Q) Write a ‘C’ Program to Print an Integer and Character entered By the User.

SOURCE CODE:

main.c

```c
#include <stdio.h>

int main() {
    int num;
    char ch;

    printf("Enter an integer: ");
    scanf("%d", &num);

   getchar();

    printf("Enter a character: ");
    scanf("%c", &ch);

    printf("entered integer value: %d\n", num);
    printf("entered character: %c\n", ch);

    return 0;
}
```

Input & Output:

```
Enter an integer: 5
Enter a character: h
entered integer value: 5
entered character: h


...Program finished with exit code 0
Press ENTER to exit console.
```

Q) Write a ‘C’ Program to Multiply two Floating-Point Numbers.

SOURCE CODE:

main.c

```c
#include<stdio.h>

int main()
{
    float num1, num2 ;

    printf("Enter two floating-point numbers:\n ");
    scanf("%f %f", &num1, &num2);

    printf("Product = %.2f\n", num1*num2);

    return 0;
}
```

Input & Output:

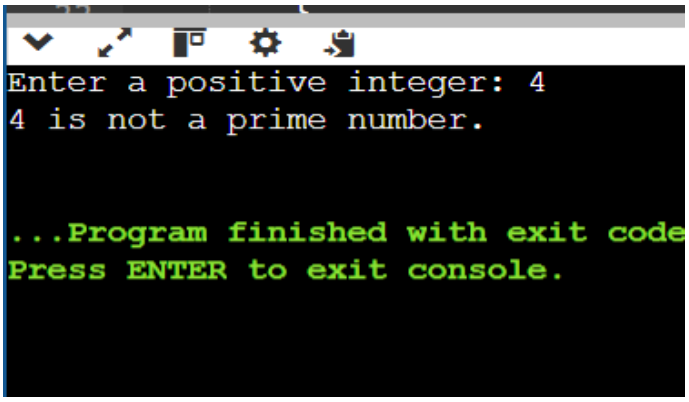
```
Enter two floating-point numbers:
 17.4 21.6
Product = 375.84


...Program finished with exit code 0
Press ENTER to exit console.
```

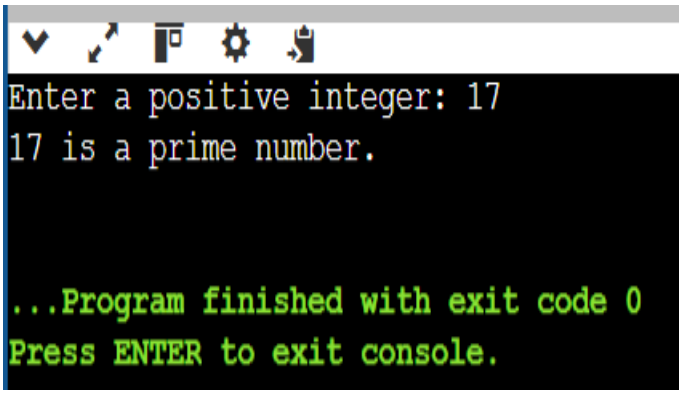
Q) Write a ‘C’ Program to Print to Check Whether a Number is Prime or Not.

SOURCE CODE:

```c
#include<stdio.h>

int main() {
    int num, i, isPrime = 1;

    printf("Enter a positive integer: ");
    scanf("%d", &num);

    if (num <= 1) {
        isPrime = 0;
    } else if (num == 2) {
        isPrime = 1;
    } else if (num % 2 == 0) {
        isPrime = 0;
    } else {

        for (i = 3; i * i <= num; i += 2) {
            if (num % i == 0) {
                isPrime = 0;
                break;
            }
        }
    }
    if (isPrime) {
        printf("%d is a prime number.\n", num);
    } else {
        printf("%d is not a prime number.\n", num);
    }
    return 0;
}
```

Input & Output:



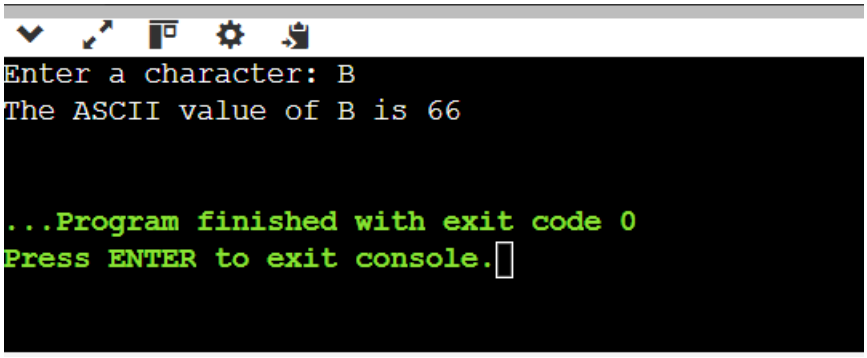


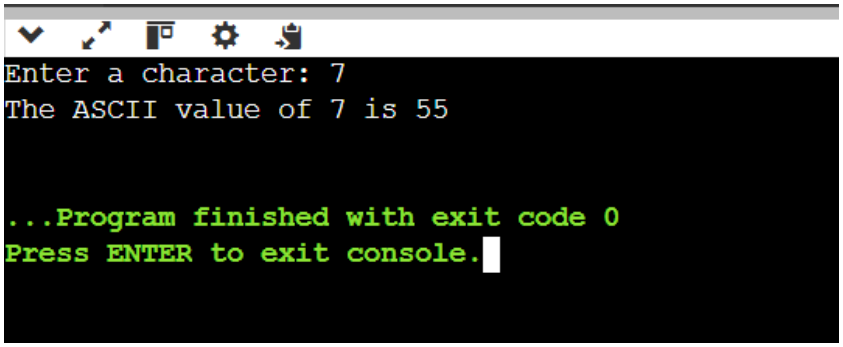
Q) Write a ‘C’ Program to Print C Program to Print the ASCII Value of a Character.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    char ch;

    printf("Enter a character: ");
    scanf("%c", &ch);

    printf("The ASCII value of %c is %d\n", ch, ch);

    return 0;
}
```

Input & Output:





Q) Write a ‘C’ Program to Swap Two Numbers.

SOURCE CODE:

```c
#include <stdio.h>

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

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

    printf("Enter second number: ");
    scanf("%d", &b);

    temp = a;
    a = b;
    b = temp;

    printf("After swapping:\n");
    printf("First number = %d\n", a);
    printf("Second number = %d\n", b);

    return 0;
}
```

Input & Output:

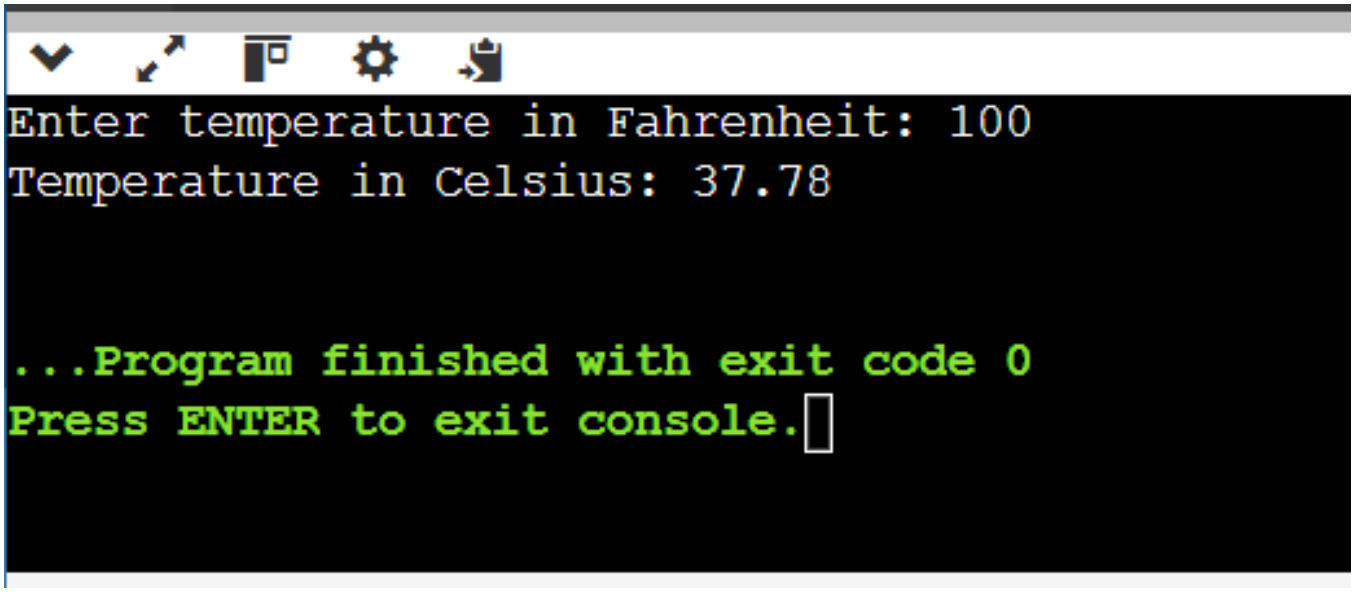
```
Enter first number: 17
Enter second number: 18
After swapping:
First number = 18
Second number = 17


...Program finished with exit code 0
```

Q) Write a ‘C’ Program to Calculate Fahrenheit to Celsius.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    float fahrenheit, celsius;

    printf("Enter temperature in Fahrenheit: ");
    scanf("%f", &fahrenheit);

    celsius = (fahrenheit - 32) * 5 / 9;

    printf("Temperature in Celsius: %.2f\n", celsius);

    return 0;
}
```

Input & Output:

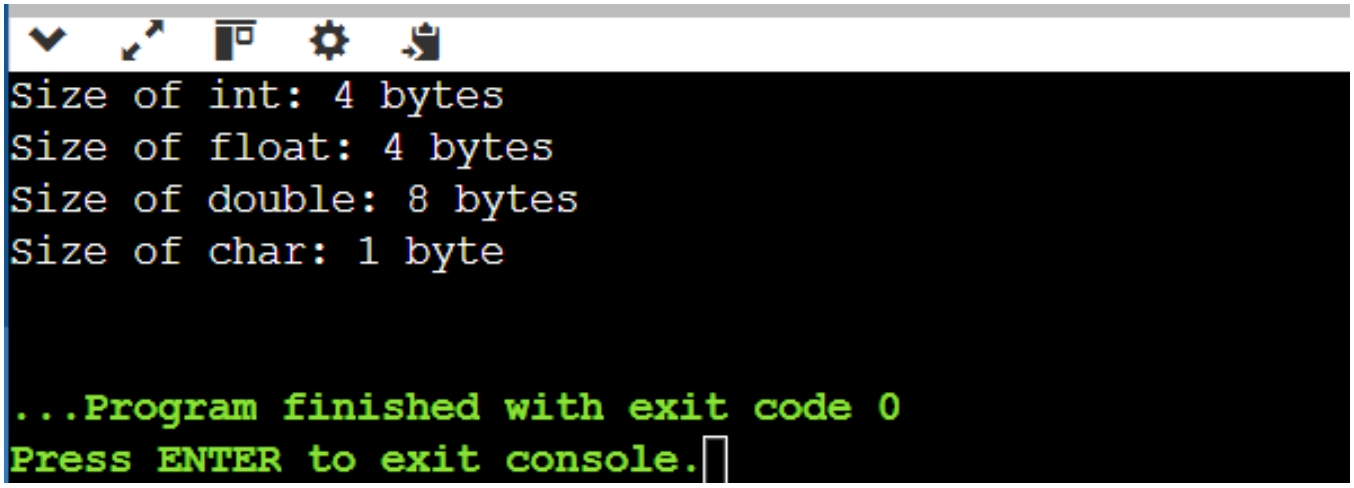


Q) Write a ‘C’ to Find the Size of int, float, double, and char.

SOURCE CODE:

```c
#include <stdio.h>

int main()
{
    printf("Size of int: %lu bytes\n", sizeof(int));
    printf("Size of float: %lu bytes\n", sizeof(float));
    printf("Size of double: %lu bytes\n", sizeof(double));
    printf("Size of char: %lu byte\n", sizeof(char));
    return 0;
}

```

Input & Output:



Q) Write a ‘C’ to Print Prime Numbers From 1 to N.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int n, i, j, isPrime;
    printf("Enter the value of N: ");
    scanf("%d", &n);

    printf("Prime numbers from 1 to %d are:\n", n);

    for(i = 2; i <= n; i++) {
        isPrime = 1; // Assume i is prime
        for(j = 2; j <= i/2; j++) {
            if(i % j == 0) {
                isPrime = 0; // i is not prime
                break;
            }
        }
        if(isPrime == 1) {
            printf("%d ", i);
        }
    }

    return 0;
}
```

Input & Output:

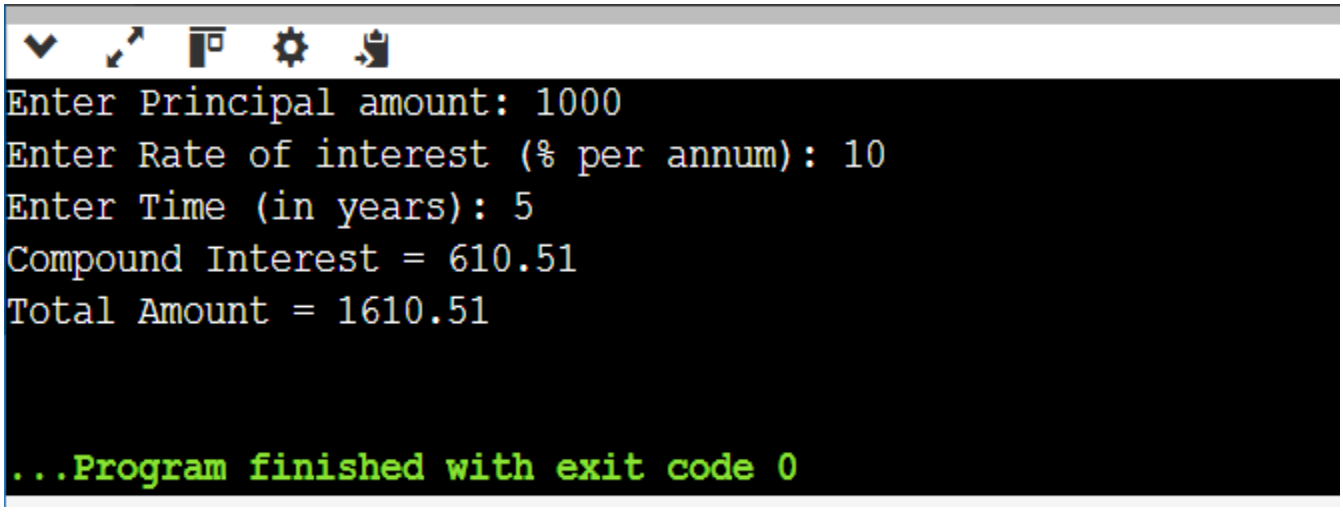
```
Enter the value of N: 51
Prime numbers from 1 to 51 are:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47

...Program finished with exit code 0
Press ENTER to exit console.
```

Q) Write a ‘C’ to Find Compound Interest.

SOURCE CODE:

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

int main()
{
    float principal, rate, time, compoundInterest, amount;

    printf("Enter Principal amount: ");
    scanf("%f", &principal);

    printf("Enter Rate of interest (%% per annum): ");
    scanf("%f", &rate);

    printf("Enter Time (in years): ");
    scanf("%f", &time);

    amount = principal * pow((1 + rate / 100), time);
    compoundInterest = amount - principal;

    printf("Compound Interest = %.2f\n", compoundInterest);
    printf("Total Amount = %.2f\n", amount);

    return 0;
}

```

Input & Output:



Q) Write a ‘C’ for Area and Perimeter of Rectangle.

SOURCE CODE:

```c
#include<stdio.h>

int main()
{

    float length, bredth;

    printf("Enter Length of Rectangle: ");
    scanf("%f", &length);

    printf("Enter Bredth of Rectangle: ");
    scanf("%f", &bredth);

    printf("Area of Rectangle = %f \n", length*bredth);

    printf("Perimeter of Rectangle = %f", 2*(length+bredth));

    return 0;
}
```

Input & Output:

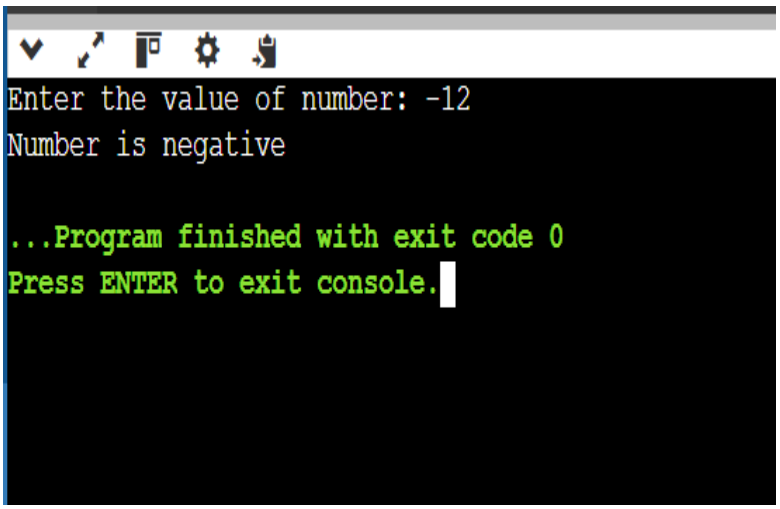
```
Enter Length of Rectangle: 5.2
Enter Bredth of Rectangle: 4.8
Area of Rectangle = 24.960001
Perimeter of Rectangle = 20.000000

...Program finished with exit code 0
Press ENTER to exit console.
```

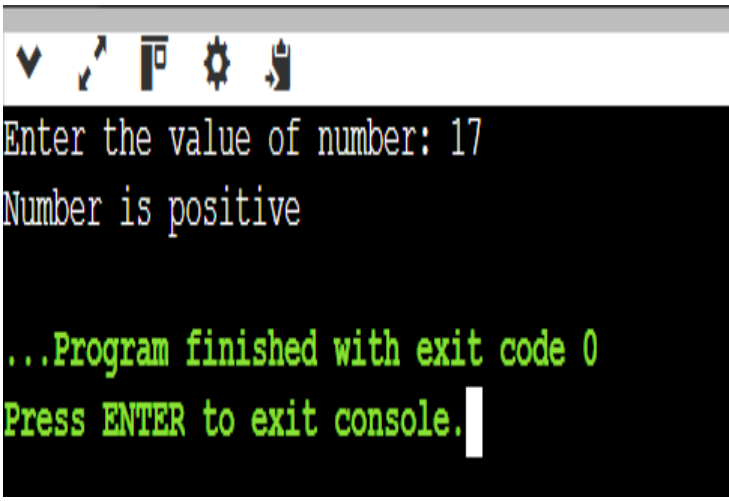
Q) Write a ‘C’ Program to Check Whether a Number is Positive, Negative, or Zero.

SOURCE CODE:

```c
#include<stdio.h>

int main()
{
    int num;

    printf("Enter the value of number: ");
    scanf("%d", &num);

    if(num>0){
        printf("Number is positive");
    }
    else if(num<0){
        printf("Number is negative");
    }
    else {
        printf("Number is Zero");
    }

    return 0;
}
```

Input & Output:



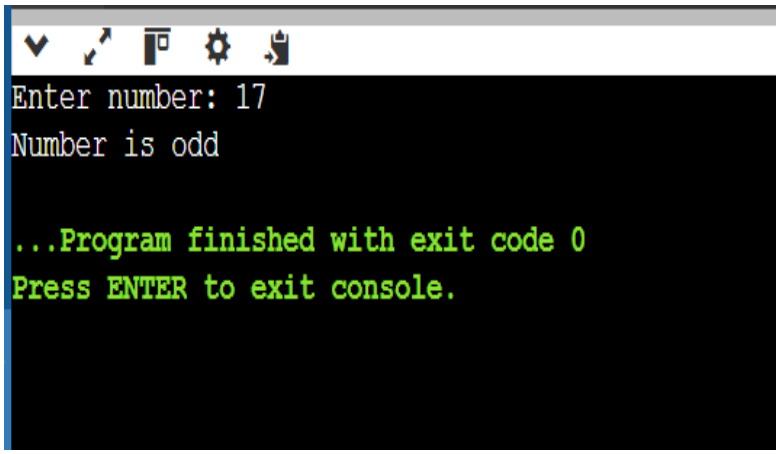


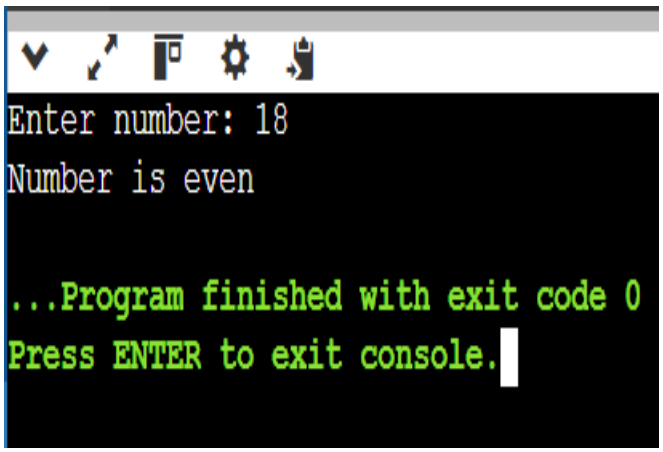
Q) Write a ‘C’ Program to Check Whether Number is Even or Odd.

SOURCE CODE:

```c
#include<stdio.h>

int main()
{
    int num;;

    printf("Enter number: ");
    scanf("%d", &num);

    if(num%2==0){
        printf("Number is even");
    }
    else{
        printf("Number is odd");
    }

    return 0;
}
```

Input & Output:



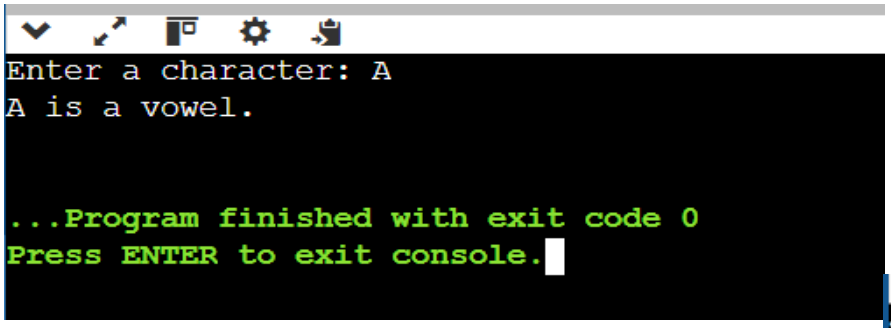


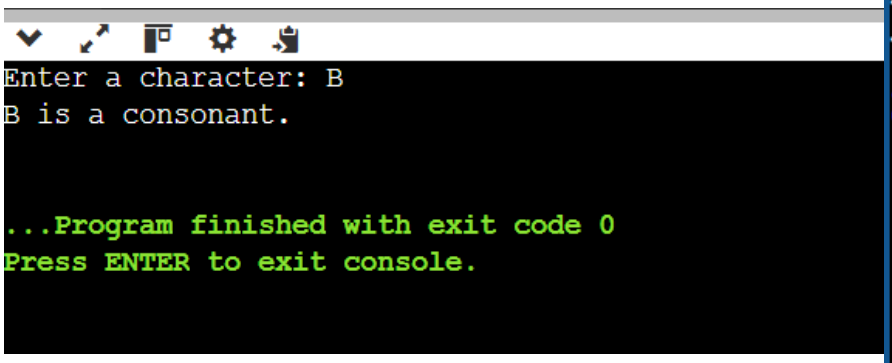
Q) Write a ‘C’ Program to Check Whether a Character is Vowel or Consonant.

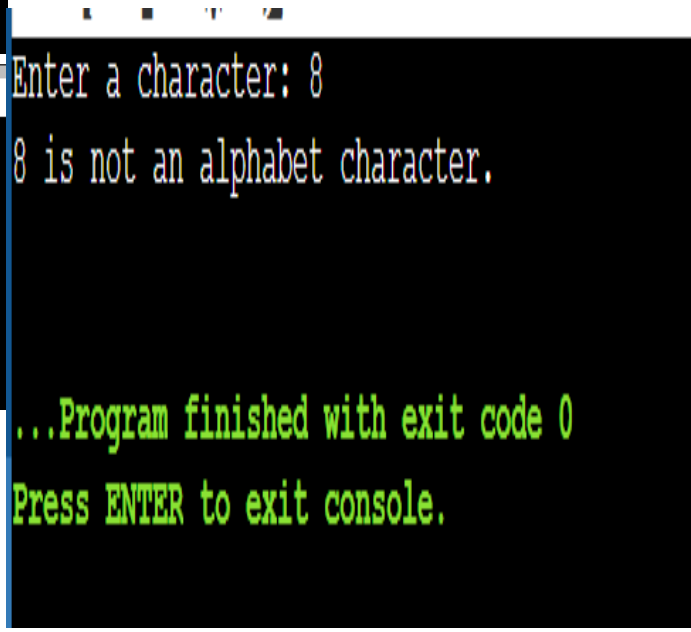
SOURCE CODE:

```c
#include <stdio.h>

int main() {
    char ch;
    printf("Enter a character: ");
    scanf("%c", &ch);

    if (ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U' ||
        ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
        printf("%c is a vowel.\n", ch);
    } else if ((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {
        printf("%c is a consonant.\n", ch);
    } else {
        printf("%c is not an alphabet character.\n", ch);
    }

    return 0;
}

```

Input & Output:





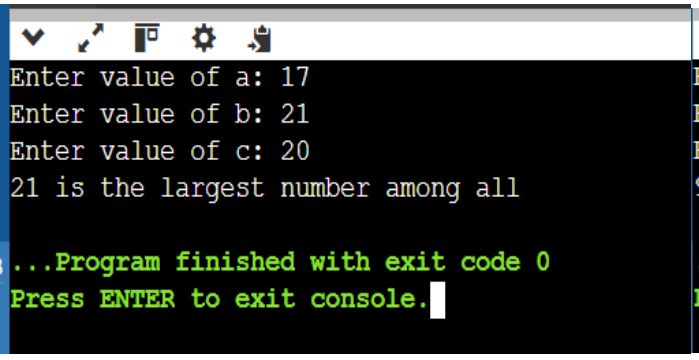


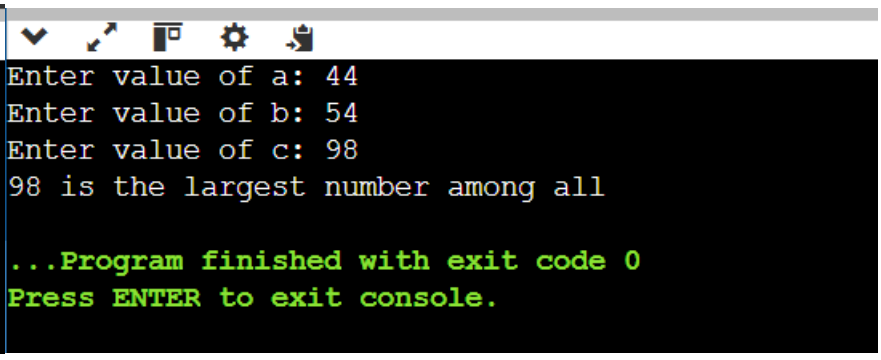
Q) Write a ‘C’ Program to Find Largest Number Among Three Numbers.

SOURCE CODE:

```c
#include <stdio.h>

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

    printf("Enter value of a: ");
    scanf("%d", &a);

    printf("Enter value of b: ");
    scanf("%d", &b);

    printf("Enter value of c: ");
    scanf("%d", &c);

    if (a >= b && a >= c) {
        printf("%d is the largest number.\n", a);
    }
    else if (b >= a && b >= c) {
        printf("%d is the largest number.\n", b);
    }
    else {
        printf("%d is the largest number.\n", c);
    }

    return 0;
}
```

Input & Output:





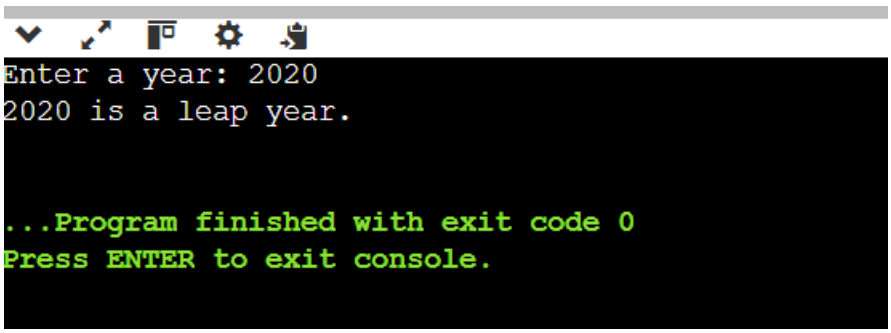
Q)Write a ‘C’ Program to Check Leap Year.

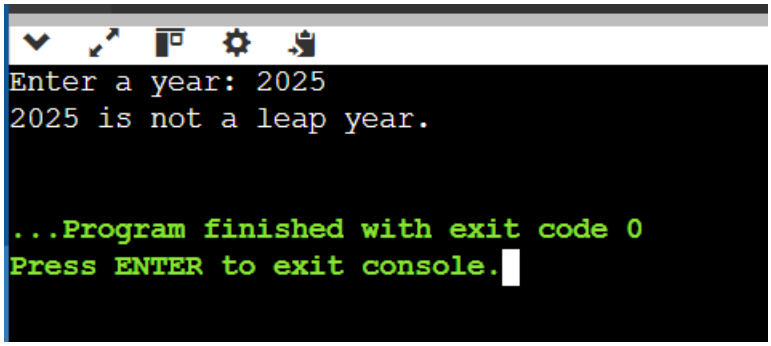
SOURCE CODE:

main.c

```c
#include <stdio.h>

int main() {
    int year;

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

    if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
        printf("%d is a leap year.\n", year);
    } else {
        printf("%d is not a leap year.\n", year);
    }

    return 0;
}

```

INPUT & OUTPUT



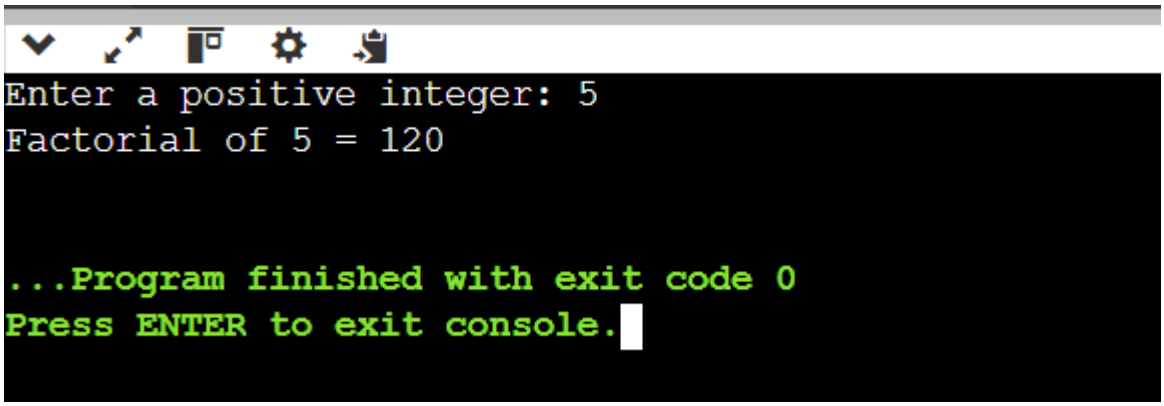


Q) Write a ‘C’ Program to Find Factorial of a Number.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int n, i;
    unsigned long long factorial = 1;

    printf("Enter a positive integer: ");
    scanf("%d", &n);

    if (n < 0) {
        printf("Factorial is not defined for negative numbers.\n");
    } else {
        for (i = 1; i <= n; ++i) {
            factorial *= i; // Multiply and store result
        }
        printf("Factorial of %d = %llu\n", n, factorial);
    }

    return 0;
}
```

INPUT & OUTPUT:

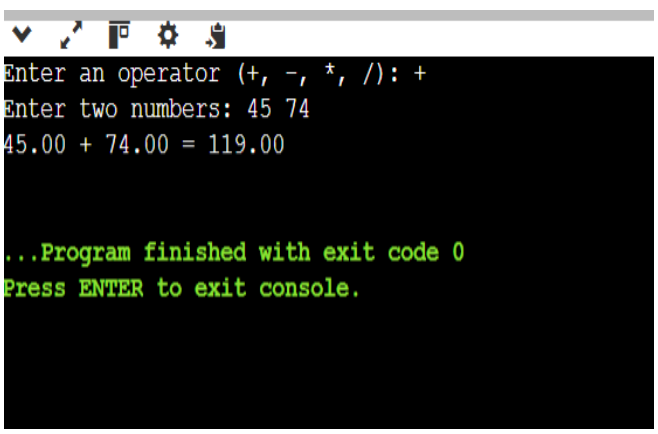


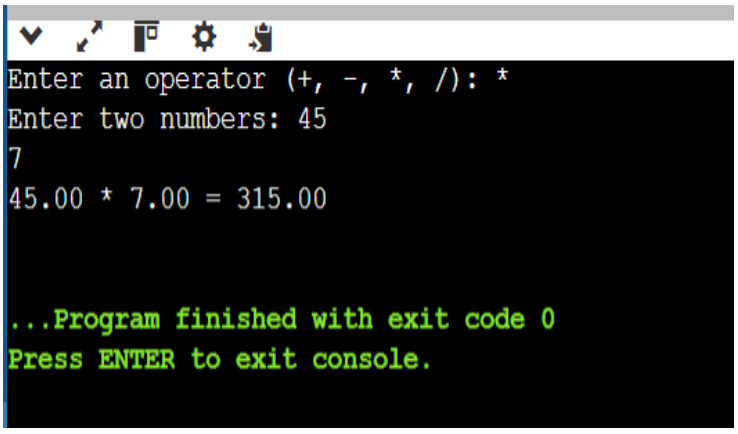
Q) Write a ‘C’ Program to Make a Simple Calculator.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    char operator;
    double num1, num2, result;

    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &operator);
    printf("Enter two numbers: ");
    scanf("%lf %lf", &num1, &num2);

    switch (operator) {
        case '+':
            result = num1 + num2;
            printf("%.2lf + %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '-':
            result = num1 - num2;
            printf("%.2lf - %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '*':
            result = num1 * num2;
            printf("%.2lf * %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '/':
            if (num2 != 0) {
                result = num1 / num2;
                printf("%.2lf / %.2lf = %.2lf\n", num1, num2, result);
            } else {
                printf("Error! Division by zero is not allowed.\n");
            }
            break;
        default:
            printf("Invalid operator.\n");
    }

    return 0;
}
```

INPUT & OUTPUT:



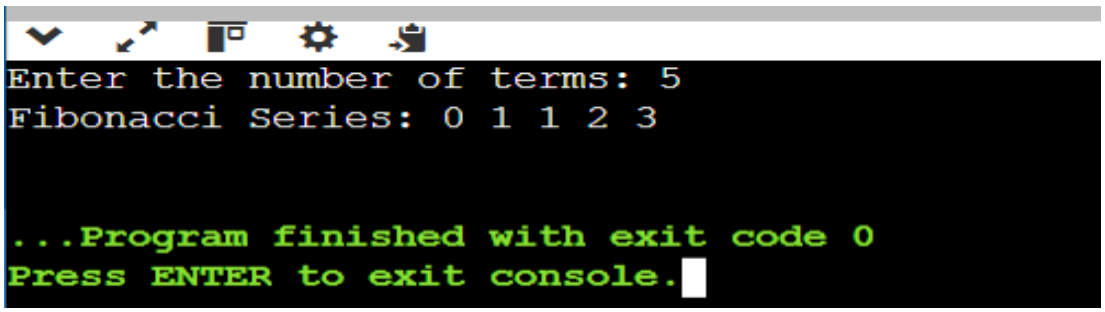


Q) Write a ‘C’ Program to Print Fibonacci Series

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int n, i;
    int first = 0, second = 1, next;

    printf("Enter the number of terms: ");
    scanf("%d", &n);

    printf("Fibonacci Series: ");

    for (i = 0; i < n; i++) {
        if (i == 0) {
            printf("%d ", first);
        } else if (i == 1) {
            printf("%d ", second);
        } else {
            next = first + second;
            printf("%d ", next);
            first = second;
            second = next;
        }
    }

    printf("\n");

    return 0;
}
```

INPUT & OUTPUT:



Q).Write a 'C' Program to Check Whether a Number is Prime or Not.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int n, i, isPrime = 1;

    printf("Enter a positive integer: ");
    scanf("%d", &n);

    if (n <= 1) {
        isPrime = 0;
    } else {
        for (i = 2; i <= n / 2; ++i) {
            if (n % i == 0) {
                isPrime = 0;
                break;
            }
        }
    }

    if (isPrime)
        printf("%d is a prime number.\n", n);
    else
        printf("%d is not a prime number.\n", n);

    return 0;
}
```

INPUT & OUTPUT:

```
Enter a positive integer: 4
4 is not a prime number.


...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter a positive integer: 5
5 is a prime number.


...Program finished with exit code 0
Press ENTER to exit console.
```

Q) Write a ‘C’ Program to Print a 2D Array elements

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int rows, cols, i, j;

 printf("Enter the number of rows: ");
    scanf("%d", &rows);
    printf("Enter the number of columns: ");
    scanf("%d", &cols);

    int arr[rows][cols];

    printf("Enter elements of the array:\n");
    for (i = 0; i < rows; i++) {
        for (j = 0; j < cols; j++) {
            printf("Element at [%d][%d]: ", i, j);
            scanf("%d", &arr[i][j]);
        }
    }

    printf("The 2D array is:\n");
    for (i = 0; i < rows; i++) {
        for (j = 0; j < cols; j++) {
            printf("%d ", arr[i][j]);
        }
        printf("\n");
    }

    return 0;
}
```

INPUT & OUTPUT:

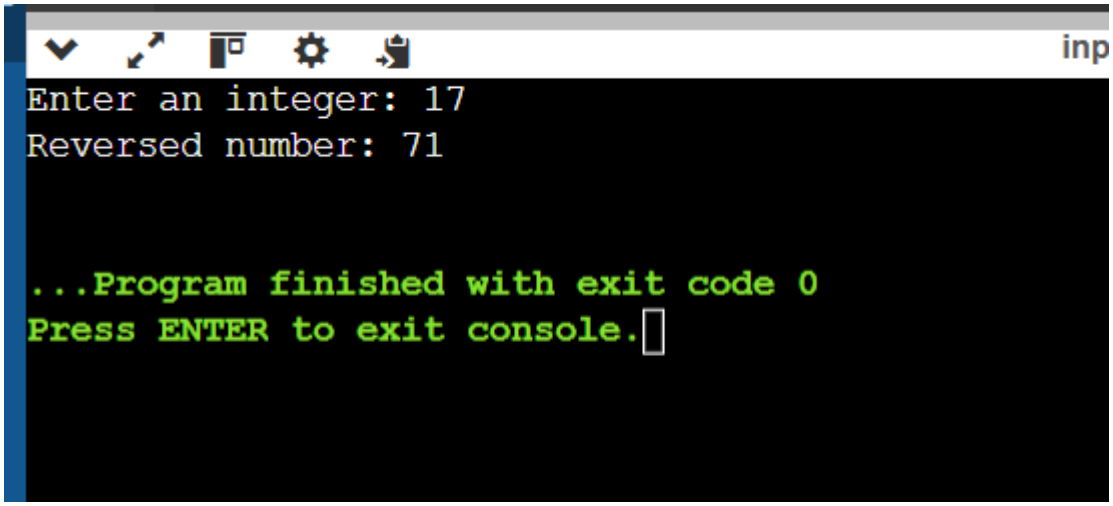
```
Enter the number of rows: 2
Enter the number of columns: 2
Enter elements of the array:
Element at [0][0]: 2
Element at [0][1]: 3
Element at [1][0]: 4
Element at [1][1]: 5
The 2D array is:
2 3
4 5


...Program finished with exit code 0
Press ENTER to exit console.
```

Q) Write a ‘C’ program to print the reverse of a given number

SOURCE CODE

```c
#include <stdio.h>
int main() {
    int num, rev = 0, rem;
    printf("Enter an integer: ");
    scanf("%d", &num);
    while (num != 0) {
        rem = num % 10;
        rev = rev * 10 + rem;
        num = num / 10;
    }
    printf("Reversed number: %d\n", rev);
    return 0;
}
```

INPUT & OUTPUT:



Q) Write a ‘C’ Program to Find All Factors of a Natural Number.

SOURCE CODE:

```c
#include <stdio.h>

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

    printf("Factors of %d are: ", num);
    for(i = 1; i <= num; i++) {
        if(num % i == 0) {
            printf("%d ", i);
        }
    }
    return 0;
}
```

INPUT & OUTPUT:

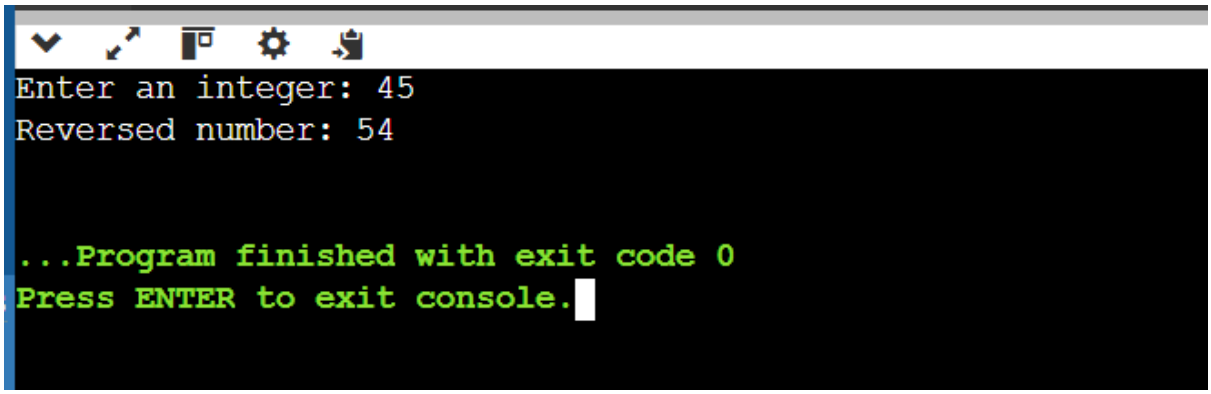
```
Enter a natural number: 8
Factors of 8 are: 1 2 4 8

...Program finished with exit code 0
Press ENTER to exit console.
```

Q).Write a ‘C’ Program to Reverse a Number

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int num, reversed = 0, remainder;
    printf("Enter an integer: ");
    scanf("%d", &num);

    while(num != 0) {
        remainder = num % 10;
        reversed = reversed * 10 + remainder;
        num = num / 10;
    }

    printf("Reversed number: %d\n", reversed);
    return 0;
}
```

INPUT & OUTPUT:

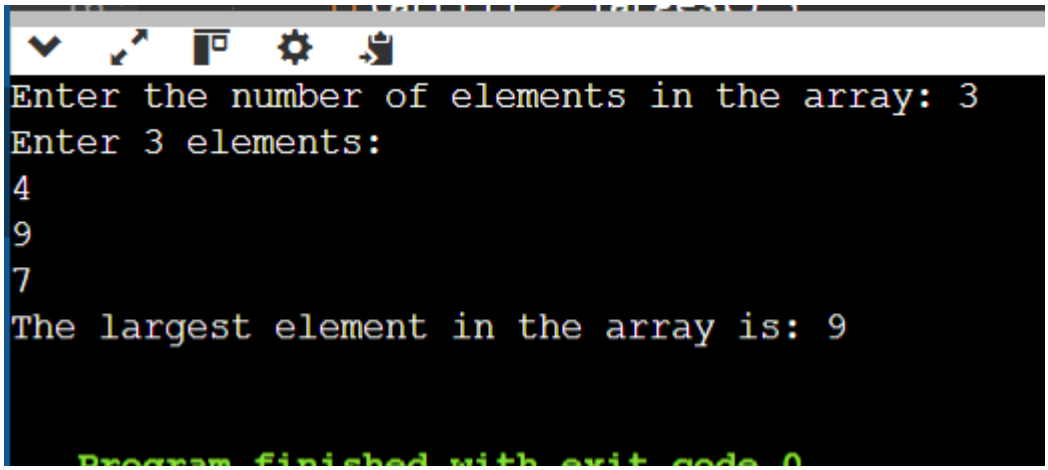


Q) Write a ‘C’Program to Find the Largest Element in an Array.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int n, i, largest;
    printf("Enter the number of elements in the array: ");
    scanf("%d", &n);

    int arr[n];
    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    largest = arr[0];
    for(i = 1; i < n; i++) {
        if(arr[i] > largest) {
            largest = arr[i];
        }
    }

    printf("The largest element in the array is: %d\n", largest);
    return 0;
}
```

INPUT & OUTPUT:

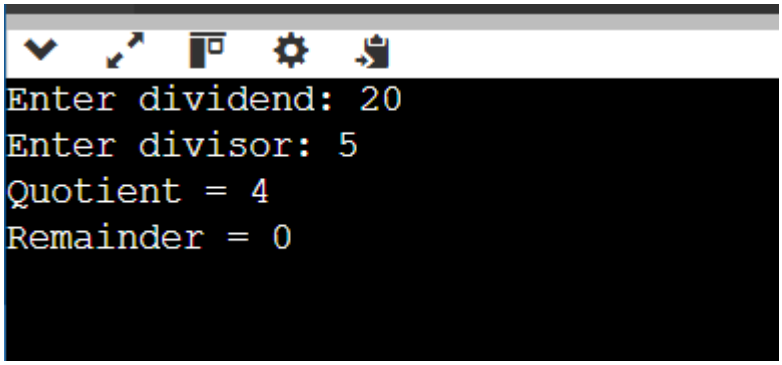


Q) Write a 'C' program to calculate the quotient and remainder of a number.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int dividend, divisor, quotient, remainder;

    printf("Enter dividend: ");
    scanf("%d", &dividend);

    printf("Enter divisor: ");
    scanf("%d", &divisor);

    quotient = dividend / divisor;
    remainder = dividend % divisor;

    printf("Quotient = %d\n", quotient);
    printf("Remainder = %d\n", remainder);

    return 0;
}
```

INPUT & OUTPUT:

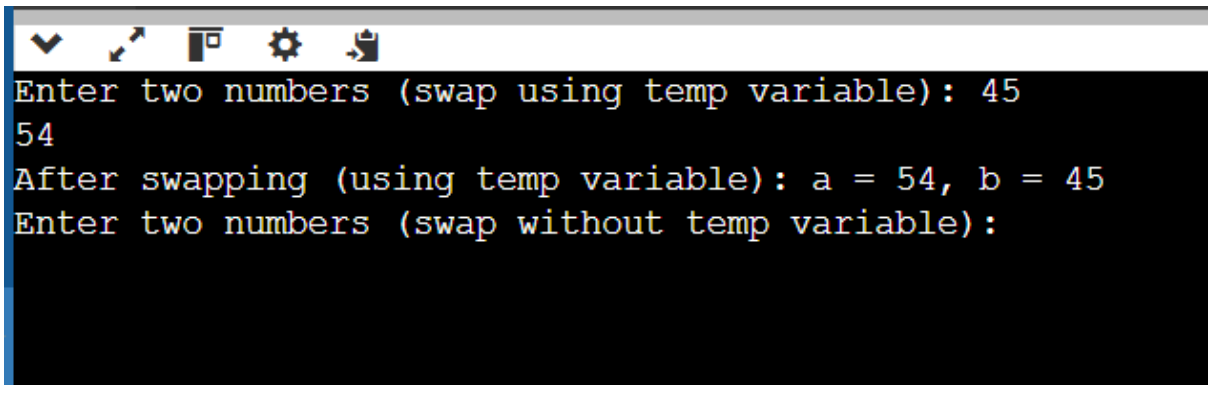


Q) Write a ‘C’ program for swapping two numbers either using a temporary variable or without a temporary variable.

SOURCE CODE:

```c
#include <stdio.h>

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

    printf("Enter two numbers (swap using temp variable): ");
    scanf("%d %d", &a, &b);

    temp = a;
    a = b;
    b = temp;

    printf("After swapping (using temp variable): a = %d, b = %d\n", a, b);

    printf("Enter two numbers (swap without temp variable): ");
    scanf("%d %d", &a, &b);

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

    printf("After swapping (without temp variable): a = %d, b = %d\n", a, b);

    return 0;
}
```

INPUT & OUTPUT:

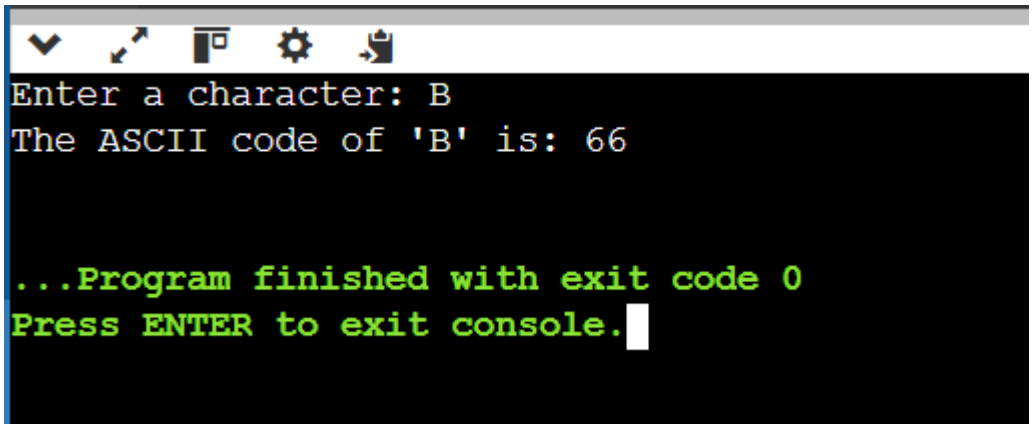


Q) Write a ‘C’ program to print the ASCII code of a character.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    char ch;
    printf("Enter a character: ");
    scanf("%c", &ch);

    printf("The ASCII code of '%c' is: %d\n", ch, ch);

    return 0;
}
```

INPUT & OUTPUT:

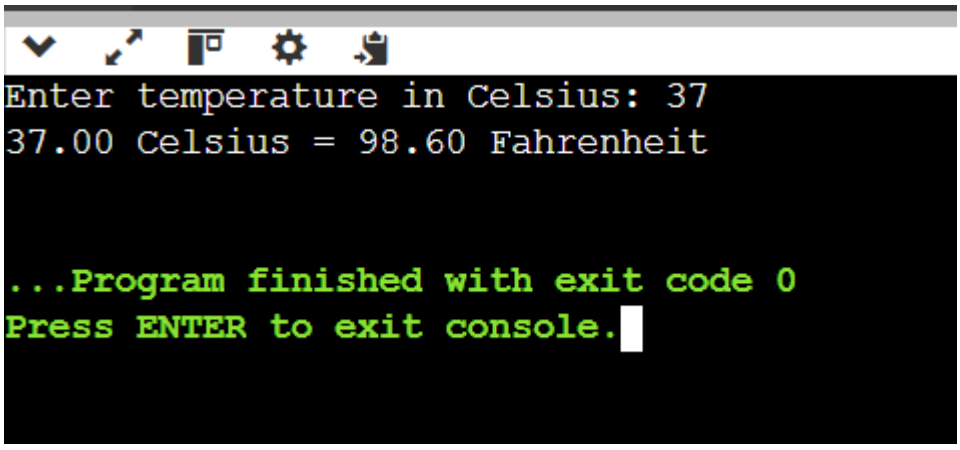


Q) Write a ‘C’ program to convert degree Celsius to degree Fahrenheit.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    float celsius, fahrenheit;

    printf("Enter temperature in Celsius: ");
    scanf("%f", &celsius);

    fahrenheit = (celsius * 9 / 5) + 32;

    printf("%.2f Celsius = %.2f Fahrenheit\n", celsius, fahrenheit);

    return 0;
}
```

INPUT & OUTPUT:

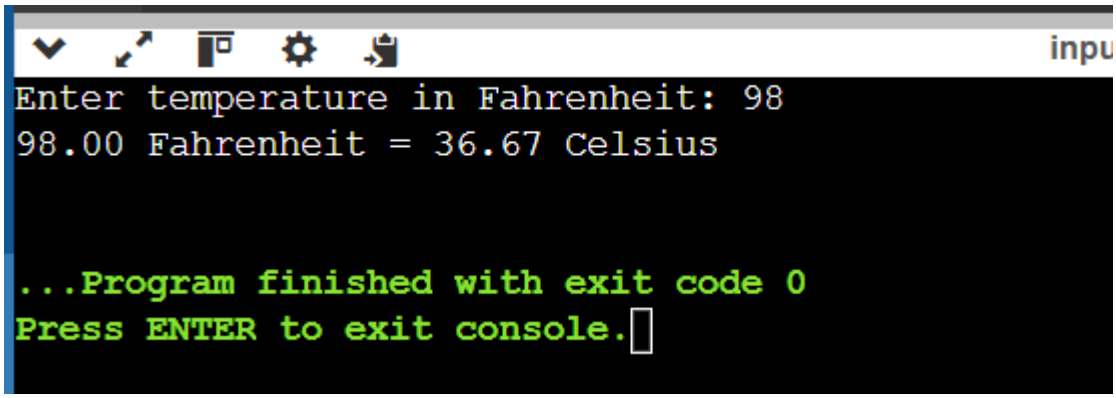


Q) Write a ‘C’ program to convert temperature in fahrenheit into degree Celsius

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    float fahrenheit, celsius;

    printf("Enter temperature in Fahrenheit: ");
    scanf("%f", &fahrenheit);

    celsius = (fahrenheit - 32) * 5 / 9;

    printf("%.2f Fahrenheit = %.2f Celsius\n", fahrenheit, celsius);

    return 0;
}
```

INPUT & OUTPUT:

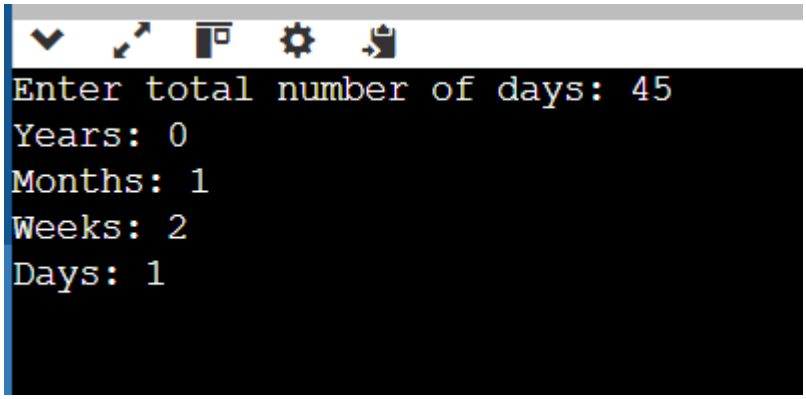


Q) Write a ‘C’ program to convert days into years , months, weeks and left days

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int days, years, months, weeks, remaining_days;

    printf("Enter total number of days: ");
    scanf("%d", &days);

    years = days / 365;
    days = days % 365;

    months = days / 30;
    days = days % 30;

    weeks = days / 7;
    remaining_days = days % 7;

    printf("Years: %d\n", years);
    printf("Months: %d\n", months);
    printf("Weeks: %d\n", weeks);
    printf("Days: %d\n", remaining_days);

    return 0;
}
```

INPUT & OUTPUT:

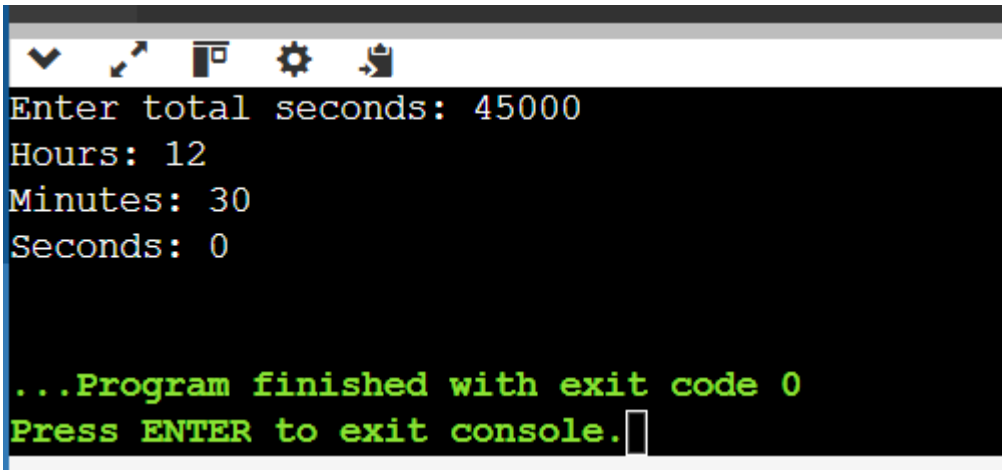


Q) Write a ‘C’ program to convert seconds into hours , minutes and seconds.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int total_seconds, hours, minutes, seconds;

    printf("Enter total seconds: ");
    scanf("%d", &total_seconds);

    hours = total_seconds / 3600;
    total_seconds = total_seconds % 3600;

    minutes = total_seconds / 60;
    seconds = total_seconds % 60;

    printf("Hours: %d\n", hours);
    printf("Minutes: %d\n", minutes);
    printf("Seconds: %d\n", seconds);

    return 0;
}
```

INPUT & OUTPUT:

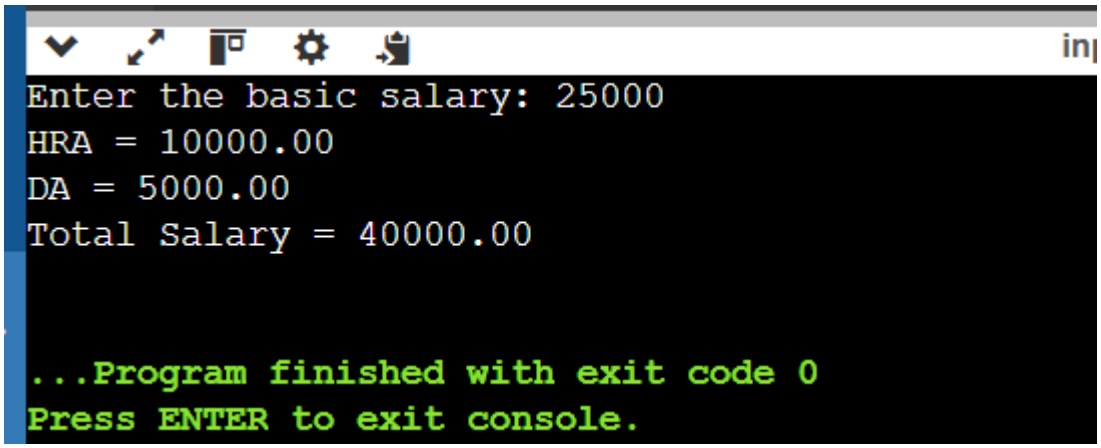


Q) Write a ‘C’ program to calculate the total salary where HRA=40% of basic salary and DA=20% of basic salary.

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    float basic_salary, hra, da, total_salary;

    printf("Enter the basic salary: ");
    scanf("%f", &basic_salary);

    hra = 0.40 * basic_salary;
    da = 0.20 * basic_salary;
    total_salary = basic_salary + hra + da;

    printf("HRA = %.2f\n", hra);
    printf("DA = %.2f\n", da);
    printf("Total Salary = %.2f\n", total_salary);

    return 0;
}
```

INPUT & OUTPUT:

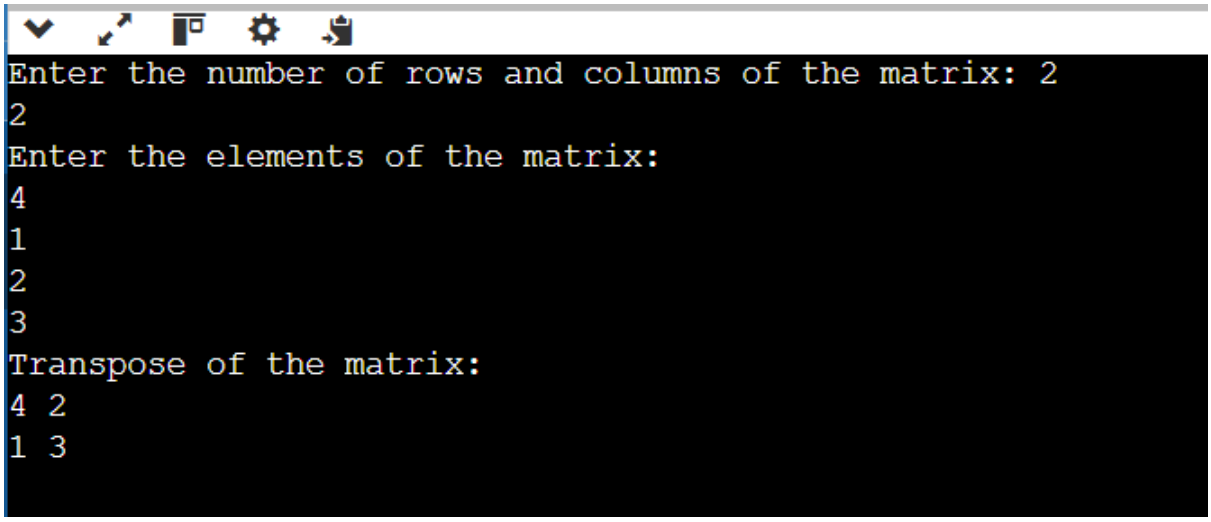


Q) Write a ‘C’ Program to Find the Transpose

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int rows, cols, i, j;

    printf("Enter the number of rows and columns of the matrix: ");
    scanf("%d %d", &rows, &cols);

    int matrix[rows][cols], transpose[cols][rows];

    printf("Enter the elements of the matrix:\n");
    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            scanf("%d", &matrix[i][j]);
        }
    }

    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            transpose[j][i] = matrix[i][j];
        }
    }

    printf("Transpose of the matrix:\n");
    for(i = 0; i < cols; i++) {
        for(j = 0; j < rows; j++) {
            printf("%d ", transpose[i][j]);
        }
        printf("\n");
    }

    return 0;
}
```

INPUT & OUTPUT:



Q) Write a ‘C’ Program to Find the Determinant of a Matrix

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int i, j;
    int matrix[3][3];
    int determinant;

    printf("Enter elements of 3x3 matrix:\n");
    for(i = 0; i < 3; i++) {
        for(j = 0; j < 3; j++) {
            scanf("%d", &matrix[i][j]);
        }
    }
    determinant = matrix[0][0] * (matrix[1][1]*matrix[2][2] - matrix[1][2]*matrix[2][1])
                - matrix[0][1] * (matrix[1][0]*matrix[2][2] - matrix[1][2]*matrix[2][0])
                + matrix[0][2] * (matrix[1][0]*matrix[2][1] - matrix[1][1]*matrix[2][0]);

    printf("Determinant of the matrix = %d\n", determinant);

    return 0;
}
```

INPUT & OUTPUT:

```
Enter elements of 3x3 matrix:
4 5 6
4 7 8
2 5 0
Determinant of the matrix = -44


...Program finished with exit code 0
```

Q) Write a ‘C’ Program to Add Two Matrices

SOURCE CODE:

```c
#include <stdio.h>

int main() {
    int rows, cols, i, j;
    printf("Enter the number of rows and columns of the matrices: ");
    scanf("%d %d", &rows, &cols);

    int matrix1[rows][cols], matrix2[rows][cols], sum[rows][cols];

    printf("Enter elements of first matrix:\n");
    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            scanf("%d", &matrix1[i][j]);
        }
    }

    printf("Enter elements of second matrix:\n");
    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            scanf("%d", &matrix2[i][j]);
        }
    }

    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            sum[i][j] = matrix1[i][j] + matrix2[i][j];
        }
    }

    printf("Sum of the two matrices:\n");
    for(i = 0; i < rows; i++) {
        for(j = 0; j < cols; j++) {
            printf("%d ", sum[i][j]);
        }
        printf("\n");
    }
```

INPUT & OUTPUT:

```
Enter the number of rows and columns of the matrices: 2 2
Enter elements of first matrix:
4 5
1 2
Enter elements of second matrix:
8 9
2 3
Sum of the two matrices:
12 14
3 5
```

Question:

Write a 'C' program that uses both pre-increment (++a) and post-increment (a++) operators.

Source code:

```c
#include<stdio.h>
int main(){
    int a=5;
    int b;
    printf("intial the value of a:%d\n",a);
    //post increment
    b=a++;
    printf("value of b after b=a++: %d\n",b);
    printf("value of a after a++: %d\n",a);

    // reset a
    a=5;
    printf("\nintial value of a :%d\n",a);
    //pre increment
    b=++a;
    printf("value of b after b=++a: %d\n",b);
    printf("value of a after ++a: %d\n",a);
    return 0;
}
```

Input and output:

```
intial value of a :5
value of b after b=++a: 6
value of a after ++a: 6


...Program finished with exit code 0
Press ENTER to exit console.
```

Question:

Write a 'C' program that performs BITWISE AND (&), OR (|), AND XOR (^), operations on two numbers and prints the results.

Source code:

```c
#include<stdio.h>
int main() {
    int x = 12, y = 5;

    printf("x & y = %d\n", x & y);   // Bitwise AND
    printf("x | y = %d\n", x | y);   // Bitwise OR
    printf("x ^ y = %d\n", x ^ y);   // Bitwise XOR

    return 0;
}
```

Input and output:

```
x & y = 4
x | y = 13
x ^ y = 9


...Program finished with exit code 0
Press ENTER to exit console.
```

Question:

Write a ‘C’ program to implement bitwise shift operators (<<, >>).

Source code:

```c
#include<stdio.h>
int main() {
    int num = 8;

    printf("Left Shift (num << 1): %d\n", num << 1);  // 8 * 2 = 16
    printf("Right Shift (num >> 1): %d\n", num >> 1); // 8 / 2 = 4

    return 0;
}
```

Input and output:

```
Left Shift (num << 1): 16
Right Shift (num >> 1): 4


...Program finished with exit code 0
Press ENTER to exit console.
```

Question:

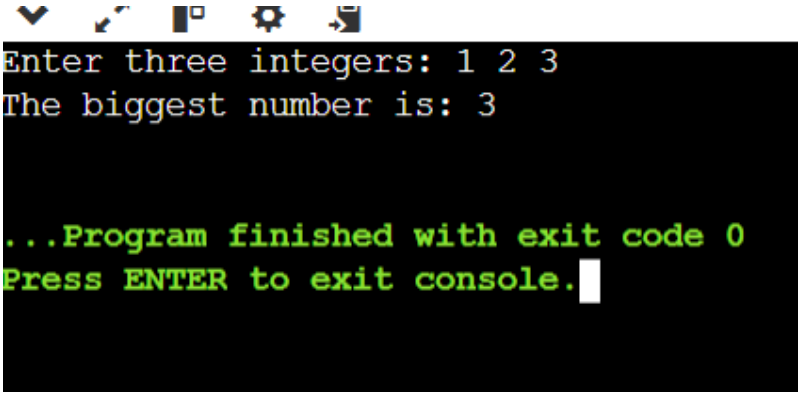
Write a ‘C’ program to perform a conditional Operator to find the biggest among three numbers.

Source code:

main.c

```c
#include <stdio.h>

int main() {
    int num1, num2, num3, biggest;

    printf("Enter three integers: ");
    scanf("%d %d %d", &num1, &num2, &num3);

    // Using nested conditional operators to find the biggest number
    biggest = (num1 > num2) ? ((num1 > num3) ? num1 : num3) : ((num2 > num3) ? num2 : num3);

    printf("The biggest number is: %d\n", biggest);

    return 0;
}
```

Input and output:



Question:

Write a ‘C’ program to implement relational and Logical operators.

Source code:

main.c

```c
#include <stdio.h>

int main() {
    int a = 10;
    int b = 20;
    int c = 10;
    int d = 0; // Represents false
    int e = 1; // Represents true

    printf("--- Relational Operators ---\n");

    // Equal to (==)
    printf("a == b: %d\n", a == b); // 0 (false)
    printf("a == c: %d\n", a == c); // 1 (true)

    // Not equal to (!=)
    printf("a != b: %d\n", a != b); // 1 (true)
    printf("a != c: %d\n", a != c); // 0 (false)

    // Greater than (>)
    printf("a > b: %d\n", a > b);   // 0 (false)
    printf("b > a: %d\n", b > a);   // 1 (true)

    // Less than (<)
    printf("a < b: %d\n", a < b);   // 1 (true)
    printf("b < a: %d\n", b < a);   // 0 (false)

```

Input and output: