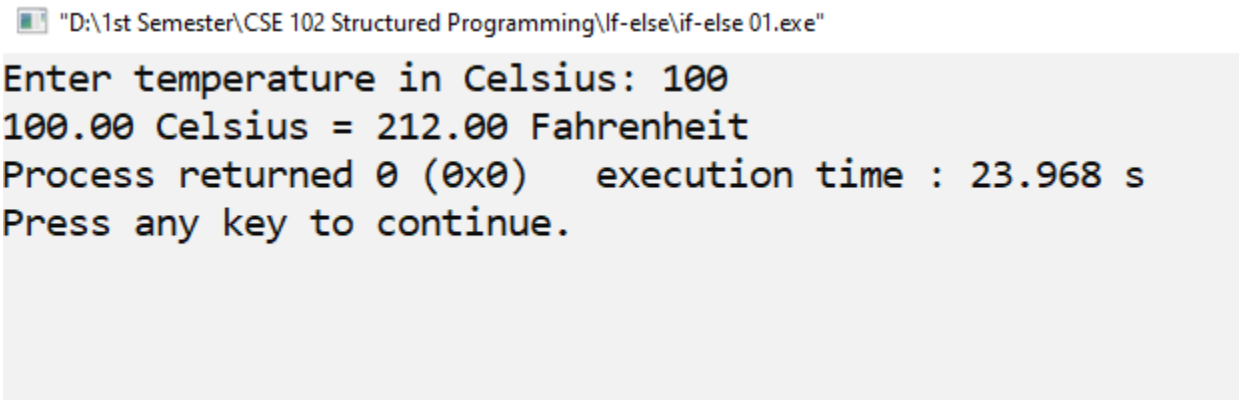
Lab Report 1

Question 01: Write a C program to input temperature to Centigrade and convert to 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", celsius, fahrenheit);
    return 0;
}
```

Output :

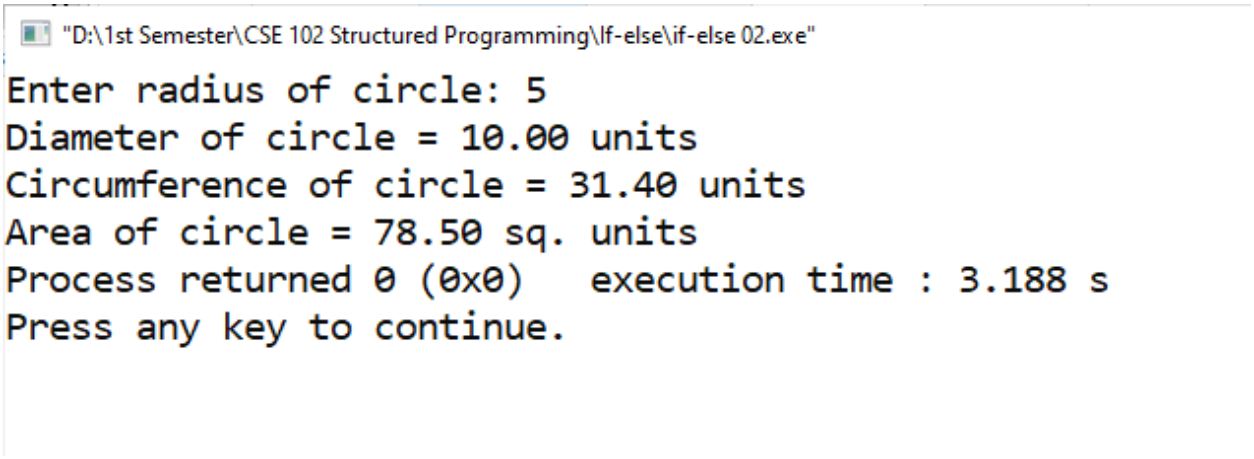


Question 02: Write a C program to input radius of a circle from user and find diameter, circumference and area of the circle.

Source Code :

```c
#include <stdio.h>

int main()
{
    float radius, diameter, circumference, area;
    printf("Enter radius of circle: ");
    scanf("%f", &radius);
    diameter = 2 * radius;
    circumference = 2 * 3.14 * radius;
    area = 3.14 * (radius * radius);
    printf("Diameter of circle = %.2f units \n", diameter);
    printf("Circumference of circle = %.2f units \n", circumference);
    printf("Area of circle = %.2f sq. units ", area);
    return 0;
}
```

Output :


"D:\1st Semester\CSE 102 Structured Programming\If-else\if-else 02.exe"
Enter radius of circle: 5
Diameter of circle = 10.00 units
Circumference of circle = 31.40 units
Area of circle = 78.50 sq. units
Process returned 0 (0x0)   execution time : 3.188 s
Press any key to continue.

Question 03: Write a C program to input any two numbers from user and swap values of both numbers using third variable, bitwise operator and arithmetic operators.

Source Code :

```c
#include <stdio.h>

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

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

    printf("Original values:\n");
    printf("a = %d, b = %d\n", a, b);

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

    x = a;
    y = b;
    x = x ^ y;
    y = x ^ y;
    x = x ^ y;
    printf("After swapping using bitwise operator:\n");
    printf("a = %d, b = %d\n", x, y);


    x = a;
    y = b;
    x = x + y;
    y = x - y;
    x = x - y;
    printf("After swapping using arithmetic operators:\n");
    printf("a = %d, b = %d\n", x, y);

    return 0;
}
```

Output :

```
"D:\1st Semester\CSE 102 Structured Programming\If-else\if-else 03.exe"
Enter two numbers: 2 3
Original values:
a = 2, b = 3
After swapping using third variable:
a = 3, b = 2
After swapping using bitwise operator:
a = 3, b = 2
After swapping using arithmetic operators:
a = 3, b = 2

Process returned 0 (0x0)   execution time : 2.947 s
Press any key to continue.
```

Question 04 Write a C program to find maximum between three numbers using ladder if else or nested if.

Source Code :

```c
#include <stdio.h>

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

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


    if((num1 > num2) && (num1 > num3))
    {
        max = num1;
    }
    else if(num2 > num3)
    {
        max = num2;
    }
    else
    {

        max = num3;
    }
    printf("Maximum number among all three numbers = %d", max);

    return 0;
}
```

Output :

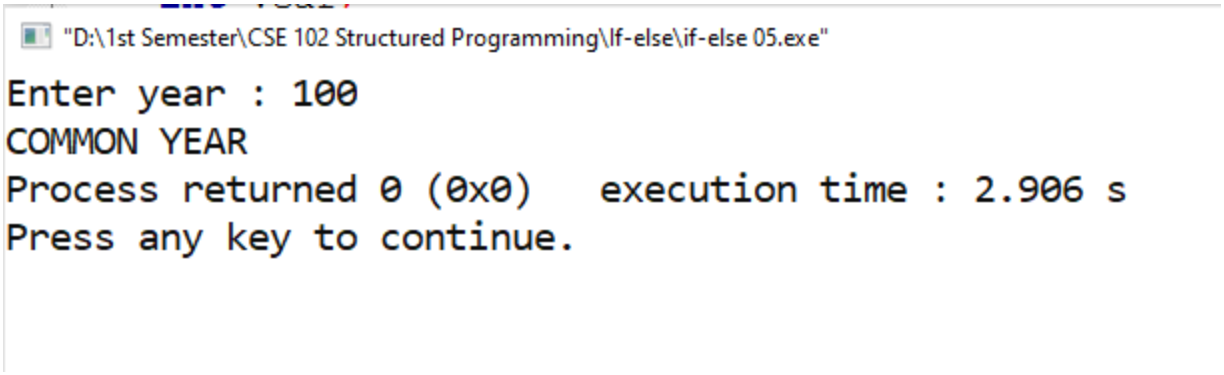
```
"D:\1st Semester\CSE 102 Structured Programming\If-else\if-else 04.exe"
Enter three numbers: 7 8 9
Maximum number among all three numbers = 9
Process returned 0 (0x0)   execution time : 9.505 s
Press any key to continue.
```

Question 05 : Write a C program to check a given year is leap year or not.

Source Code :

```c
#include <stdio.h>

int main()
{
    int year;
    printf("Enter year : ");
    scanf("%d", &year);

    if(((year % 4 == 0) && (year % 100 !=0)) || (year % 400==0))
    {
        printf("LEAP YEAR");
    }
    else
    {
        printf("COMMON YEAR");
    }

    return 0;
}
```

Output :



Question 06 : Write a C program to input a character from user and check whether given character is alphabet, uppercase. lowercase, digit or special character.

Soure Code :

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

int main() {
    char ch;


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


    if (isalpha(ch)) {
        printf("'%c' is an alphabet.\n", ch);
        if (isupper(ch))
            printf("It is an uppercase letter.\n");
        else
            printf("It is a lowercase letter.\n");
    }
    else if (isdigit(ch)) {
        printf("'%c' is a digit.\n", ch);
    }
    else {
        printf("'%c' is a special character.\n", ch);
    }

    return 0;
}
```

Output :

```
"D:\1st Semester\CSE 102 Structured Programming\If-else\if-else 06.exe"
Enter a character: $
'$' is a special character.

Process returned 0 (0x0)   execution time : 3.572 s
Press any key to continue.
```

Question 07 : Write a C program to check whether an alphabet is vowel or consonant.

Source code :

```c
#include <stdio.h>

int main()
{
    char ch;
    printf("Enter any 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 Vowel.", ch);
    }
    else if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        printf("'%c' is Consonant.", ch);
    }
    else
    {
        printf("'%c' is not an alphabet.", ch);
    }

    return 0;
}
```

Output :

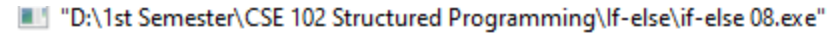
```
"D:\1st Semester\CSE 102 Structured Programming\lf-else\if-else 07.exe"
Enter any character: U
'U' is Vowel.
Process returned 0 (0x0)   execution time : 6.427 s
Press any key to continue.
```

Question 08 : Write a C program to calculate grade of student, If (i) number >= 80: Grade A+, (ii) number>=70: Grade A, (iii) number between 60 to 70: Grade A-, (iv) number between 50 to 60:Grade B (v) number >=40: Grade C and number <40: Grade F.

Source code :

```c
#include <stdio.h>

int main()
{
    float marks;

    printf("Enter student's marks: ");
    scanf("%f", &marks);

    if (marks >= 80)
        printf("Grade: A+\n");
    else if (marks >= 70)
        printf("Grade: A\n");
    else if (marks >= 60)
        printf("Grade: A-\n");
    else if (marks >= 50)
        printf("Grade: B\n");
    else if (marks >= 40)
        printf("Grade: C\n");
    else
        printf("Grade: F\n");

    return 0;
```

Output :



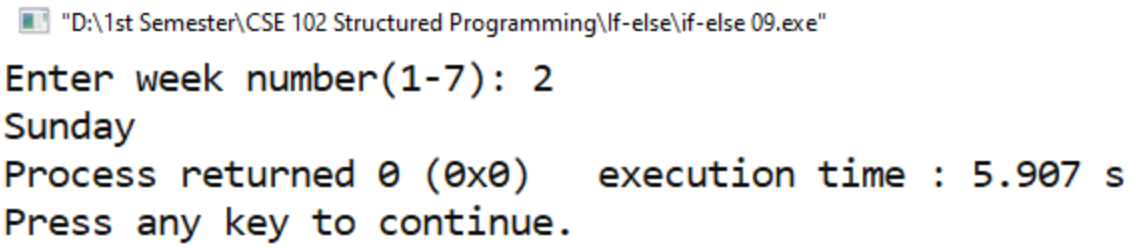

```
Enter student's marks: 80
Grade: A+

Process returned 0 (0x0)   execution time : 2.814 s
Press any key to continue.
```

Question 09 : Write a C program to input week number and print day of week name using switch case.

Source code :

```c
#include <stdio.h>

int main()
{
    int week;
    printf("Enter week number(1-7): ");
    scanf("%d",&week);

    switch(week)
    {
    case 1:
        printf("Saturday");
        break;
    case 2:
        printf("Sunday");
        break;
    case 3:
        printf("Monday");
        break;
    case 4:
        printf("Tuesday");
        break;
    case 5:
        printf("Wednesday");
        break;
    case 6:
        printf("Thursday");
        break;
    case 7:
        printf("Friday");
        break;
    default:
        printf("Invalid input! Please enter week number between 1-7.");
    }

    return 0;
}
```

Output :

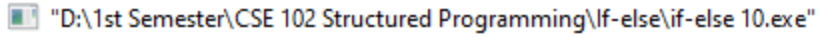


Question 10 : Write a C program to input a number and check the given number is odd or even.

Source Code :

```c
#include <stdio.h>

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

    if (num % 2 == 0)
    {
        printf("%d is an even number.\n", num);
    }
    else
    {
        printf("%d is an odd number.\n", num);
    }

    return 0;
}
```

Output :




```
Enter a number: 9
9 is an odd number.

Process returned 0 (0x0)   execution time : 6.418 s
Press any key to continue.
```