

LAB ASSIGNMENT

Name **Kainat**

Reg # **SP22-BCS-022(A)**

Subject **Data Structure and Algorithm**

Submitted to **Mam Yasmeen Jana**

Due date **11-09-2023**

COMSATS UNIVERSITY VEHARI CAMPUS



Program 01

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\addition program.cpp - 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 shows "Line: 1 Col: 1 Sel: 0 Lines: 21 Length: 310 Insert Done parsing in 0.516 seconds". The system tray indicates it's 5:02 PM on 9/10/2023, with a temperature of 37°C and haze.

```
1 //add two number using pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     int num1, num2 , *ptr1 , *ptr2 , sum=0;
6     cout<<"enter two number:";
7     cin>>num1>>num2;
8
9
10
11     ptr1 = &num1;
12     ptr2 = &num2 ;
13     sum = *ptr1 + *ptr2;
14
15     cout<<"sum of two number is :"<<sum;
16     return 0;
17 }
```

Output:

The screenshot shows a terminal window titled "C:\Users\ASIF COMPUTERS\Desktop\assignment\addition program.cpp - [Executing] - Dev-C++ 5.11". The command "C:\Users\ASIF COMPUTERS\Desktop\assignment\addition program.exe" is run. The output shows the user entering "56" and "4", and the program outputting "sum of two number is :60". The status bar at the bottom shows "Line: 1 Col: 1 Sel: 0 Lines: 21 Length: 310 Insert Done parsing in 0.516 seconds". The system tray indicates it's 5:02 PM on 9/10/2023, with a temperature of 37°C and haze.

```
enter two number:56
4
sum of two number is :60
Process exited after 7.522 seconds with return value 0
Press any key to continue . . .
```

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ASIF COMPUTERS\Desktop\assignment\addition program.exe
- Output Size: 1.83244323730469 Mib
- Compilation Time: 0.98s

Program 02

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\array in reverse order program.cpp - 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 shows "Line: 8 Col: 5 Sel: 0 Lines: 24 Length: 406 Insert Done parsing in 0.578 seconds". The code editor window displays the following C++ code:

```
1 //array in reverse order
2 #include<iostream>
3 using namespace std;
4 int main()
5 {
6     int size;
7     cout<<"enter the size of array:";
8     cin>>size;
9
10    int *arr=new int[size];
11    cout<<" enter "<<size<<" integers:"<<endl;
12    for(int i=0;i<size;i++)
13    {
14        cin>>arr[i];
15    }
16
17    cout<<" array in reverse order:"<<endl;
18    for(int i=size-1;i>=0;i--)
19    {
20        cout<<arr[i]<< " ";
21    }
22    delete[] arr;
23    return 0;
24 }
```

Output:

The screenshot shows the Dev-C++ IDE interface during execution. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\array in reverse order program.cpp - [Executing] - Dev-C++ 5.11". The code editor window shows the same code as above. The terminal window displays the following output:

```
enter the size of array:6
enter 6 integers:
1
2
3
4
5
6
array in reverse order:
6 5 4 3 2 1
-----
Process exited after 13.37 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom shows "Line: 8 Col: 5 Sel: 0 Lines: 24 Length: 406 Insert Done parsing in 0.578 seconds". The bottom status bar also shows "Type here to search" and system information like "37°C Haze" and the date/time "5:04 PM 9/10/2023".

Program 03

The screenshot shows the Dev-C++ IDE interface. 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 shows the current file path: C:\Users\ASIF COMPUTERS\Desktop\assignment\calculate the area of circle.cpp - Dev-C++ 5.11, and the build configuration: TDM-GCC 4.9.2 64-bit Release.

The code editor window displays the following C++ code:

```
1 //calculate the area of circle
2 #include <iostream>
3 #include <cmath>
4
5 using namespace std;
6
7 double calculateCircleArea(double radius) {
8     return M_PI * pow(radius, 2);
9 }
10
11 int main() {
12     double radius;
13
14     cout << "Enter the radius of the circle: ";
15     cin >> radius;
16
17     double area = calculateCircleArea(radius);
18
19     cout << "area of circle with radius " << radius << " is: " << area << endl;
20
21     return 0;
22 }
```

The status bar at the bottom of the IDE shows the following information: Line: 1 Col: 31 Sel: 0 Lines: 22 Length: 440 Insert Done parsing in 0.563 seconds.

Output:

The screenshot shows the Dev-C++ IDE interface during execution. 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 shows the current file path: C:\Users\ASIF COMPUTERS\Desktop\assignment\calculate the area of circle.cpp - [Executing] - Dev-C++ 5.11, and the build configuration: TDM-GCC 4.9.2 64-bit Release.

The terminal window displays the following output:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\calculate the area of circle.exe
Enter the radius of the circle: 4
area of circle with radius 4 is: 50.2655

Process exited after 6.31 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom of the IDE shows the following information: Line: 1 Col: 31 Sel: 0 Lines: 22 Length: 440 Insert Done parsing in 0.016 seconds.

Program 04

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\copy one string to another string.cpp - 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. The status bar at the bottom shows "Line: 1 Col: 36 Sel: 0 Lines: 23 Length: 467 Insert Done parsing in 0.594 seconds". The code editor window displays the following C++ code:

```
1 //copy one string to another string
2 #include <iostream>
3 #define MAX_SIZE 100 // Maximum size of the string
4 using namespace std;
5
6 int main() {
7     char text1[MAX_SIZE], text2[MAX_SIZE];
8     char * str1 = text1;
9     char * str2 = text2;
10
11    cout<<"Enter any string: "<<endl;
12    cin>>text1;
13
14    while(*str2++ = *(str1++));
15
16    cout<<"First string: "<<text1<<endl;
17    cout<<"Second string: "<<text2<<endl;
18
19    return 0;
20 }
```

Output:

The screenshot shows the terminal window of the Dev-C++ IDE. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\copy one string to another string.cpp - [Executing] - Dev-C++ 5.11". The terminal window displays the following output:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\copy one string to another string.exe
Enter any string:
kainat
First string: kainat
Second string: kainat

Process exited after 4.076 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom shows "Line: 1 Col: 36 Sel: 0 Lines: 23 Length: 467 Insert Done parsing in 0.016 seconds". The bottom part of the IDE shows the build log:

```
- Warnings: 0
- Output Filename: C:\Users\ASIF COMPUTERS\Desktop\assignment\copy one string to another string.exe
- Output Size: 1.83264541625977 MiB
- Compilation Time: 1.14s
```

Program 05

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\decrement program.cpp - 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. The status bar at the bottom shows "TDN-GCC 4.9.2 64-bit Release". The code editor window displays the following C++ code:

```
1 //decrement the value through pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     int number=10;
6     int* ptr =&number;
7     cout<<"original number is:"<<number<<endl;
8     (*ptr)--;
9     cout<<"decrement number:"<<number<<endl;
10
11
12 }
13
```

The status bar at the bottom of the IDE shows "Done parsing in 0.422 seconds". Below the IDE, the Windows taskbar is visible with the search bar, pinned icons, and system tray showing the date and time.

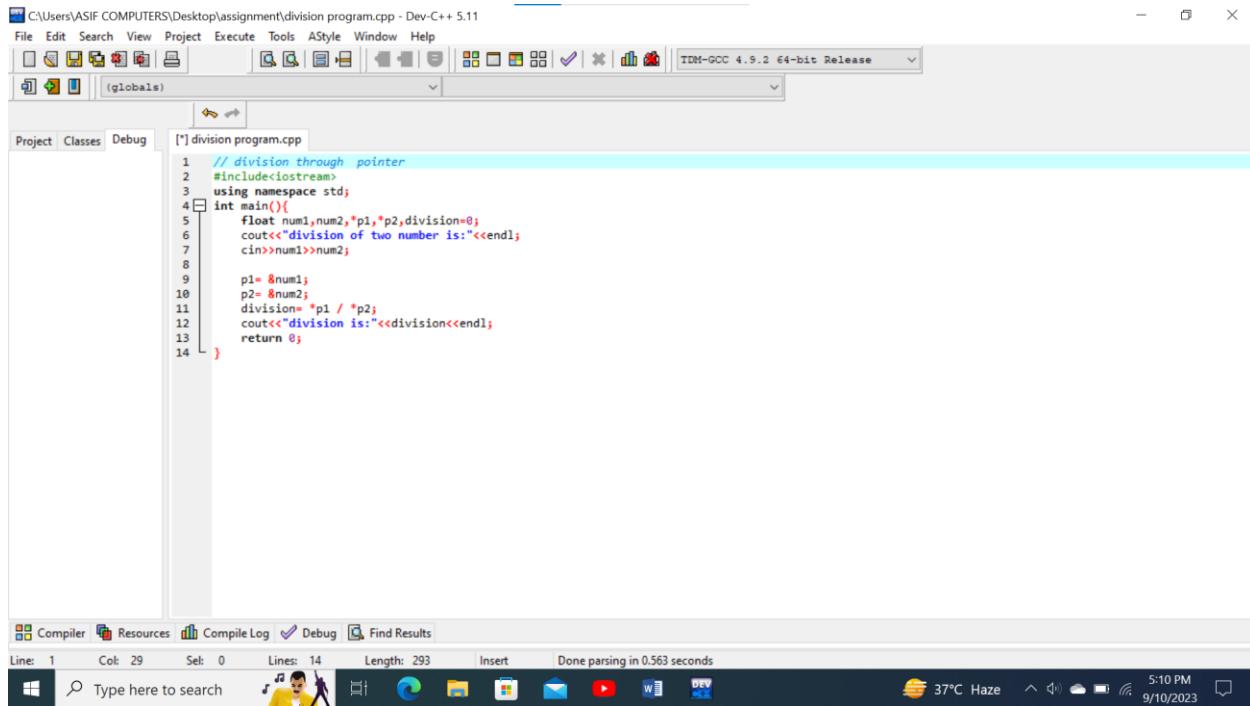
Output:

The screenshot shows a terminal window titled "C:\Users\ASIF COMPUTERS\Desktop\assignment\decrement program.cpp - [Executing] - Dev-C++ 5.11". The window displays the output of the program:

```
original number is:10
decrement number:9
```

Below the terminal window, the status bar shows "Process exited after 0.2576 seconds with return value 0" and "Press any key to continue . . .". The bottom status bar also shows "Done parsing in 0.016 seconds". The Windows taskbar is visible at the bottom.

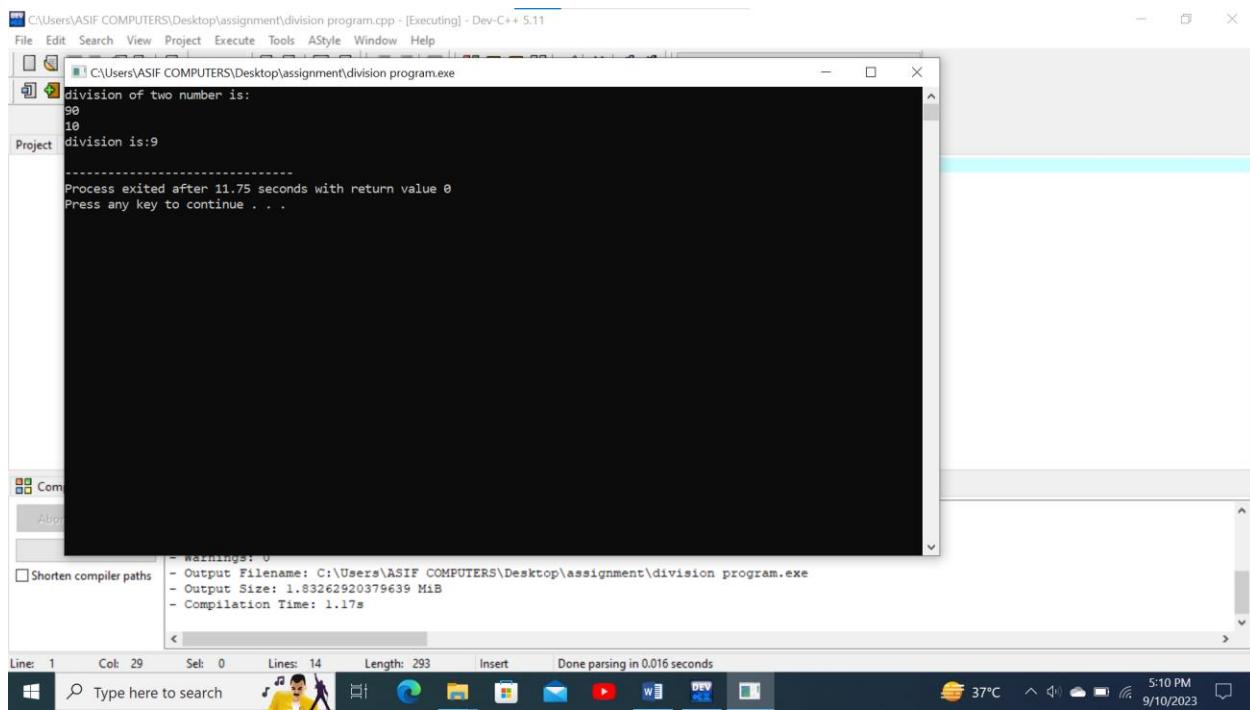
Program 06



The screenshot shows the Dev-C++ IDE interface. The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations. The status bar at the bottom shows the path C:\Users\ASIF COMPUTERS\Desktop\assignment\division program.cpp - Dev-C++ 5.11, line 1, col 29, and other details. The code editor window displays the following C++ code:

```
1 // division through pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     float num1,num2,*p1,*p2,division=0;
6     cout<<"division of two number is:"<<endl;
7     cin>>num1>>num2;
8
9     p1= &num1;
10    p2= &num2;
11    division= *p1 / *p2;
12    cout<<"division is:"<<division<<endl;
13    return 0;
14 }
```

Output:



The screenshot shows the Dev-C++ IDE during execution. The menu bar and toolbar are identical to the previous screenshot. The status bar shows the path C:\Users\ASIF COMPUTERS\Desktop\assignment\division program.cpp - [Executing] - Dev-C++ 5.11, line 1, col 29, and other details. The output window displays the following text:

```
division of two number is:
90
10
division is:
-----
Process exited after 11.75 seconds with return value 0
Press any key to continue . . .
```

The bottom status bar also shows the execution details: Warnings: 0, Output Filename: C:\Users\ASIF COMPUTERS\Desktop\assignment\division program.exe, Output Size: 1.83262920379639 MiB, Compilation Time: 1.17s.

Program 07

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\factorial calculation with pointer.cpp - 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. The status bar at the bottom shows "Line: 1 Col: 37 Sel: 0 Lines: 31 Length: 636 Insert Done parsing in 0.516 seconds". The main window displays the C++ code for calculating factorial using pointers:

```
1 //factorial calculation with pointer
2 #include <iostream>
3 using namespace std;
4
5 long long calculateFactorial(int n) {
6     long long result = 1;
7     long long* pResult = &result;
8
9     for (int i = 1; i <= n; i++) {
10         *pResult *= i;
11     }
12
13     return *pResult;
14 }
15
16 int main() {
17     int n;
18
19     cout << "Enter a non-negative integer: ";
20     cin >> n;
21
22     if (n < 0) {
23         cout << "Factorial is not defined for negative numbers." << endl;
24     } else {
25         long long factorial = calculateFactorial(n);
26         cout << "Factorial of " << n << " is: " << factorial << endl;
27     }
28
29     return 0;
30 }
```

Output:

The screenshot shows the Dev-C++ IDE during execution. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\factorial calculation with pointer.cpp - [Executing] - Dev-C++ 5.11". The status bar at the bottom shows "Line: 1 Col: 37 Sel: 0 Lines: 31 Length: 636 Insert Done parsing in 0.016 seconds". The main window displays the terminal output of the program:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\factorial calculation with pointer.exe
Enter a non-negative integer: 6
Factorial of 6 is: 720
-----
Process exited after 4.405 seconds with return value 0
Press any key to continue . . .
```

Program 08

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\length of string using pointer.cpp - 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. The status bar at the bottom shows "Line: 1 Col: 33 Sel: 0 Lines: 23 Length: 416 Insert Done parsing in 0.422 seconds". The code editor window displays the following C++ code:

```
1 //Length of string using pointer
2 #include <iostream>
3 using namespace std;
4 #define MAX_SIZE 100 // Maximum size of the string
5 using namespace std;
6
7 int main() {
8     char text[MAX_SIZE];
9     char * str = text;
10    int count = 0;
11
12
13    cout<<"Enter any string: ";
14    cin>>text;
15
16
17    while(*str++ != '\0') count++;
18
19    cout<<"Length of "<<text<<" is "<<count;
20
21    return 0;
22 }
23 }
```

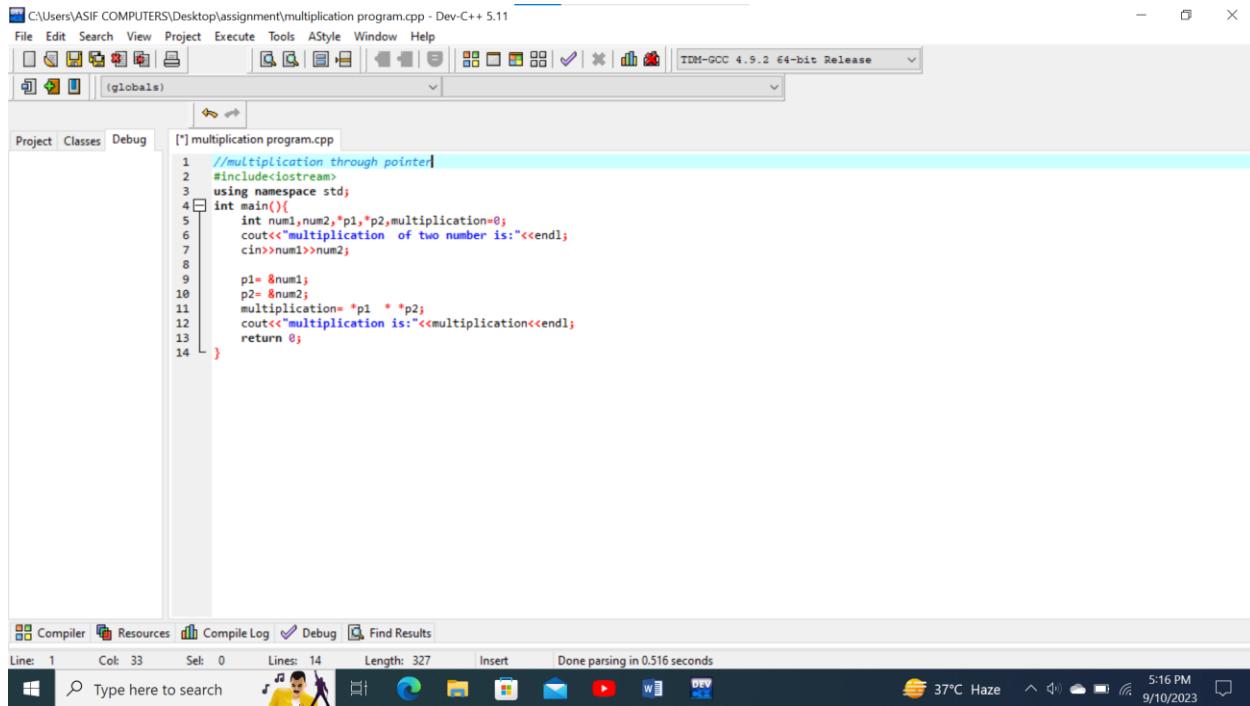
Output:

The screenshot shows the terminal window of the Dev-C++ IDE. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\length of string using pointer.cpp - [Executing] - Dev-C++ 5.11". The terminal window displays the following output:

```
Enter any string: kainat
Length of kainat is 6
Process exited after 4.484 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom shows "Line: 1 Col: 33 Sel: 0 Lines: 23 Length: 416 Insert Done parsing in 0.016 seconds". The bottom of the window shows compilation statistics: "Output Size: 1.83245754241943 MiB" and "Compilation Time: 0.98s".

Program 09



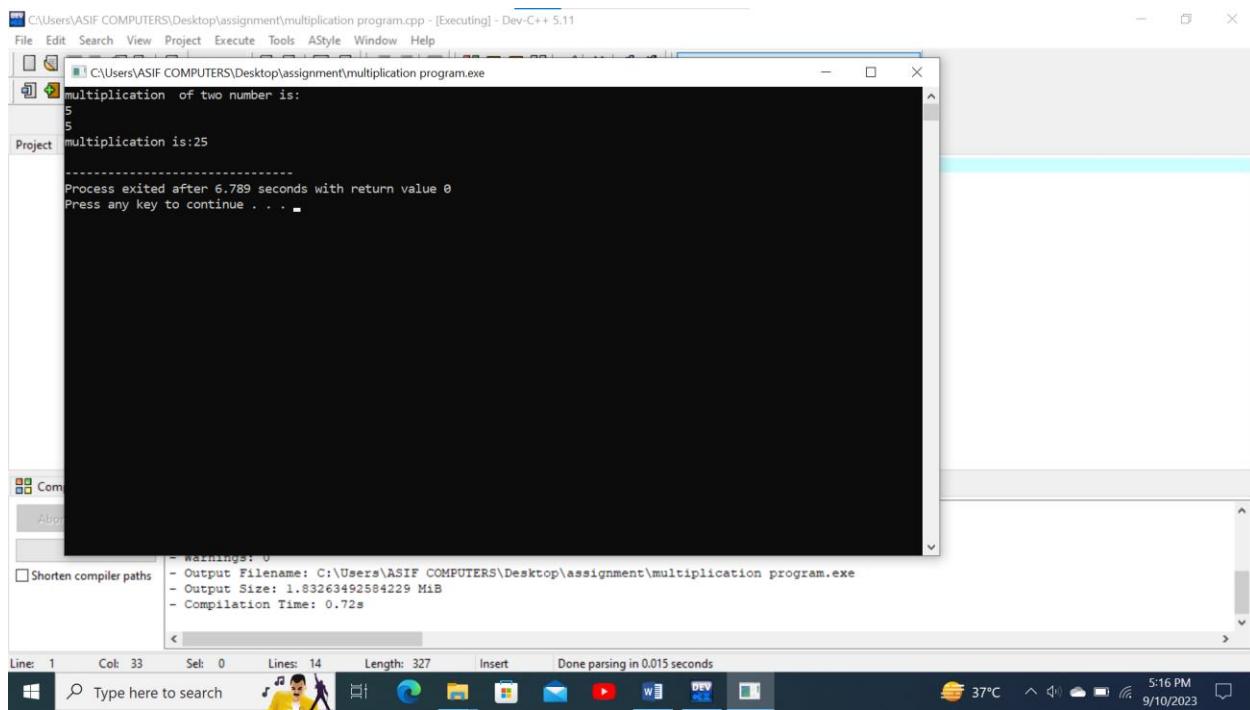
The screenshot shows the Dev-C++ IDE interface. The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Build. The status bar at the bottom shows the current file path: C:\Users\ASIF COMPUTERS\Desktop\assignment\multiplication program.cpp - Dev-C++ 5.11, and the compiler version: TDN-GCC 4.9.2 64-bit Release.

The code editor window displays the following C++ code:

```
1 //multiplication through pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     int num1,num2,*p1,*p2,multiplication=0;
6     cout<<"multiplication of two number is:"<<endl;
7     cin>>num1>>num2;
8
9     p1= &num1;
10    p2= &num2;
11    multiplication= *p1 * *p2;
12    cout<<"multiplication is:"<<multiplication<<endl;
13    return 0;
14 }
```

The status bar at the bottom of the IDE shows the following information: Line: 1 Col: 33 Sel: 0 Lines: 14 Length: 327 Insert Done parsing in 0.516 seconds.

Output:



The screenshot shows the Dev-C++ IDE interface with the output window open. The menu bar and toolbar are identical to the previous screenshot. The status bar at the bottom shows the current file path: C:\Users\ASIF COMPUTERS\Desktop\assignment\multiplication program.cpp - [Executing] - Dev-C++ 5.11, and the compiler version: TDN-GCC 4.9.2 64-bit Release.

The output window displays the following text:

```
multiplication of two number is:
5
5
multiplication is:25

Process exited after 6.789 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom of the IDE shows the following information: Line: 1 Col: 33 Sel: 0 Lines: 14 Length: 327 Insert Done parsing in 0.015 seconds.

Program 10

The screenshot shows the Dev-C++ IDE interface. The main window displays the source code for a C++ program named "prime number check using pointer.cpp". The code implements a function to check if a number is prime and prints all prime numbers up to a given limit. The code is color-coded for syntax highlighting.

```
1 // find prime number using pointer
2 #include <iostream>
3
4 using namespace std;
5
6 bool isPrime(int num) {
7     if (num <= 1) {
8         return false;
9     }
10    for (int i = 2; (i * i) <= num; ++i) {
11        if (num % i == 0) {
12            return false;
13        }
14    }
15    return true;
16}
17
18 int main() {
19     int plimit;
20
21     cout << "upper lim: ";
22     cin >> plimit;
23
24     if (plimit < 2) {
25         cout << "no prime numbers within the range." << endl;
26         return 0;
27     }
28
29     cout << "Prime numbers to " << plimit << ":" ;
30
31 //using for loop
32    for (int pNum = 2; pNum <= plimit; ++pNum) {
33        if (isPrime(pNum)) {
34            cout << pNum << " ";
35        }
36    }
37
38    cout << endl;
39
40    return 0;
41}
```

The status bar at the bottom shows the following information: Line: 1 Col: 9 Sel: 0 Lines: 41 Length: 765 Insert. A note says "Press Ctrl+F11 to toggle fullscreen or Ctrl+F12 to toggle toolbars".

Output:

The screenshot shows the Dev-C++ IDE during the execution of the program. The terminal window displays the output of the program, which prints prime numbers from 2 to 199. The output is as follows:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\prime number check using pointer.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
[Project Buttons] [Toolbars] TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug prime number check using pointer.cpp
C:\Users\ASIF COMPUTERS\Desktop\assignment\prime number check using pointer.exe
upper lim: 199
Prime numbers to 199: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131
137 139 149 151 157 163 167 173 179 181 191 193 197 199

-----
Process exited after 3.156 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom shows the following information: Line: 1 Col: 9 Sel: 0 Lines: 41 Length: 765 Insert Done parsing in 0.031 seconds. A note says "Press any key to continue . . .".

Program 11

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\subtraction program.cpp - 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. The status bar at the bottom shows "Line: 1 Col: 27 Sel: 0 Lines: 14 Length: 287 Insert Done parsing in 0.421 seconds". The code editor window displays the following C++ code:

```
1 //subtraction with pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     int num1,num2,*p1,*p2,subtract=0;
6     cout<<"subtract of two number is:"<<endl;
7     cin>>num1>>num2;
8
9     p1= &num1;
10    p2= &num2;
11    subtract= *p1-*p2;
12    cout<<"subtract is:"<<subtract<<endl;
13    return 0;
14 }
```

Output:

The screenshot shows the Dev-C++ IDE interface during execution. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\subtraction program.cpp - [Executing] - Dev-C++ 5.11". The code editor window shows the same code as above. The terminal window displays the following output:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\subtraction program.exe
subtract of two number is:
99
4
subtract is:95

-----
Process exited after 6.037 seconds with return value 0
Press any key to continue . . .
```

Program 12

The screenshot shows the Dev-C++ IDE interface. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\sum of array element.cpp - 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. The status bar at the bottom shows "Line: 1 Col: 36 Sel: 0 Lines: 19 Length: 408 Insert Done parsing in 0.453 seconds". The code editor window displays the following C++ code:

```
1 //sum of array element with pointer
2 #include <iostream>
3
4 using namespace std;
5
6 int main() {
7     int integerArray[] = {1, 2, 3, 4, 5};
8     int* pointerToStart = integerArray;
9     int totalSum = 0;
10
11    for (int index = 0; index < 5; ++index) {
12        totalSum += *pointerToStart;
13        pointerToStart++;
14    }
15
16    cout << "Sum of array elements: " << totalSum << endl;
17
18    return 0;
19 }
```

Output:

The screenshot shows the Dev-C++ IDE during execution. The title bar reads "C:\Users\ASIF COMPUTERS\Desktop\assignment\sum of array element.cpp - [Executing] - Dev-C++ 5.11". The status bar at the bottom shows "Line: 1 Col: 36 Sel: 0 Lines: 19 Length: 408 Insert Done parsing in 0.016 seconds". The output window displays the following text:

```
Sum of array elements: 15
-----
Process exited after 0.2895 seconds with return value 0
Press any key to continue . . .
```

The bottom status bar also shows "Done parsing in 0.016 seconds".

Program 13

The screenshot shows the Dev-C++ IDE interface. The top menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The title bar indicates the current project is "swap two number.cpp - Dev-C++ 5.11". The main workspace displays the C++ code for swapping two integers:

```
1 #include<iostream>
2 using namespace std;
3
4
5 void swap(int*p,int*q){
6     int temp;
7     temp=*p;
8     *p=*q;
9     *q=temp;
10 }
11
12 int main(){
13     int a=5;
14     int b=10;
15     cout<<"before swaping: a=<<a<<,b=<<b<<endl;
16     swap(&a,&b);
17     cout<<" after number is swap: a=<<a<<,b=<<b<<endl;
18     return 0;
19 }
```

The status bar at the bottom shows "Line: 1 Col: 1 Sel: 0 Lines: 20 Length: 297 Insert Done parsing in 0.391 seconds".

Output:

The screenshot shows the terminal window of the Dev-C++ IDE displaying the execution of the program. The output shows the initial values of a and b, the swap operation, and the final swapped values.

```
before swaping: a=5,b=10
after number is swap: a=10,b=5

Process exited after 0.3533 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom shows "Line: 1 Col: 1 Sel: 0 Lines: 20 Length: 297 Insert Done parsing in 0.391 seconds".

Program 14

The screenshot shows the Dev-C++ IDE interface. The code editor window displays a C++ program titled "largest element uding dynamic memory allocation.cpp". The code implements a function to find the largest element from a dynamically allocated array of floats. The compiler log window below shows the compilation process, including the filename, compiler name (TDM-GCC 4.9.2 64-bit Release), and the command used (C++ Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\g++.exe). The status bar at the bottom provides information like line, column, and search counts.

```
1 //Largest element using dynamic memory allocation
2 #include <stdio.h>
3 #include <stdlib.h>
4 int main()
5 {
6     int i,n;
7     float *element;
8     printf("\n\n : Find largest element using Dynamic Memory Allocation :\n");
9     printf(" Input total number of elements(1 to 100): ");
10    scanf("%d",&n);
11    element=(float*)calloc(n,sizeof(float));
12    if(element==NULL)
13    {
14        printf(" No memory is allocated.");
15        exit(0);
16    }
17    printf("\n");
18    for(i=0;i<n;i++)
19    {
20        printf(" Number %d: ",i+1);
21        scanf("%f",element+i);
22    }
23    for(i=1;i<n;i++)
24    {
25        if(*element<*(element+i))
26            element=(element+i);
27    }
28    printf(" The Largest element is : %.2f \n",*element);
29    return 0;
30 }
```

Output:

The screenshot shows the Dev-C++ IDE interface with a terminal output window. The window displays the execution of the program "largest element uding dynamic memory allocation.exe". The program prompts for the number of elements (10) and then lists the numbers 1 through 10. It then outputs "The Largest element is : 9.00". After the program exits, it shows the compilation statistics: Errors: 0, Warnings: 0, Output Filename: C:\Users\ASIF COMPUTERS\Desktop\assignment\largest element uding dynamic memory allocation.exe, Output Size: 129.4931640625 KiB, and Compilation Time: 0.42s. The status bar at the bottom shows the current date and time (5:39 PM, 9/10/2023) and system icons.

```
: Find largest element using Dynamic Memory Allocation :
Input total number of elements(1 to 100): 10
Number 1: 0
Number 2: 9
Number 3: 8
Number 4: 7
Number 5: 6
Number 6: 5
Number 7: 4
Number 8: 3
Number 9: 2
Number 10: 1
The Largest element is : 9.00

-----
Process exited after 16.39 seconds with return value 0
Press any Key to continue . . .
```

Program 15

The screenshot shows the Dev-C++ IDE interface. 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, and Build. The status bar at the bottom shows the path C:\Users\ASIF COMPUTERS\Desktop\assignment\increment program.cpp - Dev-C++ 5.11, line 1, col 1, and other details. The code editor window displays the following C++ code:

```
1 //increment the number through pointer
2 #include<iostream>
3 using namespace std;
4 int main(){
5     int number=10;
6     int* ptr=&number;
7     cout<<"original number is:"<<number<<endl;
8     (*ptr)++;
9     cout<<"Increment number:"<<number<<endl;
10
11
12 }
13
```

Output:

The screenshot shows the Dev-C++ IDE interface during execution. 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, and Build. The status bar at the bottom shows the path C:\Users\ASIF COMPUTERS\Desktop\assignment\increment program.cpp - [Executing] - Dev-C++ 5.11, line 1, col 1, and other details. A terminal window in the center displays the program's output:

```
C:\Users\ASIF COMPUTERS\Desktop\assignment\increment program.exe
original number is:10
increment number:11

Process exited after 0.2709 seconds with return value 0
Press any key to continue . . .
```