Bangladesh University of Business and Technology (BUBT)

Lab Report 01(if-else)

Name: Anik Chakma

Intake: 55,Section:09, ID: 20255103154

Question 01: Write a C program to input temperature to Centigrade and convert to Fahrenheit.

```c
#include <stdio.h>

int main() {
    float centigrade, fahrenheit;

    printf("Enter temperature in Centigrade: ");
    scanf("%f", &centigrade);

    fahrenheit = (centigrade * 9.0 / 5.0) + 32;
    printf("%.2f Centigrade = %.2f Fahrenheit\n", centigrade, fahrenheit);

    return 0;
}
```

```
Output
Enter temperature in Centigrade: 100
100.00 Centigrade = 212.00 Fahrenheit
```

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

```c
#include <stdio.h>
#define PI 3.14159

int main() {
    float radius, diameter, circumference, area;

    printf("Enter the radius of the circle: ");
    scanf("%f", &radius);

    diameter = 2 * radius;

    circumference = 2 * PI * radius;
    area = PI * radius * radius;
    printf("Diameter = %.2f\n", diameter);
    printf("Circumference = %.2f\n", circumference);
    printf("Area = %.2f\n", area);

    return 0;
}
```

Output

```
Enter the radius of the circle: 5
Diameter = 10.00
Circumference = 31.42
Area = 78.54
```

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.

```c
#include <stdio.h>

int main() {
    int a, b, temp;
    printf("Enter two numbers (a and b): ");
    scanf("%d %d", &a, &b);

    printf("Original values: a = %d, b = %d\n", a, b);
    temp = a;
    a = b;
    b = temp;
    printf("After swapping using third variable: a = %d, b = %d\n", a, b);
    temp = a;
    a = b;
    b = temp;
    a = a ^ b;
    b = a ^ b;
    a = a ^ b;
    printf("After swapping using bitwise XOR: a = %d, b = %d\n", a, b);

    a = a ^ b;
    b = a ^ b;
    a = a ^ b;


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

    return 0;
}
```

```
Output
Enter two numbers (a and b): 5,9
Original values: a = 5, b = 0
After swapping using third variable: a = 0, b = 5
After swapping using bitwise XOR: a = 0, b = 5
After swapping using arithmetic operators: a = 0, b = 5
```

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

```c
#include <stdio.h>

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

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

    if (a >= b) {
        if (a >= c) {
            max = a;
        } else {
            max = c;
        }
    } else {
        if (b >= c) {
            max = b;
        } else {
            max = c;
        }
    }

    printf("Maximum number is %d\n", max);

    return 0;
}
```

```
Output

Enter three numbers: 7,8,9
Maximum number is 7
```

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

```c
#include <stdio.h>

int main() {
    int year;

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

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

    return 0;
}
```

```
Output

Enter a year: 2025
2025 is not a leap year.
```

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>

int main() {
    char ch;

    printf("Enter a character: ");
    scanf("%c", &ch);
    if ((ch >= 'A') && (ch <= 'Z')) {
        printf("%c is an uppercase alphabet.\n", ch);
    }
    else if ((ch >= 'a') && (ch <= 'z')) {
        printf("%c is a lowercase alphabet.\n", ch);
    }
    else if ((ch >= '0') && (ch <= '9')) {
        printf("%c is a digit.\n", ch);
    }
    else {
        printf("%c is a special character.\n", ch);
    }

    return 0;
}
```

```
Output

Enter a character: a
a is a lowercase alphabet.
```

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 an alphabet: ");
    scanf("%c", &ch);

    if ((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {

        char lower = (ch >= 'A' && ch <= 'Z') ? ch + ('a' - 'A') : ch;

        if (lower == 'a' || lower == 'e' || lower == 'i' || lower == 'o' || lower == '
            printf("%c is a vowel.\n", ch);
        } else {
            printf("%c is a consonant.\n", ch);
        }
    } else {
        printf("Invalid input! Please enter an alphabet.\n");
    }

    return 0;
}
```

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() {
    int marks;

    printf("Enter marks: ");
    scanf("%d", &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;
}
```

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 weekNumber;

    printf("Enter week number (1-7): ");
    scanf("%d", &weekNumber);
    switch (weekNumber) {
        case 1:
            printf("Sunday\n");
            break;
        case 2:
            printf("Monday\n");
            break;
        case 3:
            printf("Tuesday\n");
            break;
        case 4:
            printf("Wednesday\n");
            break;
        case 5:
            printf("Thursday\n");
            break;
        case 6:
            printf("Friday\n");
            break;
        case 7:
            printf("Saturday\n");
            break;
        default:
            printf("Invalid week number! Please enter a number between 1 and 7.\n");
    }

    return 0;
}
```

Output

```
Enter week number (1-7): 5
Thursday
```

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 number;

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

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

    return 0;
}
```

Output

```
Enter a number: 79
79 is odd.
```