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SECTION: B

QUESTION 01: STRING ANALYSIS TOOL

Write a program using functions that performs text analysis on an input sentence.

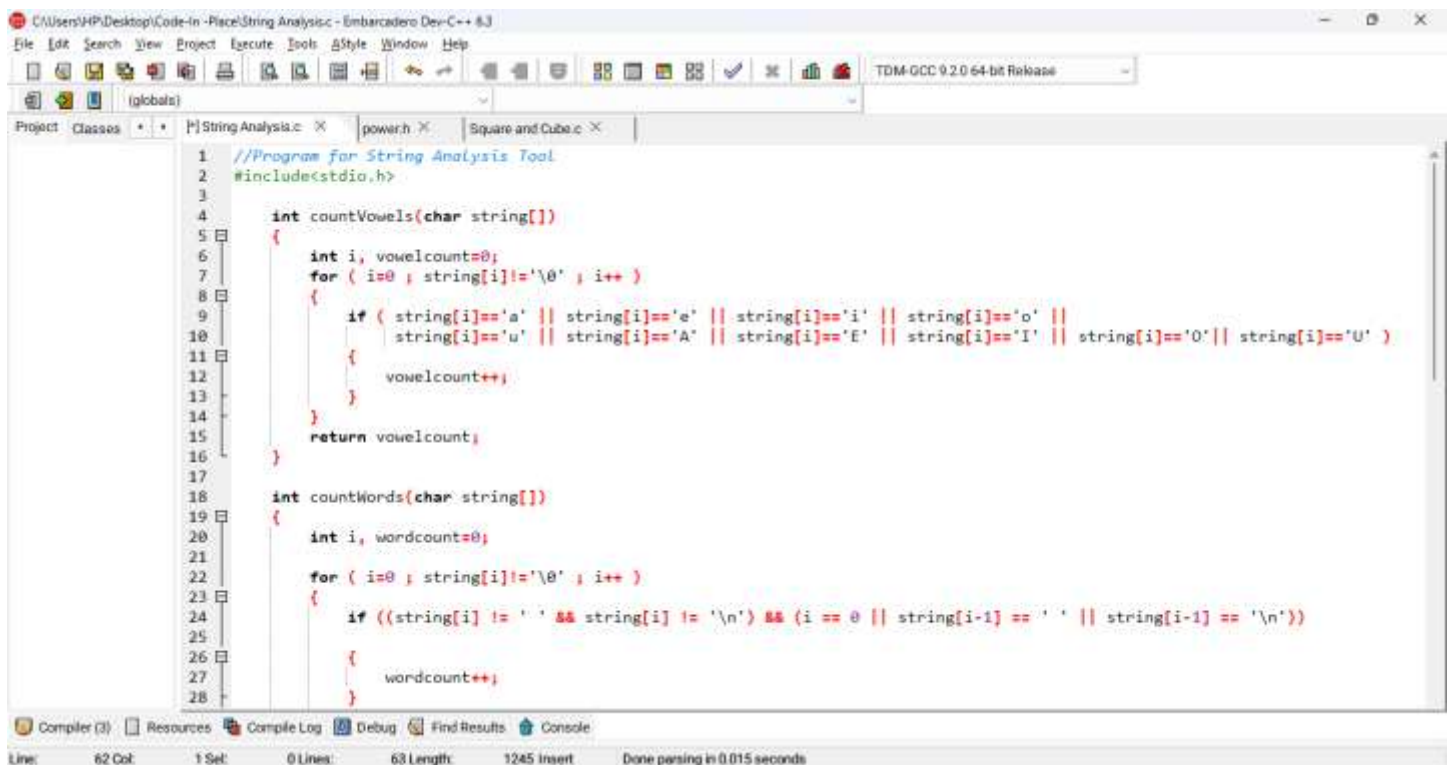
Functions:

int countVowels(string text)

int countWords(string text)

int countUppercase(string text)

SOURCE CODE:



```
1 //Program for String Analysis Tool
2 #include<stdio.h>
3
4 int countVowels(char string[])
5 {
6     int i, vowelcount=0;
7     for ( i=0 ; string[i]!='\0' ; i++ )
8     {
9         if ( string[i]=='a' || string[i]=='e' || string[i]=='i' || string[i]=='o' ||
10            string[i]=='u' || string[i]=='A' || string[i]=='E' || string[i]=='I' || string[i]=='O' || string[i]=='U' )
11         {
12             vowelcount++;
13         }
14     }
15     return vowelcount;
16 }
17
18 int countWords(char string[])
19 {
20     int i, wordcount=0;
21
22     for ( i=0 ; string[i]!='\0' ; i++ )
23     {
24         if ((string[i] != ' ' && string[i] != '\n') && (i == 0 || string[i-1] == ' ' || string[i-1] == '\n'))
25         {
26             wordcount++;
27         }
28     }
```

Compiler (3) | Resources | Compile Log | Debug | Find Results | Console

Line: 62 Col: 1 Sel: 0 Lines: 63 Length: 1245 Insert Done parsing in 0.015 seconds

```
C:\Users\HP\Desktop\Code-In-Place\String Analysis - Embarcadero Dev-C++ 8.3
File Edit Search View Project Execute Tools Style Window Help
(globals)
Project Classes * * * | String Analysis.c | power.h | Square and Cube.c |
19 {
20     int i, wordcount=0;
21
22     for ( i=0 ; string[i]!='\0' ; i++ )
23     {
24         if ((string[i] != ' ' && string[i] != '\n' && (i == 0 || string[i-1] == ' ' || string[i-1] == '\n'))
25         {
26             wordcount++;
27         }
28     }
29
30     return wordcount;
31 }
32
33
34 int countUppercase(char string[])
35 {
36     int i, uppercasecount=0;
37
38     for ( i=0 ; string[i]!='\0' ; i++ )
39     {
40         if ( string[i]>='A' && string[i]<='Z' )
41         {
42             uppercasecount++;
43         }
44     }
45     return uppercasecount;
46 }
```

Compiler (3) Resources Compile Log Debug Find Results Console

Line: 62 Col: 1 Sel: 0 Lines: 63 Length: 1245 Insert Done parsing in 0.015 seconds

```
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File Edit Search View Project Execute Tools Style Window Help
(globals)
Project Classes * * * | String Analysis.c | power.h | Square and Cube.c |
36     int i, uppercasecount=0;
37
38     for ( i=0 ; string[i]!='\0' ; i++ )
39     {
40         if ( string[i]>='A' && string[i]<='Z' )
41         {
42             uppercasecount++;
43         }
44     }
45     return uppercasecount;
46 }
47
48 int main (void)
49 {
50     char string[300];
51
52     printf("Enter the String:");
53     fgets( string, 300, stdin);
54
55     printf("\nTotal Vowels= %d", countVowels(string));
56     printf("\nTotal Words= %d", countWords(string));
57     printf("\nTotal Uppercase Alphabets= %d", countUppercase(string));
58
59     return 0;
60 }
61
62
63
```

Compiler (3) Resources Compile Log Debug Find Results Console

Line: 62 Col: 1 Sel: 0 Lines: 63 Length: 1245 Insert Done parsing in 0.015 seconds

OUTPUT:

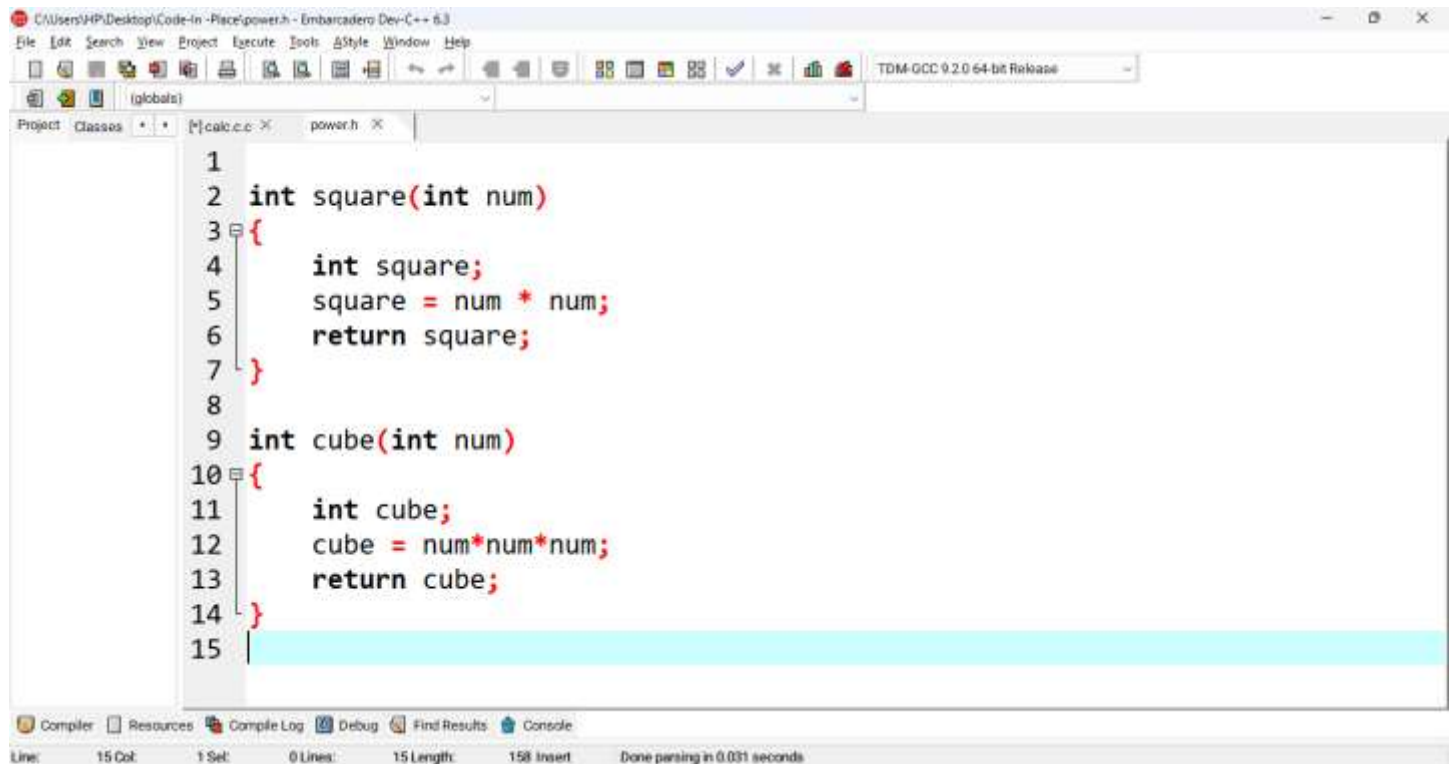
```
C:\Users\HP\Desktop\Code-It > Enter the String:My name is AREEFA SAMAR, I am an undergraduate student in NED University of Engineering and Technology.

Total Vowels= 34
Total Words= 17
Total Uppercase Alphabets= 19
-----
Process exited after 64.16 seconds with return value 0
Press any key to continue . . . |
```

QUESTION 02: SQUARE AND CUBE CALCULATOR

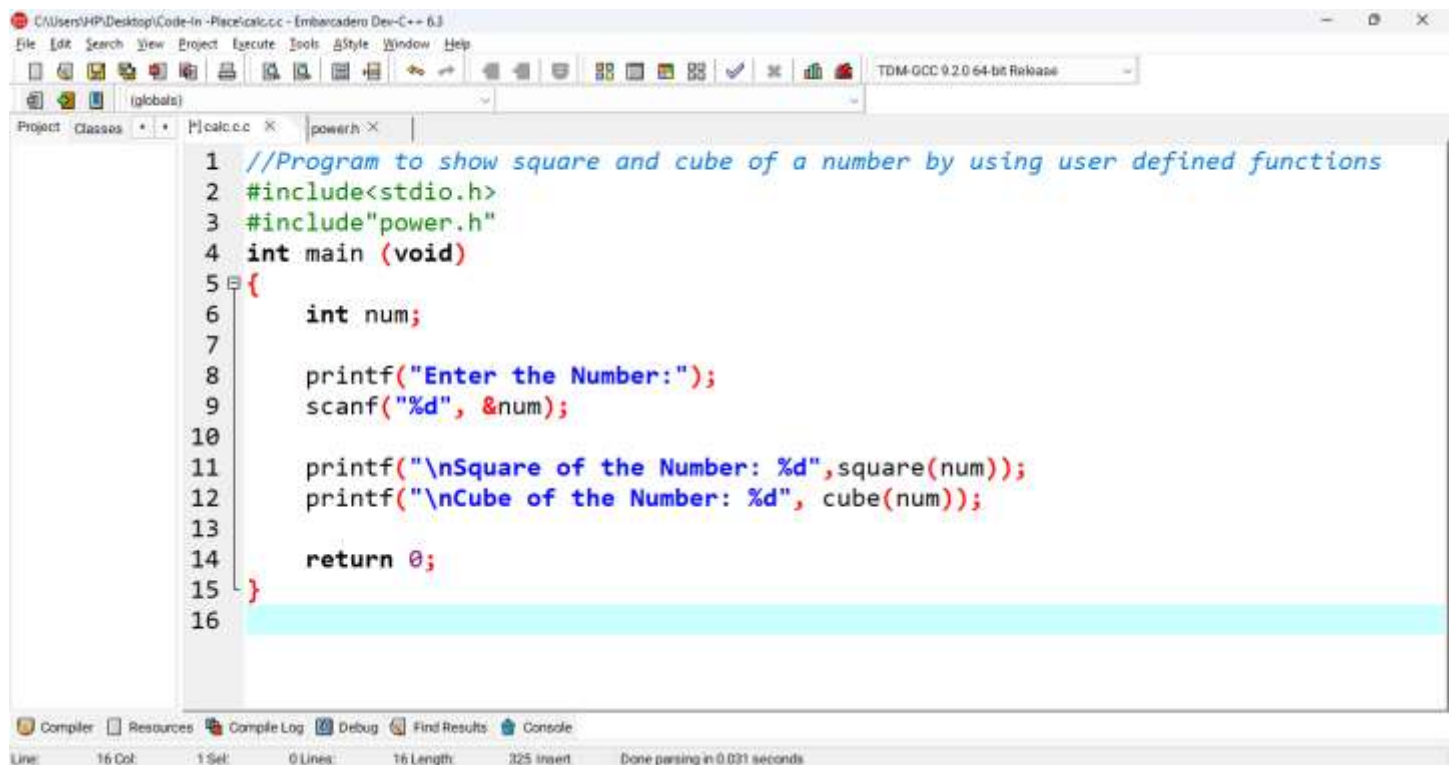
- Create a program to calculate and display:
- Square of a number
- Cube of a number
- Define calculation functions in power.h
- Use these functions in calc.c to display results for a user-inputted number.

HEADER FILE:



```
1
2 int square(int num)
3 {
4     int square;
5     square = num * num;
6     return square;
7 }
8
9 int cube(int num)
10 {
11     int cube;
12     cube = num*num*num;
13     return cube;
14 }
15
```

SOURCE CODE:

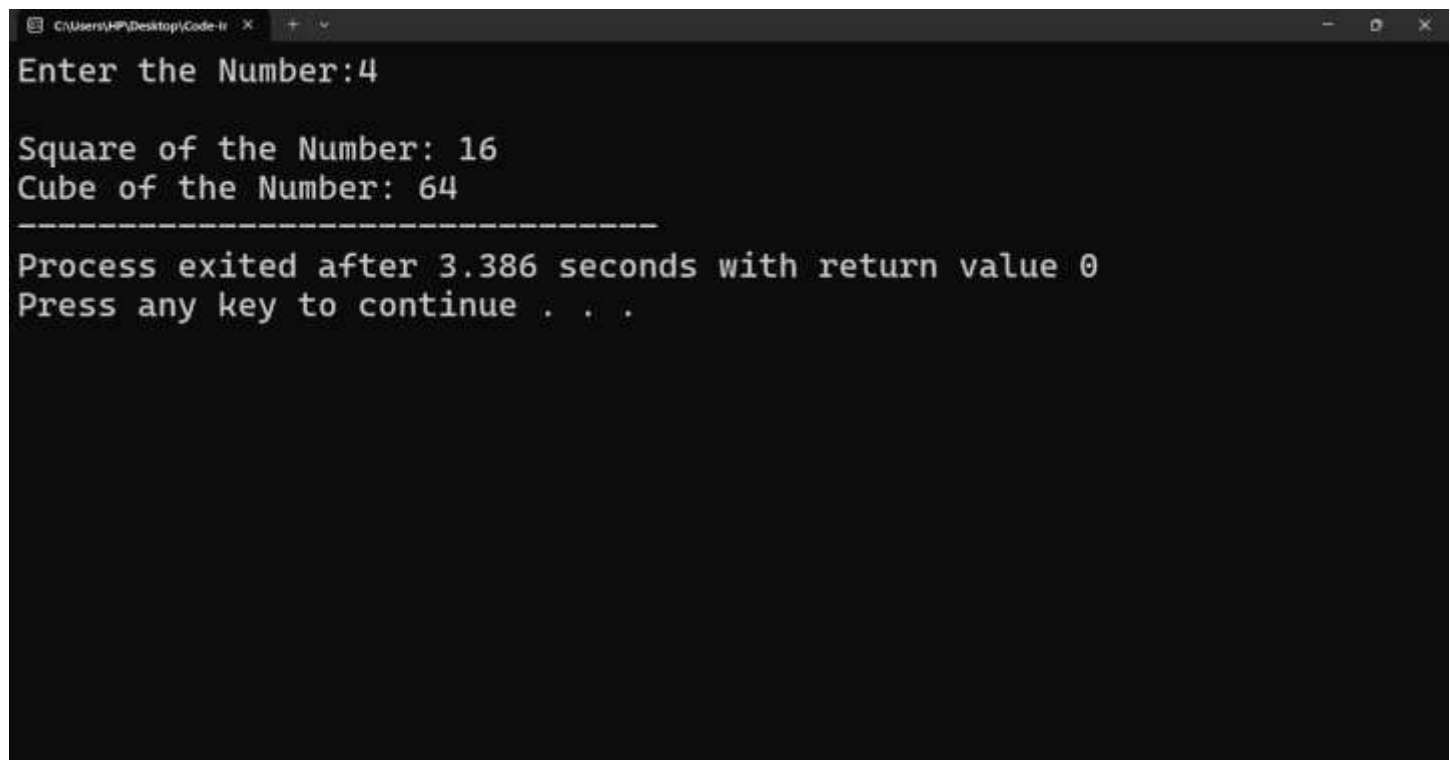


```
1 //Program to show square and cube of a number by using user defined functions
2 #include<stdio.h>
3 #include"power.h"
4 int main (void)
5 {
6     int num;
7
8     printf("Enter the Number:");
9     scanf("%d", &num);
10
11     printf("\nSquare of the Number: %d",square(num));
12     printf("\nCube of the Number: %d", cube(num));
13
14     return 0;
15 }
16
```

Compiler Resources Compile Log Debug Find Results Console

Line: 16 Col: 1 Sel: 0 Lines: 16 Length: 325 Insert Done parsing in 0.031 seconds

OUTPUT:



```
Enter the Number:4

Square of the Number: 16
Cube of the Number: 64
-----
Process exited after 3.386 seconds with return value 0
Press any key to continue . . .
```

QUIZ ANSWERS:

- (1) (B) `return_type function_name(parameter list);`
- (2) (B) A function can call itself.
- (3) (C) HelloHello
- (4) (C) Void
- (5) (C) 15
- (6) (C) It will cause a compilation error
- (7) (C) 5
- (8) (C) 7
- (9) (D) return
- (10) (C) It is the starting point of program execution