

Task 2\Q_A_1.c

```
/* #include<stdio.h> files      //No need to 'files'
void main()
{
int x = 10;
int y = 15;
printf("%d", (x, y))           //print out 2 variables with one declaration
                                //Forget the semicolon
                                //didn't close the main function

*/

#include <stdio.h>
void main()
{
    int x = 10;
    int y = 15;
    printf("%d %d", x, y);
}
```

Task 2\Q_A_2.c

```
/*  
void main()                ->need to incldue the header file stdio.h  
{  
int a=10;  
int c=a/0;                -> u can't Divide by zero/ Run tiime Erero  
}  
  
*/  
  
#include<stdio.h>  
  
void main()  
{  
    int a = 10;  
    int c=a/2;  
}
```

Task 2\Q_A_3.c

```
/*
void Main()          --> Synax eror main not Main
{
    printf("%d",sum(10,20));
}
int sum(int a, int b)    -->syntax sum is not declared
{
    return x*y;  --> Logic Error function u r trying to multiply
                --> x and y not
}
*/

#include <stdio.h>
int sum(int x, int y)
{
    int result = x+y;
    return result;
}

int main()
{
    printf("%d\n", sum(10,20));
    printf("%d %d", 10, 20);
}
```

Task 2\Q_B.c

//Implement a simple C program that includes the following data:

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

int main()
{
    int x = 6;
    int y = 60;
    int xy = x*y;

    double z = sqrt(pow(xy,2) + x*pow(y, 2));
    printf("The result = %.3lf", z);
}
```

Task 2\Q_C_V1.c

//c) Design Write a program to display the output as the following

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

```
int main()
{
    int rows ;
    printf("Enter the # of rows: ");
    scanf("%d", &rows);
    for(int i = 1; i<= rows; i++)
    {
        for(int j=1; j<=i; j++)
        {
            printf("*");

        }
        for(int space=1; space<=(2*rows)+1-(2*i); space++)
        {
            printf(" ");
        }
        for (int k=1; k<=i; k++)
        {
            printf("*");
        }

        printf("\n");
    }
}
```

Task 2\Q_C_V2.c

```
#include <stdio.h>

int main()
{
    int rows ;
    int space;
    printf("Enter the # of rows: ");
    scanf("%d", &rows);
    space=rows*2+1;
    for(int i = 1; i<= rows; i++)
    {
        for(int j=1; j<=i; j++)
        {
            printf("*");

        }
        for(int z=0; z<space; z++)
        {
            printf(" ");
        }
        for (int k=1; k<=i; k++)
        {
            printf("*");
        }

        space=space-2;
        printf("\n");
    }
}
```

Task 2\Q_D_V1.c

//d) Execute the previous program but allow the user to enter X and Y
#include <stdio.h>

```
int main()
{
    char y;
    printf("Enter the symbol: ");
    scanf("%c", &y);
    int x ;
    printf("Enter the X: ");
    scanf("%d", &x);

    for(int i = 1; i<= x; i++)
    {
        for(int j=1; j<=i; j++)
        {
            printf("%c",y);

        }
        for(int space=1; space<=(2*x)+1-(2*i); space++)
        {
            printf(" ");
        }
        for (int k=1; k<=i; k++)
        {
            printf("%c",y);
        }

        printf("\n");
    }
}
```

Task 2\Q_D_V2.c

//Implement a simple C program that includes the following data:

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

int main()
{
    float x;
    float y;
    printf("Enter X: ");
    scanf("%f",&x);
    printf("Enter Y: ");
    scanf("%f",&y);
    float xy = x*y;

    double z = sqrt(pow(xy,2) + x*pow(y, 2));
    printf("The result = %.3lf", z);
}
```


Task 2\Q_E_1.c

```
//e) Implement C program to convert Fahrenheit to Celsius using 3 methods
// METHOD 1
#include <stdio.h>
#include <string.h>
float convert(char input, float number)
{
    if(input == 'F')
    {
        float cles = (5*(number-32))/9 ;
        return cles;
    }
    else if (input == 'C')
    {
        float fahr = (9/5)*number + 32 ;
        return fahr;
    }
}

int main()
{
    char input;
    printf("Enter the type of temp using 'C' or 'F': ");
    scanf("%c", &input);

    float number;
    printf("Enter the temp: ");
    scanf("%f", &number);

    printf("%.3f", convert(input, number));
}
```

Task 2\Q_E_2.c

```
//e) Implement C program to convert Fahrenheit to Celsius using 3 methods
// METHOD 2
#include <stdio.h>
#include <string.h>
int main()
{
    float cles;
    float fahr;
    char input;
    printf("Enter the type of temp using 'C' or 'F': ");
    scanf("%c", &input);

    float number;
    printf("Enter the temp: ");
    scanf("%f", &number);

    if(input == 'F')
    {
        goto fahr;
    }
    else if (input == 'C')
    {
        goto cles;
    }

fahr:
    cles = (5*(number-32))/9 ;
    printf("%.3f", cles);

cles:
    fahr = (9/5)*number + 32 ;
    printf("%.3f", fahr);
}
```

Task 2\Q_E_3.c

```
//e) Implement C program to convert Fahrenheit to Celsius using 3 methods
// METHOD 3
#include <stdio.h>

int main()
{
    float fahr;
    float cles;
    char input;
    printf("Enter the type of temp using 'C' or 'F': ");
    scanf("%c", &input);

    float number;
    printf("Enter the temp: ");
    scanf("%f", &number);

    switch (input)
    {
    case 'C':
        fahr = (9/5)*number + 32 ;
        printf("%.3f\n", fahr);
        break;
    case 'F':
        cles = (5*(number-32))/9 ;
        printf("%.3f", cles);
    }
}
```

Task 2\Q_F_1.c

```
// f) Improve the program in point (e) using 3 methods as the following
// The program is repeated for infinity.
```

```
#include <stdio.h>
#include <string.h>

int main()
{
    while(1)
    {
        float number;

        printf("Enter the temp in Fahr: ");
        scanf("%f", &number);

        float cles = (5*(number-32))/9 ;
        printf("-----\n");
        printf("%.3f in Fahr = %.3f in Cels\n", number, cles);
        printf("-----\n");
    }
}
```

Task 2\Q_F_2.c

```
// f) Improve the program in point (e) using 3 methods as the following
// if the user wants to exit the program, he must enter 0

#include <stdio.h>
#include <string.h>
// 1 Measn cles and 2 means Fahr
float convert(int input, float number)
{
    if(input == 2)
    {
        float cles = (5*(number-32))/9 ;
        return cles;
    }
    else if (input == 1)
    {
        float fahr = (9/5)*number + 32 ;
        return fahr;
    }
}

int main()
{
    while(10)
    {
        int input;
        printf("Enter the type of temp using '1' for cles or '2' fahr Or 0 to quit: ");

        scanf("%d", &input);

        if(input == 0)
        {
            break;
        }

        float number;
        printf("Enter the temp: ");
        scanf("%f", &number);
        printf("-----\n");
        printf("%.3f\n", convert(input, number));
        printf("-----\n");
    }
}
```

G) Write an Algorithm, Pseudocode , and flowchart to convert Fahrenheit to Celsius several times.

Algorithm:

1. Start
2. Read the value in fahr
3. Calculate Celsius temperature using the formula: $(\text{Fahrenheit} - 32) * 5/9$
4. Display the Celsius temperature
5. go to step 2

Pseudocode:

```
START
DO
    DISPLAY "read input in fahr "
    C = (fahr- 32) * 5/9
    DISPLAY "Celsius temperature is ", c
    Display step 2
```

