input – first name

    Input – last name

    Input – year of birth

    Output – ABU RAIHAN 1997

```c
#include <stdio.h>
void main()
{
    char firstname[20], lastname[20];
    int bir_year;
    printf("Input Your First Name: ");
    scanf("%s", firstname);

    printf("Input Your Last Name: ");
    scanf("%s", lastname);

    printf("Input Your Year of Birth: ");
    scanf("%d", &bir_year);

    printf("%s %s %d", firstname, lastname, bir_year);
}
```

15. Write a program to convert specified days into years, weeks, and days.

```c
#include <stdio.h>
void main()
{
    int days, years, weeks;
    printf("Enter Total Days : ");
    scanf("%d",&days);

    years = days/365;
    weeks = (days % 365)/7;
    days = days - ((years*365) + (weeks*7));

    printf("Years: %d\n", years);
    printf("Weeks: %d\n", weeks);
    printf("Days: %d \n", days);
}
```

16. Write a program that accepts two item's weight (floating points' values) and number of purchase (floating points' values) and calculate the average value of the items.
Test Data:
Weight - Item1: 15
No. of item1: 5
Weight - Item2: 25
No. of item2: 4
Expected Output:
Average Value = 19.444444

```c
#include<stdio.h>
void main(){
    float weight, items, cItems = 0, sum = 1;
    for(int i = 0; i < 2; i++){
        printf("Weight - Item - %d: ",i+1);
        scanf("%f",&weight);
        printf("No. of item - %d: ",i+1);
        scanf("%f",&items);
        cItems += items;
        sum = sum + (weight * items);
    }
    printf("Average value = %.2f",(sum / cItems));
}
```

17. Write a program that accepts an employee's ID, total worked hours of a month and the amount he received per hour. Print the employee's ID and salary (with two decimal places) of a particular month.

```
#include<stdio.h>
void main(){
    int id, hour;
    double value, salary;
    printf("Input the Employees ID : ");
    scanf("%d", &id);
    printf("Input the working hours: ");
    scanf("%d", &hour);
    printf("Salary amount/hr: ");
    scanf("%lf", &value);
    salary = value * hour;
    printf("\nEmployees ID = %d\nSalary = U$ %.2lf\n",
id,salary);
}
```

18. Write a program to find power of any number x ^ y.

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19. Write a program to enter any number and calculate its square root.

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20. Write a program to calculate a bike's average consumption from the given total distance (integer value) traveled (in km) and spent fuel (in liters, float number – 2 decimal point.

```c
#include<stdio.h>
void main(){
    int x;
    float y;
    printf("Input total distance in km: ");
    scanf("%d",&x);

    printf("Input total fuel spent in liters: ");
    scanf("%f", &y);
    printf("Average consumption (km/lt) %.2f ",x/y);
}
```

21. Write a program to find maximum number between two numbers.

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22. Write a program that accepts three integers and find the maximum of three.

```
#include<stdio.h>
void main(){
    int n1, n2, n3;
    printf("Enter Three Different Numbers: ");
    scanf("%d %d %d", &n1, &n2, &n3);
  if (n1 >= n2 && n1 >= n3){
    printf("%d is the largest number.", n1);
  }
  if (n2 >= n1 && n2 >= n3){
    printf("%d is the largest number.", n2);
  }
  if (n3 >= n1 && n3 >= n2){
    printf("%d is the largest number.", n3);
  }
}
```

23. Write a program to check uppercase or lowercase alphabet.

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24. Write a program to find the eligibility of admission for a professional course base on the following criteria:

Marks in MATHS >= 65

Marks in PHY >= 55

Marks in CHEM >= 50

Total in all three subject => 180

Or

Total in Math and physics >=140

25. Write a program to read temperature in centigrade and display a suitable message according to temperature state below:

Temp < 0 then Freezing weather

Temp 0-10 then very cold weather

Temp 10-20 then cold weather

Temp 20-30 then Normal in Temp

Temp 30-40 then it's hot

Temp >=40 then it's very hot

26. Write a program to read four values a, b, c and d from the terminal and evaluates the of (a+b) to (c-d) and prints the result, if c-d is not equal to zero.

27. Write a program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000 : HRA = 20%, DA = 80%

Basic Salary <= 20000 : HRA = 25%, DA = 90%

Basic Salary > 20000 : HRA = 30%, DA = 95%

28. Three friends are standing in front of university and gossiping with each other. Suddenly you came and stand beside them. You are a math genius and trying to observe that, they are standing like a triangle shape or not. So, you are assuming three different angles between themselves and going to make the decision that they are standing in triangle shape or not.

29. Write a program to check whether a number is divisible by 5 and 7 or not.

```c
#include<stdio.h>
void main(){
    int num;
    printf("Enter any number: ");
    scanf("%d", &num);

    if((num % 5 == 0) && (num % 7 == 0)){
        printf("%d is divisible by 5 and 7", num);
    }

    else{
        printf("%d isn't divisible by 5 and 7", num);
    }
}
```

30. Write a Program to find Even or Odd number.

```c
#include<stdio.h>
void main(){
    int n;
    printf("Enter a number - ");
    scanf("%d",&n);
    if(n %2 == 0){
        printf("%d is an even number.",n);
    }
    else{
        printf("%d is an odd number.",n);
    }
}
```

31. Write a program to check are you eligible to make NID Card or not.

```c
#include<stdio.h>
void main(){
    int age;
    printf("Enter your age - ");
    scanf("%d",&age);

    if(age >= 18){
        printf("You are eligible to make NID Card.");
    }
    else if(age < 0){
        printf("Invalid age!");
    }
    else{
        printf("You aren't eligible to make NID Card.");
    }
}
```

32. Write a program to check whether a number is negative, positive or zero.

```c
#include<stdio.h>
void main(){
    int num;
    printf("Enter a Number: ");
    scanf("%d", &num);
    if(num < 0){
        printf("%d is negative number.",num);
    }
    else if(num == 0){
        printf("%d is zero.",num);
    }
    else{
        printf("%d is positive number.",num);
    }
}
```

33. Write a program to check whether a year is leap year or not.

```c
#include<stdio.h>
void main(){
    int year;
    printf("Enter a Year to Check Leap Year : ");
    scanf("%d",&year);

    if((year %4 == 0 && year %100 !=0) || (year %400 == 0))
    {
        printf("Your %d Year is Leap Year",year);
    }
    else
    {
        printf("Your %d Year isn't  Leap Year",year);
    }
}
```

34. Write a program to check whether a character is alphabet or not.

```c
#include<stdio.h>
void main(){
    char ch;
    printf("Enter a Character : ");
    scanf("%c",&ch);

    if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        printf("%c is Alphabet",ch);
    }
    else
    {
        printf("%c isn't Alphabet",ch);
    }
}
```

35. Write a program to input any alphabet and check whether it is vowel or consonant.

```c
#include <stdio.h>
void main()
{
    char a;
    printf("Enter Any alphabet : ");
    scanf("%c",&a);
    if((a=='a' || a=='e' || a=='i' || a=='o' || a=='u') ||
       (a=='A' || a=='E' || a=='I' || a=='O' || a=='U'))
    {
        printf("%c is Vowel",a);
    }
    else
    {
        printf("%c is consonant",a);
    }
}
```

36. Write a program to input any character and check whether it is alphabet, digit, or special character.

```c
#include <stdio.h>
void main()
{
    char input;
    printf("Enter any character: ");
    scanf("%c",&input);
    if((input >= 'a' && input <= 'z') ||
       (input >= 'A' && input <= 'Z'))
    {
        printf("%c is Alphabet.",input);
    }
    else if(input >= 0 && input <= 9)
    {
        printf("%c is Digit.",input);
    }
    else
    {
        printf("%c is Special Character.",input);
    }
}
```

37. Write a program to input week number and print weekday.

```
#include<stdio.h>
void main(){
    int week;
    printf("Enter week number (1-7): ");
    scanf("%d", &week);
    if(week == 1)
    {
        printf("Saturday");
    }
    else if(week == 2)
    {
        printf("Sunday");
    }
    else if(week == 3)
    {
        printf("Monday");
    }
    else if(week == 4)
    {
        printf("Tuesday");
    }
    else if(week == 5)
    {
        printf("Wednesday");
    }
    else if(week == 6)
    {
```

```
        printf("Thursday");
    }
    else if(week == 7)
    {
        printf("Friday");
    }
    else
    {
        printf("Invalid Input! Please enter week number between 1-7.");
    }
}
```

38. Write a program to input month number and print number of days in that month.

```
#include<stdio.h>
void main(){
    int mNumber;
    printf("Enter month number = ");
    scanf("%d",&mNumber);
    if(mNumber == 1){
        printf("January");
    }
    else if(mNumber == 2){
        printf("February");
    }
    else if(mNumber == 3){
        printf("March");
    }
    else if(mNumber == 4){
        printf("April");
    }
    else if(mNumber == 5){
        printf("May");
    }
    else if(mNumber == 6){
        printf("June");
    }
    else if(mNumber == 7){
        printf("July");
    }
    else if(mNumber == 8){
```

```
        printf("August");
    }
    else if(mNumber == 9){
        printf("September");
    }
    else if(mNumber == 10){
        printf("October");
    }
    else if(mNumber == 11){
        printf("November");
    }
    else if(mNumber == 12){
        printf("December");
    }
    else{
        printf("Invalid!");
    }
}
```

39. Write a program to input angles of a triangle and check whether triangle is valid or not.

```c
#include<stdio.h>
void main(){
    int a1, a2, a3, sum;
    printf("Enter 3 angles = ");
    scanf("%d%d%d",&a1, &a2, &a3);

    sum = a1 +  a2 +  a3;

    if( (sum == 180) && a1 > 0 && a2 > 0 && a3 > 0)
    {
        printf("Valid triangle.");
    }
    else
    {
        printf("Invalid triangle.");
    }
}
```

40. Write a program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:

    Percentage >= 90%: Grade A

    Percentage >= 80%: Grade B

    Percentage >= 70%: Grade C

    Percentage >= 60%: Grade D

    Percentage >= 40%: Grade E

    Percentage < 40%: Grade F

```c
#include<stdio.h>
void main(){
    int p, c, b, m, computer, sum, per;
    printf("Enter the marks of physics = ");
    scanf("%d",&p);
    printf("Enter the marks of Chemistry = ");
    scanf("%d",&c);
    printf("Enter the marks of Biology = ");
    scanf("%d",&b);
    printf("Enter the marks of Math = ");
    scanf("%d",&m);
    printf("Enter the marks of Computer = ");
    scanf("%d",&computer);

    sum = (p + c + b + m + computer);
    per = (sum / 500.00) * 100.00;

    if(per >= 90)
    {
        printf("Grade A");
```

```
    }
    else if(per >= 80)
    {
        printf("Grade B");
    }
    else if(per >= 70)
    {
        printf("Grade C");
    }
    else if(per >= 60)
    {
        printf("Grade D");
    }
    else if(per >= 40)
    {
        printf("Grade E");
    }
    else if(per < 40)
    {
        printf("Grade F");
    }
}
```

41. Write a program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000: HRA = 20%, DA = 80%

Basic Salary <= 20000: HRA = 25%, DA = 90%

Basic Salary > 20000: HRA = 30%, DA = 95%

```
#include<stdio.h>
void main(){
    float basicSalary ;
    printf("Enter basic salary = ");
    scanf("%f",&basicSalary);

    if(basicSalary <= 10000){
        printf("Gross Salary = %.0f",(basicSalary +
(basicSalary*0.20) + (basicSalary*0.80)));
    }
    else if(basicSalary <= 20000){
        printf("Gross Salary = %.0f",(basicSalary +
(basicSalary*0.25) + (basicSalary*0.9)));
    }
    else if(basicSalary > 20000){
        printf("Gross Salary = %.0f",(basicSalary +
(basicSalary*0.30) + (basicSalary*0.95)));
    }
}
```

42. Write a program to find the number and sum of all integers greater than 100 and less than 200 that are divisible by 7.

```
#include<stdio.h>
void main(){
    int sum, i;
    sum = 0;
    for(i = 101; i < 200; i++){
        if(i %7 == 0){
            printf("%d ",i);
            sum += i;
        }
    }
    printf("\nSum of all integers = %d",sum);
}
```

43. Write a program to check whether an alphabet is vowel or consonant using switch case.

```c
#include<stdio.h>
void main(){
    char ch;
    printf("Enter any character - ");
    scanf("%c",&ch);
    switch(ch){
        case 'a':
        printf("%c is vowel",ch);
        break;
        case 'e':
        printf("%c is vowel",ch);
        break;
        case 'i':
        printf("%c is vowel",ch);
        break;
        case 'o':
        printf("%c is vowel",ch);
        break;
        case 'u':
        printf("%c is vowel",ch);
        break;
        default:
        printf("%c is consonant.",ch);
    }
}
```

44. Write a program to find roots of a quadratic equation using switch case.

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45. Write a program to create Simple Calculator using switch case.

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46. Write a program to Print your name 20 times using one printf.

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47. Write a program to Calculate Sum of Natural Numbers.

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48. Write a program to Calculate Sum of 1 to 10 numbers.

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49. Write a program to Generate Multiplication Table.

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50. Write an infinite loop. An infinite loop never ends. Condition is always true.

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51. Write a for loop to print Even numbers up to N.

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52. Write a for loop to print odd numbers up to N.

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53. Write a program to print all natural numbers in reverse (from n to 1).

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54. Write a program to print all alphabets from a to z.

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55. Write a program to find last digit of a given number.

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56. Write a program to find first digit of a given number.

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57. Write a program to find first and last digit of a number.

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58. Write a program to find sum of first and last digit of a number.

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59. Write a program to count number of digits in a number.

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60. Write a Program to reverse a given number using while loop.

For example: The number 12345 should be written as 54321.

```
#include<stdio.h>
void main(){
    int n, cN, rev, rem;
    printf("Enter a number - ");
    scanf("%d",&n);
    cN = n;
    rev = 0;
    while(cN != 0){
        rem = cN % 10;
        rev = rev * 10 + rem;
        cN /= 10;
    }
    printf("Reverse of %d = %d",n, rev);
}
```

61. Write a program to check whether a number is palindrome or not.

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62. Write a program to find frequency of each digit in a given integer.

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63. Write a program to enter a number and print it in words.

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64. Write a program to find all factors of a number.

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65. Write a program to check whether a number is Prime number or not.

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66. Write a program to find sum of all prime numbers between 1 to n.

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67. Write a program to find all prime factors of a number.

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68. Write a program to check whether a number is Armstrong number or not.

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69. Write a program to print all Armstrong numbers between 1 to n.

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70. Write a program to check whether a number is Perfect number or not.

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71. Write a program to print all Perfect numbers between 1 to n.

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72. Write a program to check whether a number is Strong number or not.

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73. Write a program to print all Strong numbers between 1 to n.

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74. Write a program to print Fibonacci series up to n terms.

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75. The factorial of an integer m is the product of consecutive integers from 1 to m.

That is Factorial m=m! =m*(m-1) *……*1.

Write a program that computes and print the result for any given m.

Code:

```
#include<stdio.h>
void main(){
    int m, mul, i;
    printf("Enter a number = ");
    scanf("%d",&m);
    mul = 1;
    for(i = 1; i <= m; i++){
        mul *= i;
    }
    printf("Factorial of %d = %d",m, mul);
}
```

76. 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 = ?

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77. 1 + 3 + 4 + 5 + 6 + 7 + …… + N = ?

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78. 2 + 4 + 6 + 8 + 10 + 12 + 14 = ?

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79. 2 + 4 + 6 + 8 + 10 + 12 + 14 + ... + 26 = ?

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80. 2 + 4 + 6 + 8 + 10 + 12 + 14 + ... + N = ?

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83. 1 +11 + 111 + 1111 + .. n terms

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84. Write a program to print the following outputs using for loops.

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```c
#include<stdio.h>
void main(){
    int i, j;

    for(i = 1; i <= 5; i++){
        for(j = 1; j <= i; j++){
            printf("%d ",i);
        }
        printf("\n");
    }
}
```

85. Write a program to read the age of 10 persons and count the number of persons in the age group 50 to 60.

```c
#include<stdio.h>
void main(){
    int t, age, i;
    t = 0;
    for(i = 1; i <= 10; i++){
        printf("Enter %d no person's age = ", i);
        scanf("%d",&age);
        if(age >= 50 && age <= 60){
            t++;
        }
    }
    printf("Total persons between 50 to 60 ages = %d",t);
}
```

86. Write a program to print a multiplication table.

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87. Write a program to print a square size 5 by using the character S as shown below

```
SSSSS
SSSSS
SSOSS
SSSSS
SSSSS
```

```c
#include<stdio.h>
void main(){
    int i, j;
    for(i = 1; i <= 5; i++){
        for(j = 1; j <= 5; j++){
            if(i == 3 &&  j == 3){
                printf("O ");
            }
            else{
                printf("S ");
            }
        }
        printf("\n");
    }
}
```

88. Write a program to print a Right-Angle Floyd's Triangle as shown bellow

```
*
*     *
*     *     *
*     *     *     *
```

```c
#include<stdio.h>
void main(){
    int i, j;
    for(i = 1; i <= 5; i++){
        for(j = 1; j <= i; j++){
            printf("*\t");
        }
        printf("\n");
    }
}
```

89. Write a program to print a triangle as shown bellow:

```
            *
        *   *
    *   *   *
*   *   *   *
```

```c
#include<stdio.h>
void main(){
    //i = total row
    //j = total gap in every line
    //k = how many star I want to print in every line
    int i, j, k;
    for(i = 1; i <= 4; i++){
        for(j = 1; j <= (4 - i); j++){
            printf("\t");
        }
        for(k = 1; k <= i; k++){
            printf("*\t");
        }
        printf("\n");
    }
}
```

90. Write a program to print a triangle as shown below:

```
*     *     *     *     *
*     *     *     *
*     *     *
*     *
*
```

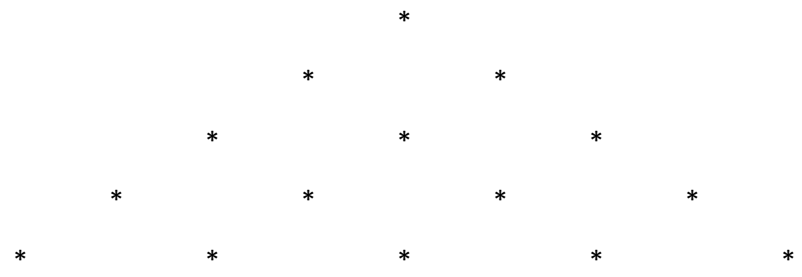
```c
#include<stdio.h>
void main(){
    //i = row number
    //j = how many star I want to print
    int i, j, k;
    for(i = 1; i <= 5; i++){
        for(j = j = 5; j >= i; j--){
            printf("*\t");
        }
        printf("\n");
    }
}
```

91. Write a program to print a triangle as shown below:

```
1
2       3
4       5       6
7       8       9       10
11      12      13      14      15
```

```c
#include<stdio.h>
void main(){
    //i = how many row
    //j = how many columns
    int i, j, k, temp;
    temp = 1;
    for(i = 1; i <= 5; i++){
        for(j = 1; j <= i; j++){
            printf("%d\t",temp);
            temp++;
        }
        printf("\n");
    }
}
```

92. Write a program to print a triangle as shown below



```
#include<stdio.h>
void main(){
    int i, space, star;
    for(i = 1; i <= 5; i++){
        for(space = 1; space <= 5-i; space++){
            printf(" ");
        }
        for(star = 1; star <= i; star++){
            printf("* ");
        }
        printf("\n");
    }
}
```

93. The numbers in the sequence 1 1 2 3 5 8 13 21……. Are called Fibonacci numbers.

Write a program using a for loop to calculate and print the Fibonacci numbers.

```c
#include<stdio.h>
void main(){
    int n1, n2, n3, i, number;
    n1 = 0, n2 = 1;
    printf("Enter the number of elements: ");
    scanf("%d",&number);
    printf("\n%d %d",n1,n2);
    for(i=2;i<number;++i){
        n3=n1+n2;
        printf(" %d",n3);
        n1=n2;
        n2=n3;
    }
}
```

94. Write a program that compute the sum of the digit of a given integer number.

```c
#include<stdio.h>
void main(){
    int n, cN, sum, rem;
    sum = 0;
    printf("Enter a number = ");
    scanf("%d",&n);
    cN = n;

    while(cN != 0){
        rem = cN % 10;
        sum += rem;
        cN /= 10;
    }
    printf("Sum of %d = %d",n,sum);
}
```

95. For each integer n in the interval [a, b] (given as input):

- If 1<=n<=9, then print the English representation of it in lowercase. That is 1 for "one", 2 for "two" and so on.
- Else if n>9 and it is an even number, then print "even".
- Else if n>9 and it is an odd number, then print "odd".

Input Format

The first line contains an integer, 5

The second line contains an integer, 11

Sample Output

five

six

seven

eight

nine

even

odd

```
#include<stdio.h>
void main(){
    int a, b, n;
    printf("Enter the value of a and b = ");
    scanf("%d%d",&a, &b);
    for(n = a; n <= b; n++){
            if(n == 1){
                printf("one\n");
            }
            else if(n == 2){
                printf("two\n");
            }
            else if(n == 3){
                printf("three\n");
            }
```

```
        else if(n == 4){
            printf("four\n");
        }
        else if(n == 5){
            printf("five\n");
        }
        else if(n == 6){
            printf("six\n");
        }
        else if(n == 7){
            printf("seven\n");
        }
        else if(n == 8){
            printf("eight\n");
        }
        else if(n == 9){
            printf("nine\n");
        }
        if(n > 9){
            if(n %2 == 0){
                printf("even\n");
            }
            else{
                printf("odd\n");
            }
        }
    }
```

```
    }
```

96. Write a program to find greatest common divisor (GCD) or least common multiple (LCM) of given two numbers.

```c
#include<stdio.h>
void main()
{
    int num1, num2, n1, n2, gcd, lcm, rem;
    printf("Enter two numbers: ");
    negative:
    scanf("%d %d",&num1, &num2);

    if( (num1 < 0 && num2 < 0) || num1 < 0 || num2 < 0 ){
        printf("\nInvalid number!\nPlease enter positive number: ");
        goto negative;
    }
    else{
        n1 = num1;
        n2 = num2;
        while(n2 !=0){
            rem = n1 % n2;
            n1 = n2;
            n2 = rem;
        }
        printf("\nGCD is %d",n1);
        lcm = (num1*num2)/n1;
          printf("\nLCM  is %d",lcm);
     }
}
```

97. Write a program to check whether a number is Prime number or not.

```c
#include<stdio.h>
void main(){
    int num, temp, i;
    temp = 0;
    printf("Enter a number - ");
    scanf("%d",&num);

    for(i = 2; i < num; i++){
        if(num %i == 0){
            temp++;
        }
    }
    if(temp == 0){
        printf("%d is prime number.",num);
    }
    else{
        printf("%d isn't prime number.",num);
    }
}
```

98. Write a program to check whether a number is Armstrong number or not.

```
//Armstrong number is a number that is equal to the sum of cubes
of its digits.
#include<stdio.h>
void main(){
    int num, sum, rem, cNum;
    sum = 0;
    printf("Enter a number - ");
    scanf("%d",&num);
    cNum = num;

    while(num != 0){
        rem = num % 10;
        sum += (rem * rem * rem);
        num /= 10;
    }
    if(cNum == sum){
        printf("%d is armstrong number.",cNum);
    }
    else{
        printf("%d isn't Armstrong number.",cNum);
    }
}
```

Array

99. Write a Program for sum of 5 numbers using Array.

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100. Write a Program for sum of 5 numbers using Array. (Take input by keyboard)

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101. Write a Program to calculate sum and average of N numbers.

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102. Write a Program to find largest and smallest number using array

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103. Write a Program to find positive and negative number using array.

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104. Write a Program to copy an array and store it another array.

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105. Write a Program to arrange a set of number in an ascending order.

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106. Write a Program to arrange a set of number in an ascending order and find largest value.

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107. Write a Program to arrange a set of number in a descending order.

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108. Write a Program to arrange a set of number in a descending order.

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109. Write a Program to make Fibonacci series using array.

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110. Write a program to get input from user for 2D Array.

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111. Write a program to get input from user and print for 2D Array.

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112. Write a program to create a simple matrix.

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113. Write a program to add two matrices.

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114. Write a program to subtract two matrices.

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115. Write a program to perform Scalar matrix multiplication.

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116. Write a program to multiply two matrices.

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117. Write a program to check whether two matrices are equal or not.

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118. Write a program to find sum of main diagonal elements of a matrix.

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119. Write a program to find sum of minor diagonal elements of a matrix.

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120. Write a program to find sum of each row and column of a matrix.

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121. Write a program to interchange diagonals of a matrix.

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122. Write a program to find upper triangular matrix.

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123. Write a program to find lower triangular matrix.

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124. Write a program to find sum of upper triangular matrix.

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125. Write a program to find sum of lower triangular matrix.

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126. Write a program to find transpose of a matrix.

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127. Write a program to find determinant of a matrix.

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128. Write a program to check Identity matrix.

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129. Write a program to check Sparse matrix.

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130. Write a program to check Symmetric matrix.

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131. Write a program to print the following characters in a reverse way.

Test Characters: 'X', 'M', 'L'
Expected Output:
The reverse of XML is LMX

132. Write a program to sort an array in ascending order and find the 3rd largest element in array.

133.Write a program to print a matrix using array.

```c
#include<stdio.h>
void main(){
    int num[3][3], i, j;
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",j+1);
        }
        printf("\n");
    }
}
```

134.Write a program to add, Subtract and multiply two matrixes Using 2D Array.

```c
#include<stdio.h>
void main(){
    int arr1[3][3], arr2[3][3], i, j, sum, add[3][3], sub[3][3],
multi[3][3];
    //taking input for first matrix
    printf("Enter the values of 1st matrix = ");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            scanf("%d",&arr1[i][j]);
        }
    }
    //printing the first array
    printf("\nFirst array - \n");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",arr1[i][j]);
        }
        printf("\n");
    }
    //taking input for 2nd matrix
    printf("\nEnter the values of 2nd matrix = ");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            scanf("%d",&arr2[i][j]);
        }
    }
    //printing the 2nd array
```

```
    printf("\nSecond array - \n");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",arr2[i][j]);
        }
        printf("\n");
    }
    //Adding 1st and 2nd array
    printf("\nAddition of two matrix - \n");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            add[i][j] = arr1[i][j] + arr2[i][j];
        }
    }
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",add[i][j]);
        }
        printf("\n");
    }
    //Subtraction of 1st and 2nd array
    printf("\nSubtraction of two matrix - \n");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            sub[i][j] = arr1[i][j] - arr2[i][j];
        }
    }
```

```
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",sub[i][j]);
        }
        printf("\n");
    }
    //Multiplication of 1st and 2nd array
    printf("\nMultiplication of two matrix - \n");
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            multi[i][j] = arr1[i][j] * arr2[i][j];
        }
    }
    for(i = 0; i < 3; i++){
        for(j = 0; j < 3; j++){
            printf("%d\t",multi[i][j]);
        }
        printf("\n");
    }
}
```

Output:

```
Enter the values of 1st matrix = 1 2 3 4 5 6 7 8 9

First array -
1       2       3
4       5       6
7       8       9

Enter the values of 2nd matrix = 1 2 3 4 5 6 7 8 9

Second array -
1       2       3
4       5       6
7       8       9

Addition of two matrix -
2       4       6
8       10      12
14      16      18

Subtraction of two matrix -
0       0       0
0       0       0
0       0       0

Multiplication of two matrix -
1       4       9
16      25      36
49      64      81
```

135.Suppose you have an Array with the size of 10. Your program will input all the array elements from the user. Now using a loop, traverse the array.

During traversing, if the array contains an odd number in odd index, take the odd value from that odd index from the array and make the summation of those numbers and replace that index value with 0. Print the summation and the array. The given sample is for your understanding. You must use your own sample.

Example:

Before Operation –

Index	1	2	3	4	5	6	7	8	9	10
Elements	1	3	6	5	7	9	11	8	3	8

After Operation Elements 0 3 6 5 0 9 0 8 0 8 Summation = 22

Elements	0	3	6	5	0	9	0	8	0	8

Summation = 22

Code:

136. The scenario in front of any virtual Bank is like, Men and women are standing in a single line. It looks so bad.

Now separate men and women in different two line that it looks like a gentle management system and develop the above program to find the majority of gender in the line.

Disarranged line scenario is like - M M W W M M M M W M

M	M	W	W	M	M	M	M	W	M

M = male

W = Women

After operation-

M	M	M	M	M	M	M

W	W	W

137. There's a list of number in a row on the table. Your teacher is telling a number which is the addition of any of the two number from the given number list on the table.

Your job is to find that two number which addition is equal to the number given by your teacher. If there's no pair of number in a list is equal to the given number by your teacher, then you will say "Sir, there's no pair of numbers equal to your number" otherwise you will show that two number which addition is equal to the given number by your teacher. Write a program to solve the situation.

138.Suppose you have taken some values in an array of any size. For example, array1 = [5, 2, 3 ,1, 9, 4]. Now your friend requesting you to shift array values one cell to the right side (Right Shift). As per the request of your friend the **array1** will be now **[4, 5, 2, 3, 1, 9**]. Now write a C program to satisfy the request of your friend by choosing an appropriate technique to shift the array values to the right.

Note: The array values and size will be defined by user.

Sample Input 9 3 8 2 7 1

Sample Output 1 9 3 8 2 7

139.Write a program to add two numbers.

140.Write a program to add two numbers (Input collect from user).

141.Write a program to create Simple Calculator.

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142.Write a program to find cube of any number using function.

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143.Write a program to find diameter, circumference, and area of circle.

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144.Write a program to find maximum and minimum between two numbers.

145.Write a program to check whether a number is even or odd using functions.

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146.Write a program to check whether a number is prime, Armstrong or perfect number.

147.Write a program to find all prime numbers between given interval.

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148.Write a program to print all strong numbers between given interval.

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149.Write a program to print all Armstrong numbers between given intervals.

150.Write a program to perform manipulation of matrix using different module as follows -

Addition () -> to make addition of two matrix.

Subtraction () -> to make subtraction of two matrix.

Multiplication () -> to multiply two matrices.

Transpose () -> to transpose the 1st matrix.

Print () -> print any matrix.

You are advised to develop such a program which will be controlled by the input.