

# Module -1

## Logic Building and Problem Solving

## Assignment No. 2

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Q1)

The image shows a Windows 11 desktop environment. The primary focus is a Visual Studio Code (VS Code) editor window. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The Explorer sidebar on the left shows a project structure for 'C++ FULL COURSE' with a subfolder 'Assignment2' containing files q1.c through q9.c and their corresponding executables. The main editor area displays the code for 'q1.c', which includes a C program for converting Celsius to Fahrenheit. The code is as follows:

```
1 #include <stdio.h>
2 int main()
3 {
4
5     float Centi;
6     float Fahr;
7
8     printf("Enter the temprature (Centigrade) : ");
9     scanf("%f", &Centi);
10
11     Fahr = (Centi * 9 / 5) + 32;
12
13     printf("%f%s", Fahr, " degrees Fahrenheit.");
14
15     return 0;
16 }
```

The bottom of the VS Code window features a panel with 'PROBLEMS', 'OUTPUT', 'TERMINAL', and 'DEBUG CONSOLE' tabs. The 'TERMINAL' tab is active, showing a Windows command prompt session. The commands and output are:

```
PS N:\C++ Full Course\Assignment2> cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { .\q1 }
Enter the temprature (Centigrade) : 0
32.000000 degrees Fahrenheit.
PS N:\C++ Full Course\Assignment2>
```

Below the VS Code window is the Windows taskbar, which includes the Start button, a search bar, and several pinned application icons: File Explorer, Outlook, Settings, Google Chrome, WhatsApp, VS Code, Edge, and a custom icon. The system tray on the right shows the network, volume, and battery status, along with the date and time: 02:07 PM, 24-03-2023.

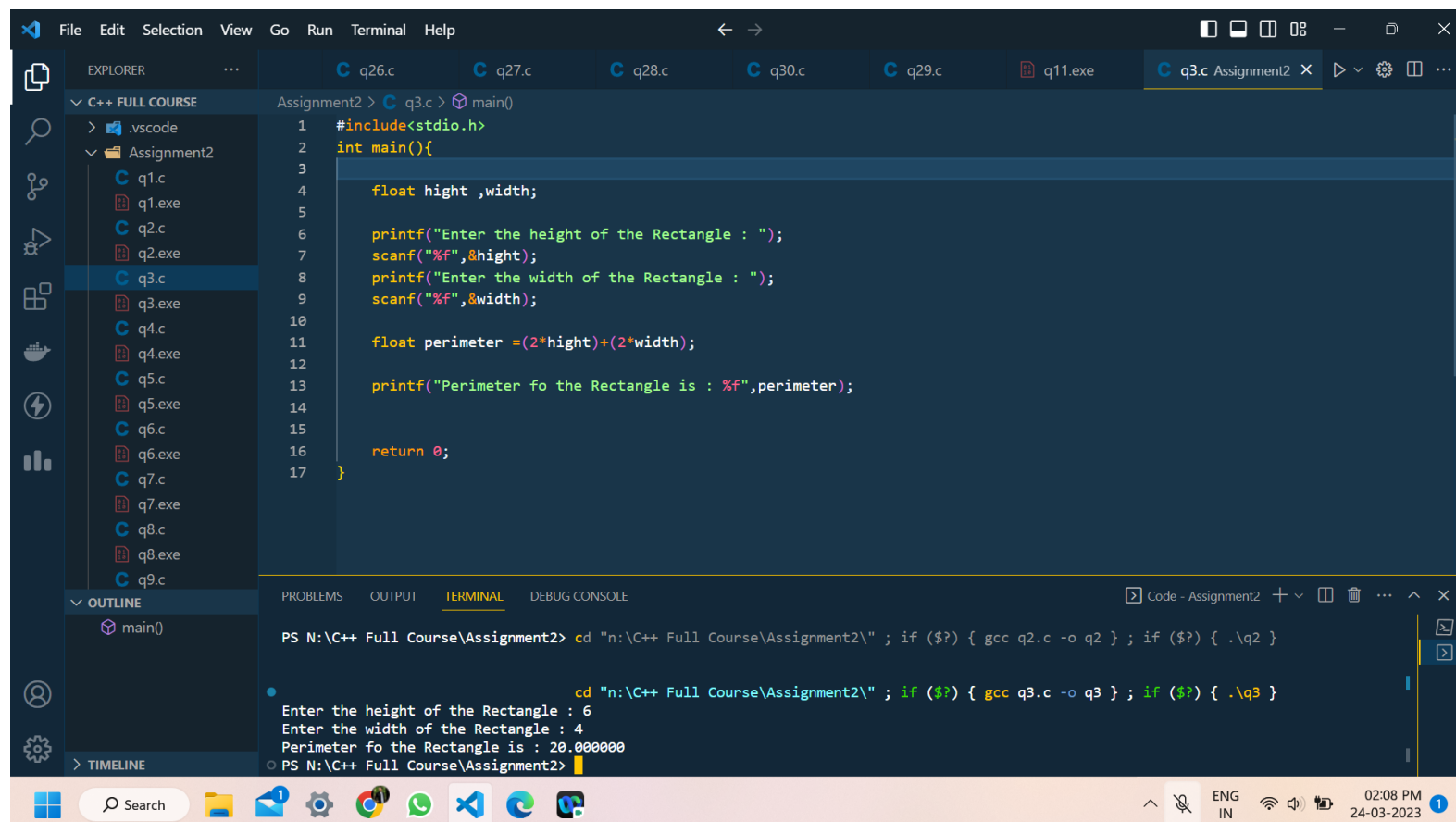
Q2)

```
1 #include <stdio.h>
2 int main()
3 {
4     int total_min;
5
6     printf("Input minutes :");
7     scanf("%d", &total_min);
8
9     int hour = total_min / 60;
10
11     int minit = (total_min) % 60;
12
13     printf("%d%%d%%s", hour, " Hours", minit, " Minutes");
14
15     return 0;
16 }
```

cd "n:\C++ Full Course\Assignment2\" ; if (\$?) { gcc q6.c -o q6 } ; if (\$?) { .\q6 }

Input minutes :450  
7 Hours,30 Minutes  
PS N:\C++ Full Course\Assignment2>

Q3)



```
File Edit Selection View Go Run Terminal Help
EXPLORER
C++ FULL COURSE
  .vscode
  Assignment2
    q1.c
    q1.exe
    q2.c
    q2.exe
    q3.c
    q3.exe
    q4.c
    q4.exe
    q5.c
    q5.exe
    q6.c
    q6.exe
    q7.c
    q7.exe
    q8.c
    q8.exe
    q9.c
  OUTLINE
    main()
  TIMELINE
Assignment2 > q3.c > main()
1  #include<stdio.h>
2  int main(){
3
4      float hight ,width;
5
6      printf("Enter the height of the Rectangle : ");
7      scanf("%f",&hight);
8      printf("Enter the width of the Rectangle : ");
9      scanf("%f",&width);
10
11     float perimeter =(2*hight)+(2*width);
12
13     printf("Perimeter fo the Rectangle is : %f",perimeter);
14
15
16     return 0;
17 }
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

Code - Assignment2

PS N:\C++ Full Course\Assignment2> cd "n:\C++ Full Course\Assignment2\" ; if (\$?) { gcc q2.c -o q2 } ; if (\$?) { .\q2 }

cd "n:\C++ Full Course\Assignment2\" ; if (\$?) { gcc q3.c -o q3 } ; if (\$?) { .\q3 }

Enter the height of the Rectangle : 6  
Enter the width of the Rectangle : 4  
Perimeter fo the Rectangle is : 20.000000

PS N:\C++ Full Course\Assignment2>

02:08 PM 24-03-2023

# Q4)

The image shows a Visual Studio Code editor window with the following components:

- Explorer:** Displays the project structure. The root is "C++ FULL COURSE", containing ".vscode" and "Assignment2". "Assignment2" contains files q1.c to q9.c and their corresponding .exe files. q4.c is selected.
- Editor:** Shows the code for q4.c. The code is as follows:

```
1 int main()
2 {
3     float km, miles;
4
5     printf("Enter the distance in kmh :");
6
7     scanf("%f", &km); // miles to kilometers formula 1mile = 1.609344km
8
9     miles = km * 0.6213712;
10
11     printf("%f%s", miles, " miles per hour");
12
13     return 0;
14 }
15
```
- Terminal:** Shows the command prompt output. The command executed is `cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q4.c -o q4 } ; if ($?) { .\q4 }`. The output shows the program running, prompting for input, receiving '15', and outputting '9.320568 miles per hour'.

Q5)

The screenshot shows the Visual Studio Code interface with a C++ project named 'Assignment2'. The Explorer sidebar on the left shows a folder structure with files q1.c through q9.c and their corresponding .exe files. The main editor displays the code for q5.c, which is a C++ program that takes hours and minutes as input and calculates the total minutes. The code is as follows:

```
1 #include<stdio.h>
2 int main(){
3     float min,hour;
4
5     printf("Input Hours :");
6     scanf("%f",&hour);
7
8     printf("Input minutes :");
9     scanf("%f",&min);
10
11     float total_min = hour*60+min;
12     printf("Total: %d",(int)total_min);
13
14
15
16
17     return 0;
18 }
```

The TERMINAL panel at the bottom shows the execution of the program. It displays the commands used to compile and run the program, along with the output. The output shows that the input hours were 5 and input minutes were 60, resulting in a total of 360 minutes.

```
PS N:\C++ Full Course\Assignment2> cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q4.c -o q4 } ; if ($?) { .\q4 }
cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q5.c -o q5 } ; if ($?) { .\q5 }

Input Hours :5
Input minutes :60
Total: 360
PS N:\C++ Full Course\Assignment2>
```

The Windows taskbar at the bottom shows the system clock as 02:09 PM on 24-03-2023.

Q6)

The screenshot shows the Visual Studio Code interface with a C++ project named 'Assignment2'. The Explorer panel on the left shows the file structure, including a folder 'Assignment2' containing files q1.c through q9.c and their corresponding executables. The main editor displays the code for 'q6.c', which is a C program that takes an input in minutes and outputs the equivalent hours and minutes. The code is as follows:

```
1 #include <stdio.h>
2 int main()
3 {
4     int total_min;
5
6     printf("Input minutes :");
7     scanf("%d", &total_min);
8
9     int hour = total_min / 60;
10
11     int minit = (total_min) % 60;
12
13     printf("%d%s%d%s", hour, " Hours,", minit, " Minutes");
14
15     return 0;
16 }
```

The TERMINAL panel at the bottom shows the command prompt output for running the program. The command executed is `cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q6.c -o q6 } ; if ($?) { .\q6 }`. The output shows the program running and displaying the result for an input of 450 minutes: `Input minutes :450` followed by `7 Hours,30 Minutes`. The status bar at the bottom indicates the system is in English (IN) and the date is 24-03-2023.

Q7)

The image shows a Visual Studio Code editor window with a C++ project named "Assignment2". The file explorer on the left shows a directory structure with files q1.c through q9.c and their corresponding .exe files. The main editor displays the code for q7.c, which is a C++ program that takes user input for name, lastname, and DOB, and prints them. The terminal at the bottom shows the command to compile and run the program, and the output of the program execution.

```
1 #include<stdio.h>
2 int main(){
3     char name[20], lastname[30];
4     int year;
5
6     printf("Enter Your Name :");
7     scanf("%s",name);
8     printf("Enter Your Lastname :");
9     scanf("%s",lastname);
10
11     printf("Enter Your DOB :");
12     scanf("%d",&year);
13
14     printf("%s %s ",name,lastname);
15
16     printf("%d",year);
17
18
19
20     return 0;
21 }
```

Terminal Output:

```
cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q7.c -o q7 } ; if ($?) { .\q7 }
Enter Your Name :Nikhil
Enter Your Lastname :Ausekar
Enter Your DOB :2000
Nikhil Ausekar 2000
PS N:\C++ Full Course\Assignment2>
```

Q8)

The screenshot displays the Visual Studio Code interface with a C++ project named 'Assignment2'. The Explorer sidebar on the left shows the project structure, including source files (q1.c to q9.c) and executables (q1.exe to q9.exe). The main editor window shows the code for 'q8.c', which is a C++ program that reads three integers from the user and prints their sum. The code is as follows:

```
1 #include<stdio.h>
2
3 int main(){
4
5     int a,b,c,d;
6
7     printf("Enter three numbers separated by comma : ");
8     scanf("%d,%d,%d",&a,&b,&c);
9
10    d = a+b+c;
11
12    printf("The sum of given numbers : %d",d);
13
14    return 0;
15 }
```

The TERMINAL panel at the bottom shows the command prompt output:

```
cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q8.c -o q8 } ; if ($?) { .\q8 }
Enter three numbers separated by comma : 2,3,4
The sum of given numbers : 9
PS N:\C++ Full Course\Assignment2>
```

The Windows taskbar at the bottom indicates the system time is 02:10 PM on 24-03-2023.



Q9)

The screenshot displays the Visual Studio Code interface with a C++ project named 'Assignment2'. The Explorer panel on the left shows the file structure, including source files (q3.c, q4.c, q5.c, q6.c, q7.c, q8.c, q9.c) and executables (q3.exe, q4.exe, q5.exe, q6.exe, q7.exe, q8.exe, q9.exe). The main() function is selected in the Outline panel.

The main editor shows the source code for q9.c:

```
1 #include<stdio.h>
2
3 int main(){
4
5     int a,b;
6     float c;
7
8     printf("Enter any two numbers separated by comma :");
9     scanf("%d,%d",&a,&b);
10
11     printf("The sum of the given numbers :%d\n",a+b);
12
13     printf("The difference of the given numbers :%d\n",a-b);
14
15     printf("The product of the given numbers :%d\n",a*b);
16
17     printf("The quotient of the given numbers :%lf\n",c=(float)a/(float)b);
18
19
20     return 0;
21 }
```

The TERMINAL panel at the bottom shows the command prompt output:

```
cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q9.c -o q9 } ; if ($?) { .\q9 }
Enter any two numbers separated by comma :23,45
The sum of the given numbers :68
The difference of the given numbers :-22
The product of the given numbers :1035
The quotient of the given numbers :0.511111
PS N:\C++ Full Course\Assignment2>
```

The Windows taskbar at the bottom shows the system clock as 02:10 PM on 24-03-2023.

# Q10)

```
File Edit Selection View Go Run Terminal Help
EXPLORER
C++ FULL COURSE
  q3.exe
  q4.c
  q4.exe
  q5.c
  q5.exe
  q6.c
  q6.exe
  q7.c
  q7.exe
  q8.c
  q8.exe
  q9.c
  q9.exe
  q10.c
  q10.exe
  question1.exe
  Assignment3
  Assignment4
  C++
OUTLINE
  main()
TIMELINE
Assignment2 > q10.c > main()
1  #include <stdio.h>
2  #include <math.h>
3  int main()
4  {
5
6      int ang_a, ang_b;
7      int total = 180;
8      int ang_c;
9
10     printf("Enter two angles of triangle separated by comma :");
11
12     scanf("%d,%d", &ang_a, &ang_b);
13
14     ang_c = total - (ang_a + ang_b);
15
16     printf("Third angle of the triangle :%d", ang_c);
17
18     return 0;
19 }
```

PROBLEMS OUTPUT **TERMINAL** DEBUG CONSOLE

Code - Assignment2

```
PS N:\C++ Full Course\Assignment2> cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q10.c -o q10 } ; if ($?) { .\q10 }
cd "n:\C++ Full Course\Assignment2\" ; if ($?) { gcc q10.c -o q10 } ; if ($?) { .\q10 }
Enter two angles of triangle separated by comma :34,56
Third angle of the triangle :90
PS N:\C++ Full Course\Assignment2>
```

02:11 PM 24-03-2023