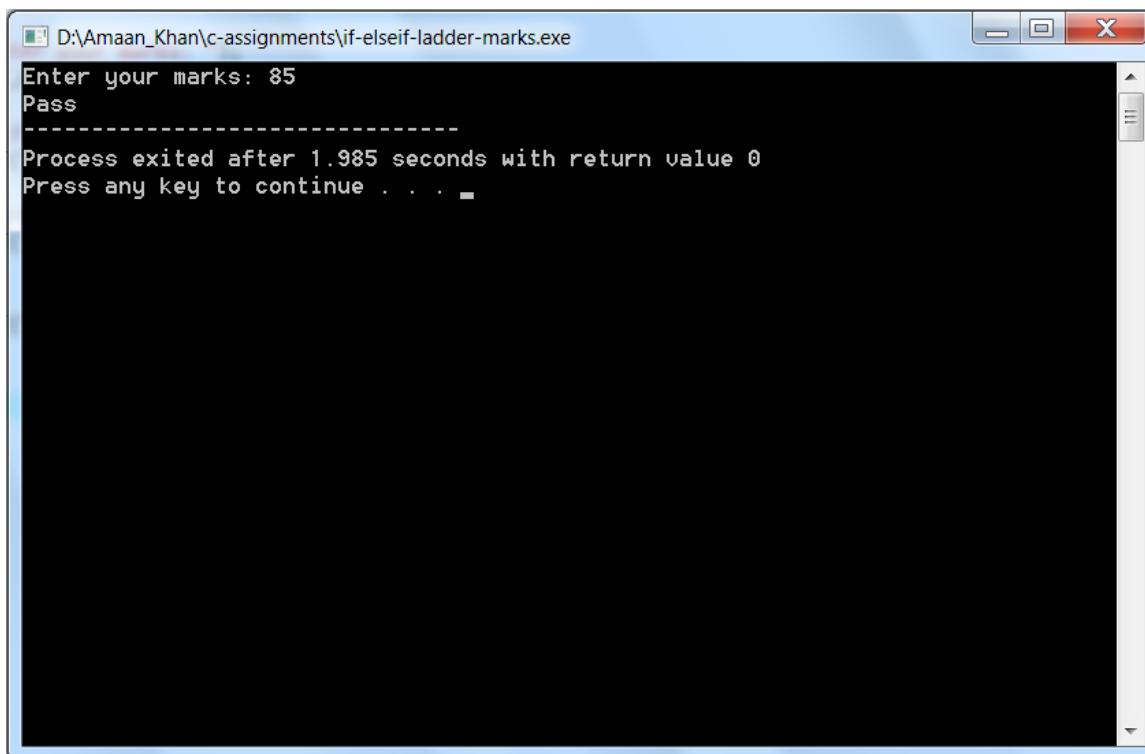


**Q.1) Demonstration of Conditional Statement using logical AND Operator
(if- else if - else) with limits?**

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\if-elseif-ladder-marks.c - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar contains various icons for file operations like Open, Save, Print, and Build. The status bar at the bottom right says "TDM-GCC 4.9.2 32-bit Profiling". The code editor window displays the following C program:

```
1 #include<stdio.h>
2 int main(){
3     int marks;
4     printf("Enter your marks: ");
5     scanf("%d",&marks);
6
7     if(marks>=35 && marks<=100){
8         printf("Pass");
9     }
10    else if(marks>100 || marks<0){
11        printf("Enter Valid marks");
12    }
13    else{
14        printf("Fail.");
15    }
16
17 }
```



Q.2) Write a program to find out Greatest number among three number?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\find-greatest.cpp - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Print. The status bar at the bottom right says "TDM-GCC 4.9.2 32-bit". The code editor window displays the following C++ code:

```
1 // WAP to find greatest number among three
2 // Developed by Amaan Khan (BCA FY)
3 #include<stdio.h>
4
5 int main(){
6     int n1, n2, n3;
7
8     printf("Enter first number: ");
9     scanf("%d", &n1);
10
11    printf("Enter second number: ");
12    scanf("%d", &n2);
13
14    printf("Enter third number: ");
15    scanf("%d", &n3);
16
17 if(n1 > n2 && n1 > n3){
18     printf("%d is greatest\n", n1);
19 }
20 else if(n2 > n1 && n2 > n3){
21     printf("%d is greatest\n", n2);
22 }
23 else if(n3 > n1 && n3 > n2){
24     printf("%d is greatest\n", n3);
25 }
26 else if(n1 == n2 && n2 == n3){
27     printf("All Number are equal\n");
28 }
29 else{
30     printf("Two or more numbers are equal\n");
31 }
32
33 return 0;
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\find-greatest.exe". The window displays the following output:

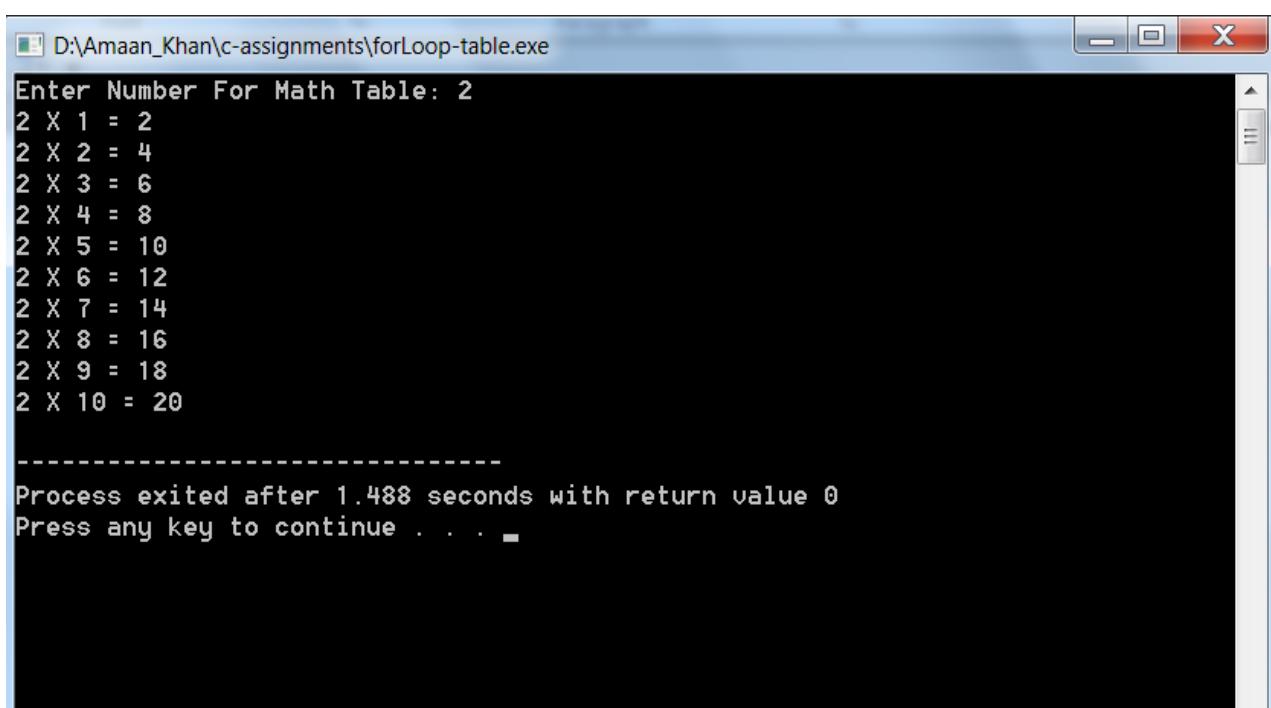
```
Enter first number: 45
Enter second number: 65
Enter third number: 98
98 is greatest

-----
Process exited after 11.29 seconds with return value 0
Press any key to continue . . .
```

Q.3) WAP for Looping statements math Table in this format (2x1=2)?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\forLoop-table.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help. The toolbar contains various icons for file operations like Open, Save, Print, and search. The status bar on the right says "TDM-GCC". The project navigation bar at the top lists "if-elseif-ladder-marks.c", "find-greatest.cpp", and "forLoop-table.c", with "forLoop-table.c" being the active file. The code editor displays the following C program:

```
1 #include<stdio.h>
2 int main(){
3     int num,i;
4     printf("Enter Number For Math Table: ");
5     scanf("%d",&num);
6
7     for(i=1;i<=10;i++){
8         printf("%d X %d = %d\n",num,i,num*i);
9     }
10    return 0;
11 }
```



Q.4) Write a C Program to read 5 elements of an array and display them using a Loop?

The screenshot shows the Dev-C++ 5.11 IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\Array.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, Print, and Find. The status bar at the bottom says "(globals)". The code editor window displays the following C program:

```
1 #include<stdio.h>
2 int main(){
3     int num[5] = {10,20,30,40,50};
4     int i;
5
6     printf("Array element are: \n");
7
8     for(i=0;i<5;i++){
9         printf("%d\n",num[i]);
10    }
11
12    return 0;
13 }
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\Array.exe". The output of the program is displayed, showing the elements of the array being printed one by one. The terminal window also shows the standard message at the end of the execution.

```
Array element are:
10
20
30
40
50
-----
Process exited after 0.01687 seconds with return value 0
Press any key to continue . . .
```

Q.5) Write a C Program to demonstrate Any Three String Function?

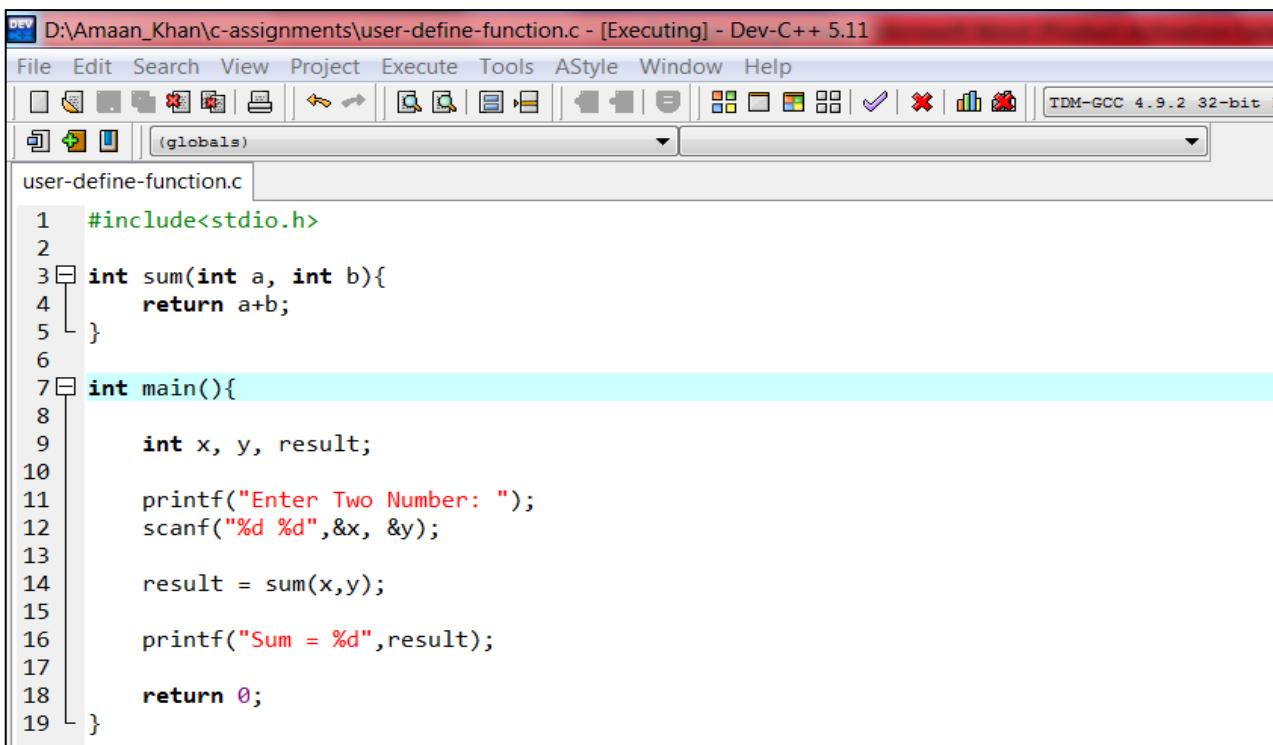
The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\string-function.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. Below the menu is a toolbar with various icons. The code editor window contains the following C program:

```
1 #include<stdio.h>
2 #include<string.h>
3
4 int main(){
5     char str[50];
6
7     printf("Enter a Text (String): ");
8     scanf("%s", str);
9
10    printf("Length of string: %d\n", strlen(str));
11
12    printf("UpperCase String: %s\n",strupr(str));
13
14    printf("LowerCase String: %s\n",strlwr(str));
15
16    return 0;
17 }
18
19 }
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\string-function.exe". The output of the program is displayed:

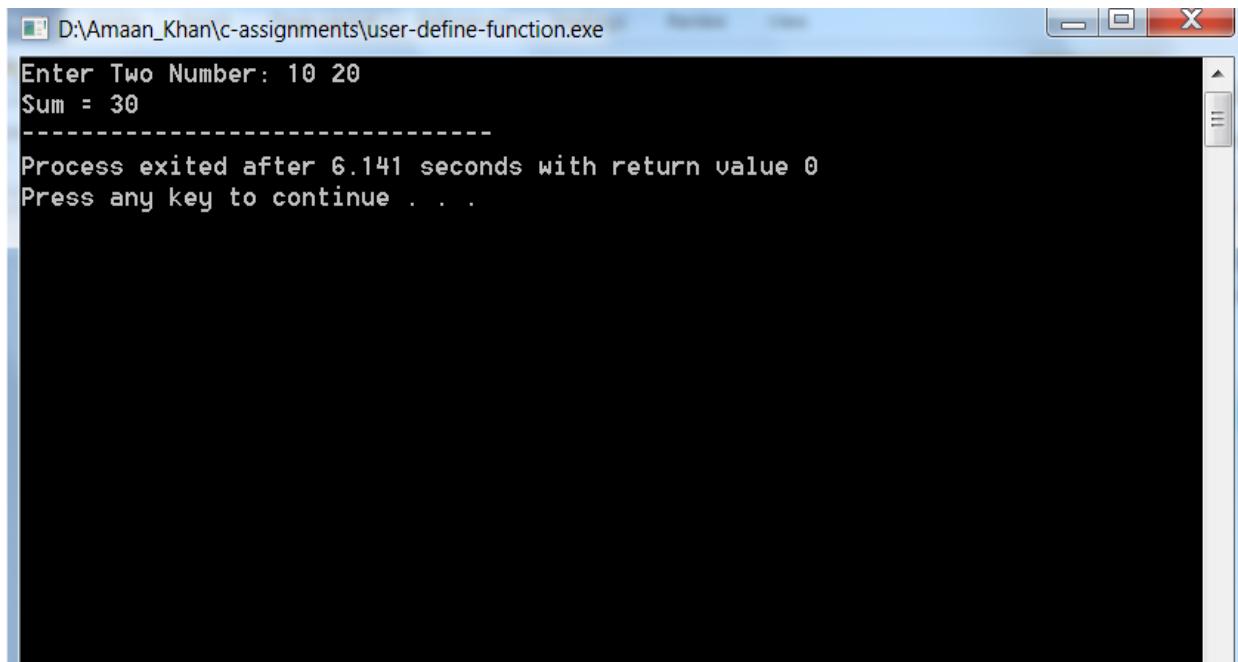
```
Enter a Text (String): Amaan
Length of string: 5
UpperCase String: AMAAN
LowerCase String: amaan
-----
Process exited after 3.275 seconds with return value 0
Press any key to continue . . .
```


Q.6) Write a C Program using user-defined function to find the sum of two number?



The screenshot shows the Dev-C++ 5.11 IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\user-define-function.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help. The toolbar has various icons for file operations. The status bar at the bottom right says "TDM-GCC 4.9.2 32-bit E". The code editor window contains the following C code:

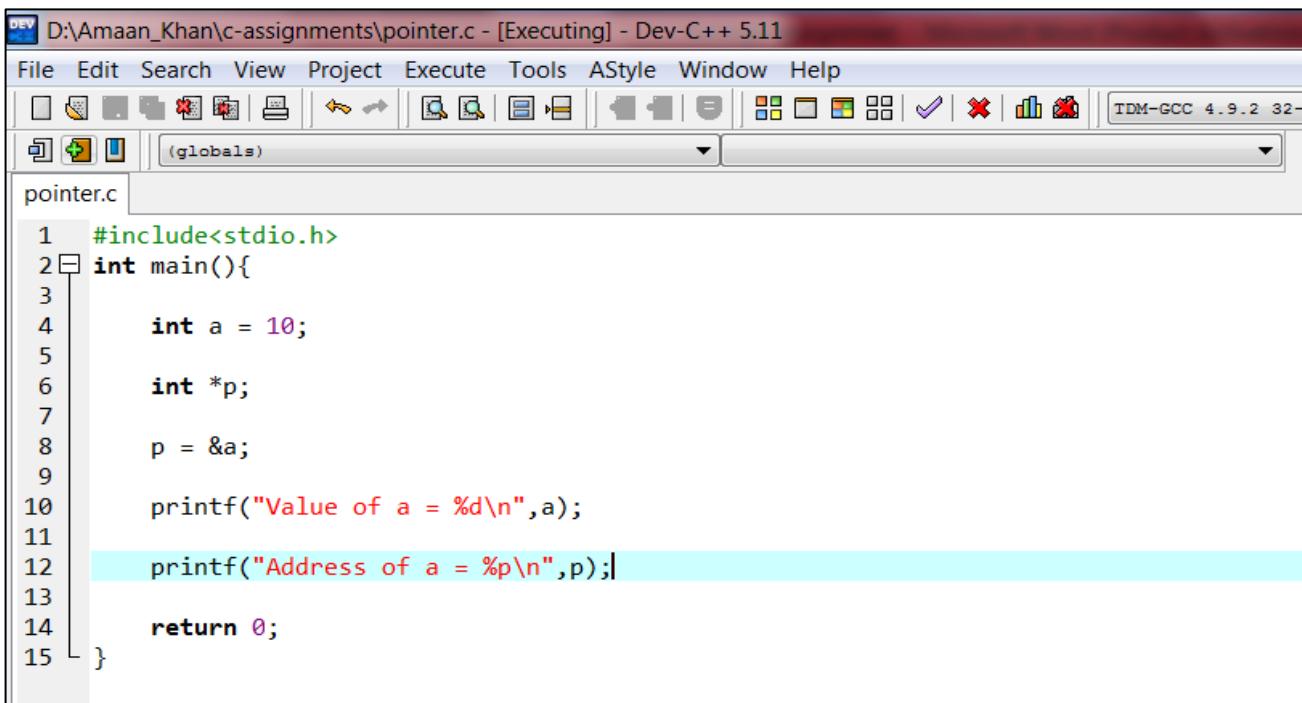
```
1 #include<stdio.h>
2
3 int sum(int a, int b){
4     return a+b;
5 }
6
7 int main(){
8     int x, y, result;
9
10    printf("Enter Two Number: ");
11    scanf("%d %d",&x, &y);
12
13    result = sum(x,y);
14
15    printf("Sum = %d",result);
16
17    return 0;
18 }
```



The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\user-define-function.exe". The window displays the following output:

```
Enter Two Number: 10 20
Sum = 30
-----
Process exited after 6.141 seconds with return value 0
Press any key to continue . . .
```

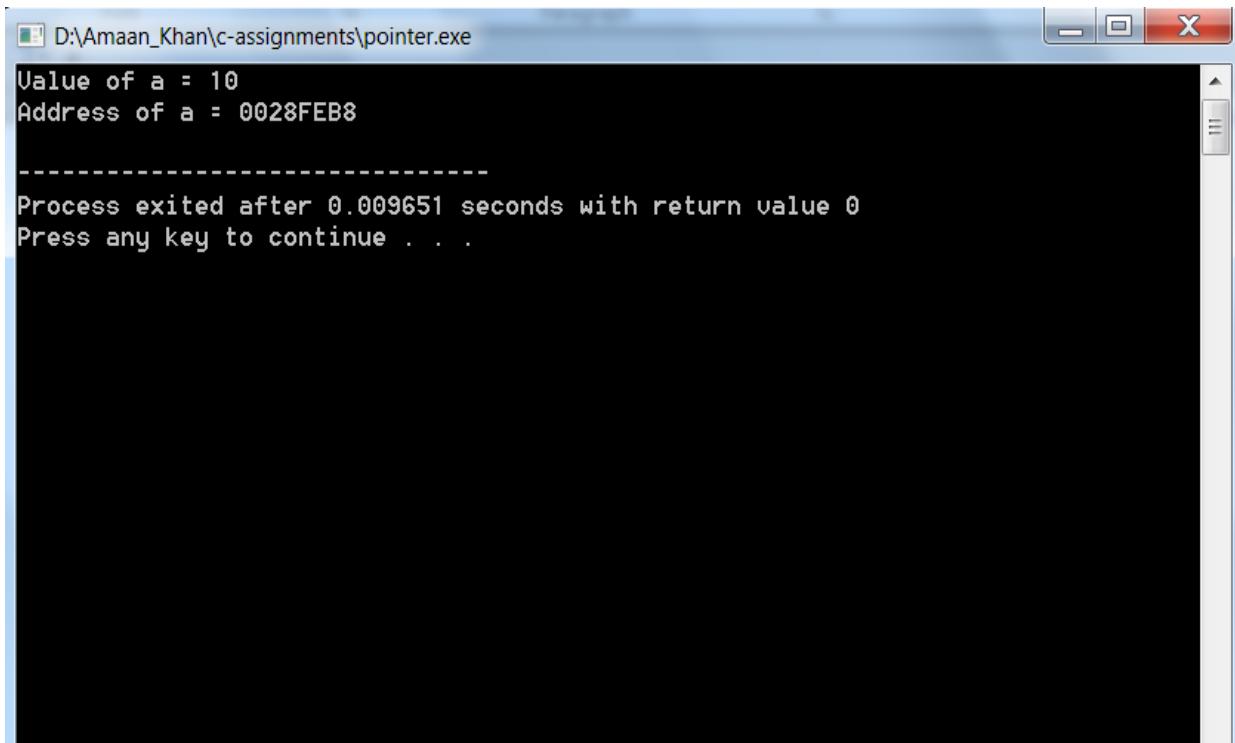

Q.7) write a C Program to display address of a variable using a POINTER?



The screenshot shows the Dev-C++ IDE interface. The title bar reads "DEV D:\Amaan_Khan\c-assignments\pointer.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. Below the menu is a toolbar with various icons. The main window displays the source code file "pointer.c". The code is as follows:

```
1 #include<stdio.h>
2 int main(){
3     int a = 10;
4     int *p;
5     p = &a;
6     printf("Value of a = %d\n",a);
7     printf("Address of a = %p\n",p); // Line 12
8     return 0;
9 }
```

The line "printf("Address of a = %p\n",p);" is highlighted in light blue.



The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\pointer.exe". The output is:

```
Value of a = 10
Address of a = 0028FEB8
-----
Process exited after 0.009651 seconds with return value 0
Press any key to continue . . .
```

Q.8) write a C Program to print pattern using Nested Loop by taking number of rows

And Columns from the user?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\nested-loop.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. Below the menu is a toolbar with various icons. The code editor window contains the "nested-loop.c" file. The code is as follows:

```
1 #include<stdio.h>
2 int main(){
3     int rows, cols, i, j; // cols = coloumns.
4     printf("Enter Number of Rows: ");
5     scanf("%d",&rows);
6     printf("Enter Number of Coloumns: ");
7     scanf("%d",&cols);
8     for(i = 1; i<=rows; i++){
9         for(j=1; j<=cols; j++){
10             printf("%d",j);
11         }
12         printf("\n");
13     }
14     return 0;
15 }
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\nested-loop.exe". The window displays the following output:

```
Enter Number of Rows: 5
Enter Number of Coloumns: 7
1234567
1234567
1234567
1234567
1234567
-----
Process exited after 3.855 seconds with return value 0
Press any key to continue . . .
```

Q.9) write a C Program to store and display element of 2-D Array?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\2d-array.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, Print, and Build. The status bar at the bottom right says "TDM-GCC 4.9.2 32-bit". The code editor window contains the following C code:

```
1 #include<stdio.h>
2 int main(){
3
4     int a[2][3] = { {1,2,3}, {4,5,6} };
5
6     int i,j;
7
8     printf("2-D Array elements: \n");
9
10    for(i=0;i<2;i++){
11
12        for(j=0;j<3;j++){
13            printf("%d",a[i][j]);
14
15        }
16
17        printf("\n");
18    }
19
20    return 0;
21 }
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\2d-array.exe". The output is as follows:

```
2-D Array elements:
1 2 3
4 5 6

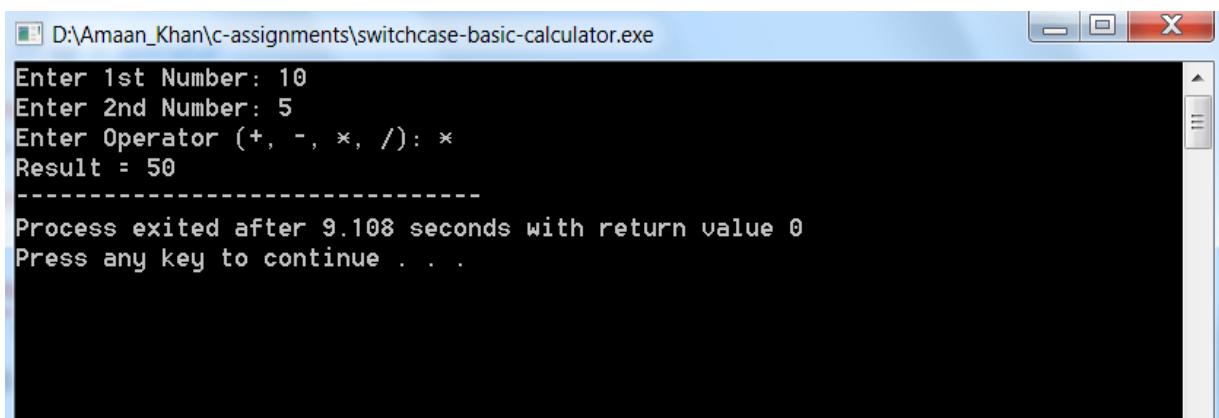
-----
Process exited after 0.01771 seconds with return value 0
Press any key to continue . . .
```

**Q.10) write a C Program to Perform basic arithmetic operation using switch case.
(Basic Calculator)?**

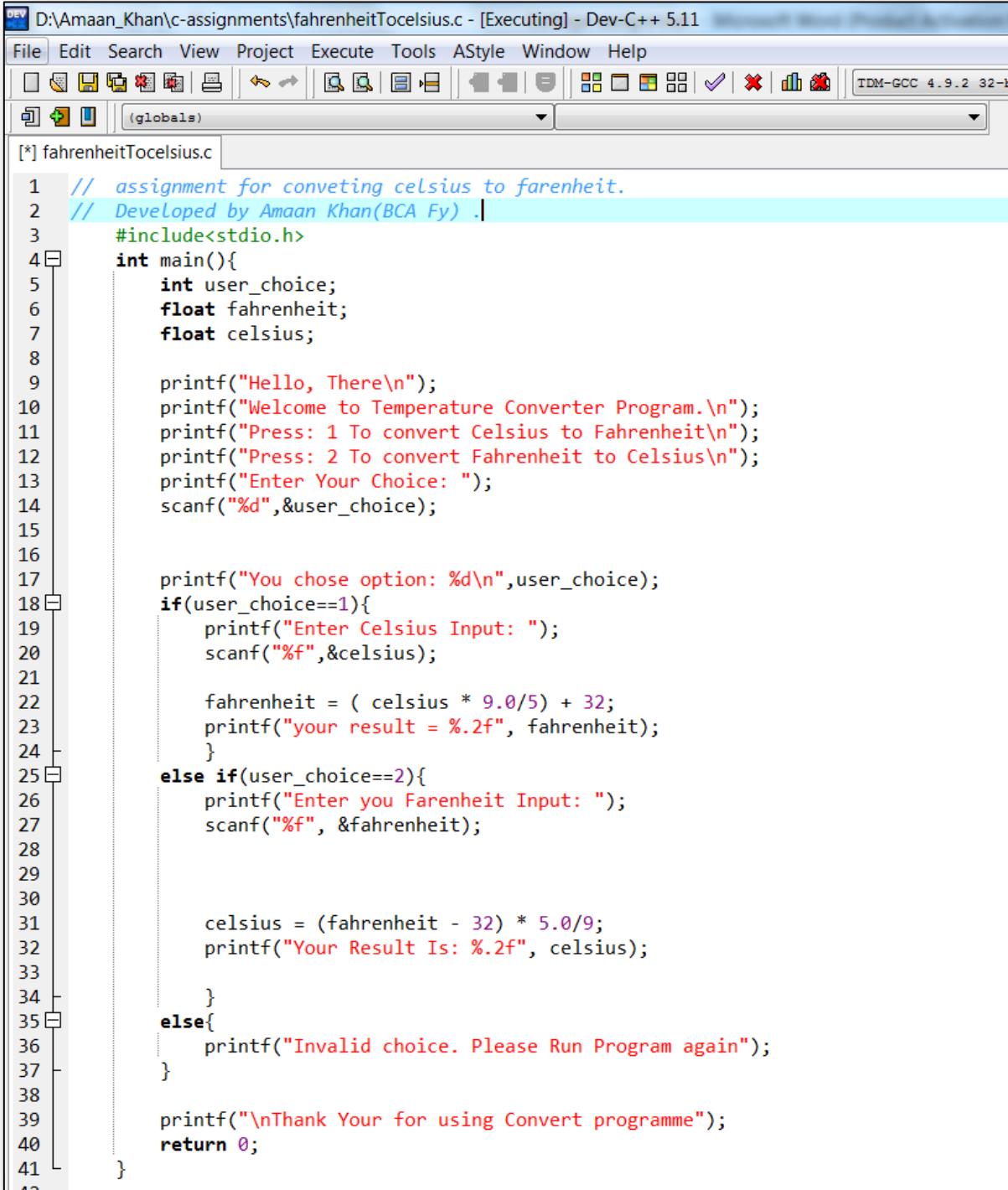
The screenshot shows the Dev-C++ IDE interface with the following details:

- Title Bar:** D:\Amaan_Khan\c-assignments\switchcase-basic-calculator.c - Dev-C++ 5.11
- Menu Bar:** File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help
- Toolbar:** Includes icons for Open, Save, Build, Run, and others.
- Status Bar:** TDM-GCC 4.9.2 32-bit Profiling
- Code Editor:** Displays the C code for a basic calculator. The code uses a switch statement to handle four operators (+, -, *, /) and prints the result or an error message. It also handles division by zero.

```
1 #include <stdio.h>
2 int main() {
3     int a, b;
4     char op; // op = operator
5
6     printf("Enter 1st Number: ");
7     scanf("%d", &a);
8
9     printf("Enter 2nd Number: ");
10    scanf("%d", &b);
11
12    printf("Enter Operator (+, -, *, /): ");
13    scanf(" %c", &op);
14
15    switch (op) {
16
17        case '+':
18            printf("Result = %d", a + b);
19            break;
20
21        case '-':
22            printf("Result = %d", a - b);
23            break;
24
25        case '*':
26            printf("Result = %d", a * b);
27            break;
28
29        case '/':
30            if (b != 0) {
31                printf("Result = %d", a / b);
32            } else {
33                printf("Division by Zero Not Allowed");
34            }
35            break;
36
37        default:
38            printf("Invalid Operator");
39    }
40
41    return 0;
}
```

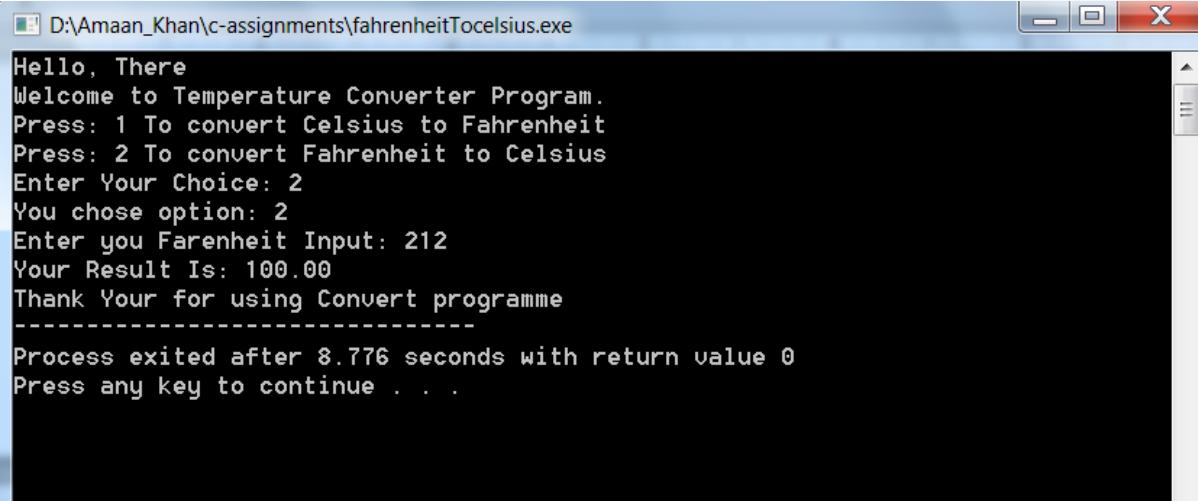


Q.11) 1. Converting degrees Celsius to Fahrenheit and vice versa?



The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\fahrenheitTocelsius.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. Below the menu is a toolbar with various icons. The main window displays the C source code for a temperature converter program. The code includes comments for assignment and developer information, declares variables for user choice, Fahrenheit, and Celsius, and implements logic to convert between the two scales based on user input.

```
1 // assignment for converting celsius to farenheit.
2 // Developed by Amaan Khan(BCA Fy) .
3 #include<stdio.h>
4 int main(){
5     int user_choice;
6     float fahrenheit;
7     float celsius;
8
9     printf("Hello, There\n");
10    printf("Welcome to Temperature Converter Program.\n");
11    printf("Press: 1 To convert Celsius to Fahrenheit\n");
12    printf("Press: 2 To convert Fahrenheit to Celsius\n");
13    printf("Enter Your Choice: ");
14    scanf("%d",&user_choice);
15
16
17    printf("You chose option: %d\n",user_choice);
18    if(user_choice==1){
19        printf("Enter Celsius Input: ");
20        scanf("%f",&celsius);
21
22        fahrenheit = ( celsius * 9.0/5 ) + 32;
23        printf("your result = %.2f", fahrenheit);
24    }
25    else if(user_choice==2){
26        printf("Enter you Farenheit Input: ");
27        scanf("%f", &fahrenheit);
28
29
30        celsius = (fahrenheit - 32) * 5.0/9;
31        printf("Your Result Is: %.2f", celsius);
32
33    }
34    else{
35        printf("Invalid choice. Please Run Program again");
36    }
37
38
39    printf("\nThank Your for using Convert programme");
40    return 0;
41 }
```



The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\fahrenheitTocelsius.exe". The window displays the execution of the program, starting with a welcome message and instructions. It then prompts the user for their choice (2 for Fahrenheit to Celsius conversion). The user enters 2, and the program calculates the result (100.00). Finally, it thanks the user and exits.

```
Hello, There
Welcome to Temperature Converter Program.
Press: 1 To convert Celsius to Fahrenheit
Press: 2 To convert Fahrenheit to Celsius
Enter Your Choice: 2
You chose option: 2
Enter you Farenheit Input: 212
Your Result Is: 100.00
Thank Your for using Convert programme
-----
Process exited after 8.776 seconds with return value 0
Press any key to continue . . .
```

Q.12) 2.Display three input numbers in sorted (non-decreasing) order?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\non-decreasingOrder.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. Below the menu is a toolbar with various icons. The main window displays the C source code "non-decreasingOrder.c". The code prompts the user to enter three numbers, reads them, and then determines their sorted order based on if statements. The code uses printf statements to output the sorted order. The code is as follows:

```
1 // Display three input numbers in sorted (non-decreasing) order?
2 //Developed by Amaan Khan (BCA FY).
3
4 #include <stdio.h>
5
6 int main() {
7     int a, b, c;
8
9     printf("Enter three numbers: ");
10    scanf("%d %d %d", &a, &b, &c);
11
12    if (a <= b && a <= c) {
13        if (b <= c) {
14            printf("Sorted order: %d %d %d", a, b, c);
15        } else {
16            printf("Sorted order: %d %d %d", a, c, b);
17        }
18    }
19    else if (b <= a && b <= c) {
20        if (a <= c) {
21            printf("Sorted order: %d %d %d", b, a, c);
22        } else {
23            printf("Sorted order: %d %d %d", b, c, a);
24        }
25    }
26    else {
27        if (a <= b) {
28            printf("Sorted order: %d %d %d", c, a, b);
29        } else {
30            printf("Sorted order: %d %d %d", c, b, a);
31        }
32    }
33
34    return 0;
35 }
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\non-decreasingOrder.exe". The window displays the following text:
Enter three numbers: 65 15 84
Sorted order: 15 65 84

Process exited after 13.79 seconds with return value 0
Press any key to continue . . .

Q.13) 3. Given a positive integer value n (≥ 0) display number, square and cube of numbers from 1 to n in a tabular format?

```
DEV D:\Amaan_Khan\c-assignments\SquareAndCubeInTableFormat.c - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
SquareAndCubeInTableFormat.c
1 //3. Given a positive integer value n (>= 0) display number,
2 // square and cube of numbers from 1 to n in a tabular format?
3 // Developed by Amaan Khan(BCA FY).
4
5 #include <stdio.h>
6
7 int main() {
8     int number, i;
9
10    printf("Enter value for number for printing Square & Cube: ");
11    scanf("%d", &number);
12
13    printf("Number\tSquare\tCube\n");
14
15    for (i = 1; i <= number; i++) {
16        printf("%d\t%d\t%d\n", i, i*i, i*i*i);
17    }
18
19    return 0;
20 }
```

```
D:\Amaan_Khan\c-assignments\SquareAndCubeInTableFormat.exe
Enter value for number for printing Square & Cube: 7
Number  Square  Cube
1       1       1
2       4       8
3       9       27
4      16       64
5      25      125
6      36      216
7      49      343
-----
Process exited after 7.577 seconds with return value 0
Press any key to continue . . .
```

Q.14) 4.Given an input positive integer number, display odd numbers from in the range [1,n]?

The screenshot shows the Dev-C++ IDE interface. The title bar reads "D:\Amaan_Khan\c-assignments\odd_numbers_1_to_n.c - [Executing] - Dev-C++ 5.11". The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Build. The status bar at the bottom right says "TDM-GCC 4.9.2 32-bit Profiling". The code editor window contains the following C code:

```
1 // 4. Given an input positive integer number,
2 // display odd numbers from in the range [1,n]?
3 // Developed by Amaan Khan.
4
5 #include <stdio.h>
6
7 int main() {
8     int n, i;
9
10    printf("Enter a positive number: ");
11    scanf("%d", &n);
12
13    printf("Odd numbers from 1 to %d are:\n", n);
14
15    for (i = 1; i <= n; i++) {
16        if (i % 2 != 0) {
17            printf("%d ", i);
18        }
19    }
20
21    return 0;
22}
23
```

The screenshot shows a terminal window titled "D:\Amaan_Khan\c-assignments\odd_numbers_1_to_n.exe". The window displays the following output:

```
Enter a positive number: 10
Odd numbers from 1 to 10 are:
1 3 5 7 9
-----
Process exited after 4.656 seconds with return value 0
Press any key to continue . . .
```

Q15) 5. Display first mathematical tables, each table up to 10 rows? Generalize this to display first n (> 0) mathematical tables up to m (m > 0) rows?

The screenshot shows the Dev-C++ IDE interface with the file 'multiplication_tables.c' open. The code is a C program that prompts the user for the number of tables (n) and the number of rows (m). It then prints multiplication tables for each integer from 1 to n, with each table having up to m rows. The code uses nested loops to generate the tables and printf statements to print them. The code is annotated with comments explaining its purpose and structure.

```
1 // 5. Display first mathematical tables, each table up to 10 rows?
2 //Generalise this to display first n (> 0)
3 //mathematical tables up to m (m > 0) rows?
4
5 // Developed by Amaan Khan (BCA FY)
6
7 #include <stdio.h>
8
9 int main() {
10     int n, m, i, j;
11
12     printf("Enter number of tables (n): ");
13     scanf("%d", &n);
14
15     printf("Enter number of rows (m): ");
16     scanf("%d", &m);
17
18     for (i = 1; i <= n; i++) {
19         printf("\nTable of %d\n", i);
20
21         for (j = 1; j <= m; j++) {
22             printf("%d x %d = %d\n", i, j, i * j);
23         }
24     }
25
26     return 0;
27 }
28
```

The screenshot shows a terminal window titled 'D:\Amaan_Khan\c-assignments\multiplication_tables.exe'. The program is run and prompts the user for the number of tables (n) and the number of rows (m). The user inputs 2 for n and 10 for m. The program then displays two multiplication tables: the table of 1 and the table of 2, each with 10 rows.

```
Enter number of tables (n): 2
Enter number of rows (m): 10

Table of 1
1 x 1 = 1
1 x 2 = 2
1 x 3 = 3
1 x 4 = 4
1 x 5 = 5
1 x 6 = 6
1 x 7 = 7
1 x 8 = 8
1 x 9 = 9
1 x 10 = 10

Table of 2
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
```