

# Module -1

## Logic Building and Problem Solving

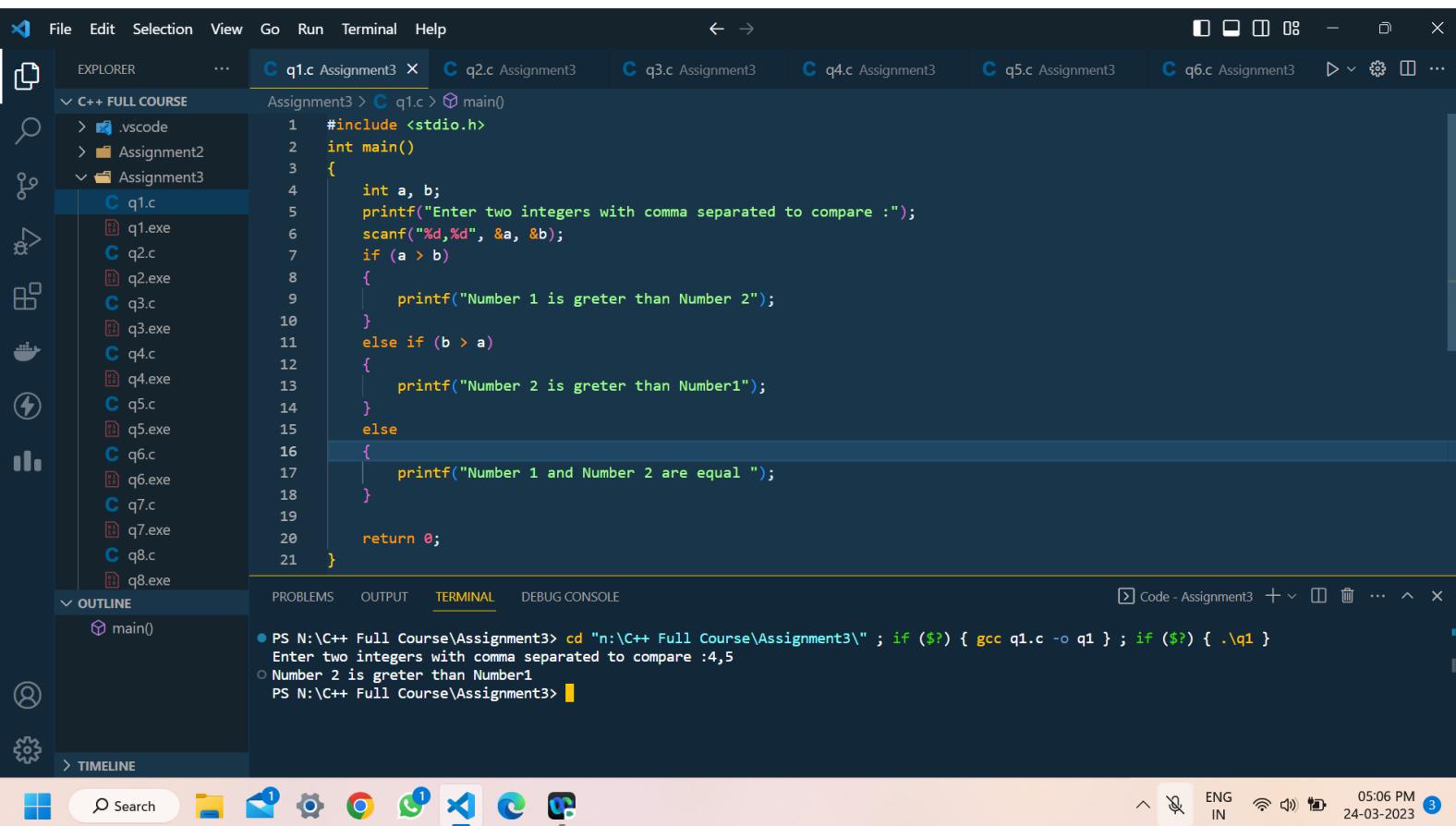
### Assignment No. 3

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#### Q1)



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder structure under "C++ FULL COURSE" named "Assignment3". Inside "Assignment3", there are files: .vscode, Assignment2, and Assignment3. Assignment3 contains sub-folders for q1.c, q2.c, q3.c, q4.c, q5.c, q6.c, q7.c, q8.c, and their corresponding .exe files.
- Code Editor:** The main editor window displays the content of q1.c. The code is as follows:

```
#include <stdio.h>
int main()
{
    int a, b;
    printf("Enter two integers with comma separated to compare :");
    scanf("%d,%d", &a, &b);
    if (a > b)
    {
        printf("Number 1 is greater than Number 2");
    }
    else if (b > a)
    {
        printf("Number 2 is greater than Number1");
    }
    else
    {
        printf("Number 1 and Number 2 are equal ");
    }
    return 0;
}
```

- Terminal:** The terminal tab shows the following command-line session:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { ./q1 }
Enter two integers with comma separated to compare :4,5
Number 2 is greater than Number1
PS N:\C++ Full Course\Assignment3>
```
- Bottom Bar:** Includes icons for search, file, email, settings, browser, and others. Status bar at the bottom right shows "05:06 PM 24-03-2023".

## Q2)

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The title bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The main area displays a C++ file named q2.c under the Assignment3 folder. The code checks if a number is odd or even and prints the result. The terminal below shows the execution of the program, entering 45 and receiving output indicating it's an odd number.

```
#include<stdio.h>
int main (){
    int a;
    printf("Enter Number to check odd or not :");
    scanf("%d",&a);
    if(a%2==0){
        printf("%d is an even number");
    }
    else{
        printf("%d is an odd number");
    }
    return 0;
}
```

TERMINAL

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { ./q1 }

●          cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q2.c -o q2 } ; if ($?) { ./q2 }
Enter Number to check odd or not :45
○ 45 is an odd number
PS N:\C++ Full Course\Assignment3>
```

### Q3)

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs: q1.c Assignment3, q2.c Assignment3, q3.c Assignment3 (which is the active tab), q4.c Assignment3, q5.c Assignment3, and q6.c Assignment3. The left sidebar has sections for EXPLORER, C++ FULL COURSE, and OUTLINE. The C++ FULL COURSE section shows files like .vscode, Assignment2, Assignment3 (containing 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), and a TIMELINE section showing main(). The central workspace displays the code for q3.c:

```
3  {
4      int a;
5      printf("Enter Number to check +ve or -ve:");
6      scanf("%d", &a);
7      if (a > 0)
8      {
9          printf("%d%s", a, " is an +ve number");
10     }
11    else
12    {
13        printf("%d%s", a, " is an -ve number");
14    }
15
16
17    return 0;
18 }
```

The bottom navigation bar includes PROBLEMS, OUTPUT, TERMINAL (which is selected), and DEBUG CONSOLE. The terminal pane shows the command line output:

```
cd "n:\C++ Full Course\Assignment3" ; if ($?) { gcc q3.c -o q3 } ; if ($?) { ./q3 }
● Enter Number to check +ve or -ve:-100
-100 is an -ve number
○ PS N:\C++ Full Course\Assignment3>
```

The status bar at the bottom right shows ENG IN, 05:07 PM, 24-03-2023, and a battery icon.

Q4)

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs: q1.c Assignment3, q2.c Assignment3, q3.c Assignment3, q4.c Assignment3 (which is the active tab), q5.c Assignment3, and q6.c Assignment3. The left sidebar has sections for EXPLORER, C++ FULL COURSE, and OUTLINE. The C++ FULL COURSE section is expanded, showing files like .vscode, Assignment2, Assignment3, q1.c, q1.exe, q2.c, q2.exe, q3.c, q3.exe, q4.c (selected), q4.exe, q5.c, q5.exe, q6.c, q6.exe, q7.c, q7.exe, q8.c, and q8.exe. The OUTLINE section shows the main() function. The main editor area contains the following C code:

```
#include <stdio.h>
int main(){
    int a;
    printf("Enter year to check whether leap or not :");
    scanf("%d",&a);
    if(a%4==0){
        printf("%d is leap a year");
    }else{
        printf("%d is not a leap year");
    }
    return 0;
}
```

The bottom navigation bar includes PROBLEMS, OUTPUT, TERMINAL (which is selected), and DEBUG CONSOLE. The TERMINAL tab shows command-line output:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q4.c -o q4 } ; if ($?) { ./q4 }
Enter year to check whether leap or not :2045
2045 is not a leap year
PS N:\C++ Full Course\Assignment3>
```

## Q5)

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The title bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The Explorer sidebar on the left lists files under 'C++ FULL COURSE' and 'Assignment3'. The main editor area displays the code for 'q5.c' which checks if a user is eligible to vote based on their age. The terminal below shows the command to run the program and its output.

```
#include <stdio.h>
int main()
{
    int age;
    printf("Enter your age to check eligibility :");
    scanf("%d", &age);

    if (age >= 18)
    {
        printf("%s", "Congratulation! You are eligible for casting your vote.");
    }
    else
    {
        printf("Sorry, according to Indian Constitution you can not vote until you become 18 years old.");
    }

    return 0;
}
```

TERMINAL

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q4.c -o q4 } ; if ($?) { ./q4 }

cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q5.c -o q5 } ; if ($?) { ./q5 }

● Enter your age to check eligibility :23
○ Congratulation! You are eligible for casting your vote.
PS N:\C++ Full Course\Assignment3>
```

## Q6)

The screenshot shows the Visual Studio Code interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Standard icons for file operations.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The "Assignment3" folder is expanded, showing files q1.c through q8.c, their corresponding executables (q1.exe to q8.exe), and the current file q6.c.
- Code Editor:** Displays the content of q6.c. The code reads an integer m from the user, prints its value, and returns 0.

```
#include <stdio.h>
int main()
{
    int m;
    printf("Enter the value of int m :");

    scanf("%d", &m);
    if (m > 0)
    {
        printf("The value of n = 1");
    }
    else
    {
        printf("The value of n = -1");
    }
    return 0;
}
```

- Terminal:** Shows a command-line session in a terminal window:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q6.c -o q6 } ; if ($?) { ./q6 }
Enter the value of int m :45
○ The value of n = 1
PS N:\C++ Full Course\Assignment3>
```
- Bottom Status Bar:** Includes icons for search, file, settings, browser, and others, along with system status like battery level and date/time (24-03-2023, 05:10 PM).

## Q7)

The screenshot shows a Visual Studio Code (VS Code) interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The file "q7.c" is selected and highlighted in blue. Other files include q3.c, q4.c, q5.c, q6.c, q7.c, q8.c, q9.c, and q10.c, along with their corresponding .exe and .vscode files.
- Code Editor:** Displays the content of "q7.c". The code uses conditional statements to determine a person's height classification based on their input height in cm. The code is as follows:

```
#include<stdio.h>
int main(){
    int hight;
    printf("Enter your hight in cm :");
    scanf("%d",&hight);

    if(hight<=135){
        printf("The person is Dwarf.");
    }else if(135<hight&&hight<=150){
        printf("The person is Short.");
    }else if (150<hight&&hight<=170){
        printf("The person is Average.");
    }else if (170<hight){
        printf("The person is Tall.");
    }
    return 0;
}
```

- Terminal:** Shows the command-line output of running the program. The user inputs "172" and the program outputs "The person is Tall.".
- Bottom Bar:** Includes icons for search, file, settings, and other common tools, along with system status indicators like battery level and signal strength.

## Q8)

The screenshot shows a Microsoft Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs: q3.c Assignment3, q4.c Assignment3, q5.c Assignment3, q6.c Assignment3, q4.exe, q7.c Assignment3, q8.c Assignment3 (which is the active tab), and q9.c Assignment3. The left sidebar has sections for EXPLORER, OUTLINE, and TIMELINE. The main area displays a C++ code file (q8.c) with the following content:

```
#include <stdio.h>
int main()
{
    int a, b, c;
    printf("Enter three number with comma :\n");
    scanf("%d,%d,%d", &a, &b, &c);

    printf("%s%d, %s%d, %s%d\n", "1st Number = ", a, "2nd Number = ", b, "3rd Number = ", c);

    if (a >= b && a >= c)
    {
        printf("%s\n", "The 1st Number is the greatest among three");
    }
    else if (b >= a && b >= c)
    {
        printf("%s\n", "The 2nd Number is the greatest among three");
    }
    else
    {
        printf("%s\n", "The 3rd Number is the greatest among three");
    }
    return 0;
}
```

The terminal tab at the bottom shows the following command and output:

```
cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q8.c -o q8 } ; if ($?) { .\q8 }

Enter three number with comma :
45,56,78
1st Number = 45, 2nd Number = 56, 3rd Number = 78
The 3rd Number is the greatest among three
```

The status bar at the bottom right shows the date and time: 24-03-2023 05:17 PM.

## Q9)

The screenshot shows a Microsoft Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs: q3.c Assignment3, q4.c Assignment3, q5.c Assignment3, q6.c Assignment3, q4.exe, q7.c Assignment3, q8.c Assignment3, and q9.c Assignment3 (which is currently active). The left sidebar has sections for EXPLORER, C++ FULL COURSE, OUTLINE, and TIMELINE. The main editor area contains the following C++ code:

```
#include<stdio.h>
int main(){
    int x,y;
    printf("Enter two digit with space separated :");
    scanf("%d%d", &x, &y);

    if(x>0&&y>0){
        printf("%d,%d", "The coordinate point (" ,x,y,)lies in the First quadrant.");
    }if(x<0&&y>0){

        printf("%d,%d", "The coordinate point (" ,x,y,)lies in the Second quadrant.");
    }if(x<0&&y<0){

        printf("%d,%d", "The coordinate point (" ,x,y,)lies in the Third quadrant.");
    }if(x>0&&y<0){

        printf("%d,%d", "The coordinate point (" ,x,y,)lies in the Fourth quadrant.");
    }
    return 0;
}
```

The terminal below the editor shows the command line and its output:

```
cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q9.c -o q9 } ; if ($?) { .\q9 }

Enter two digit with space separated :45 67
○ The coordinate point (45,67)lies in the First quadrant.
PS N:\C++ Full Course\Assignment3>
```

The bottom status bar shows system icons and the date/time: ENG IN 05:17 PM 24-03-2023.

## Q10)

```
#include <stdio.h>

int main()
{
    int roll_no, marks_p, marks_ch, marks_c;
    char name[20];
    printf("%s", "Input the Roll Number of the student :");
    scanf("%d", &roll_no);

    printf("%s", "Input the Name of the Student :");
    scanf("%s", &name);

    printf("Input the marks of Physics, Chemistry, Computer Application:");
    scanf("%d%d%d",&marks_p,&marks_ch,&marks_c);
    float percent = ((marks_p + marks_c + marks_ch) / 3.0);
    printf("Roll No :%d\n", roll_no);
    printf("Name of the Studnet :%s\n", name);
    printf("Marks in Physics :%d\n", marks_p);
    printf("Marks in Chemistry :%d\n", marks_ch);
    printf("Marks in Computer :%d\n", marks_c);
    printf("Total Marks :%d\n", marks_p + marks_c + marks_ch);
    printf("Percentage :%.2f\n", percent);
    if (percent >= 80)
    {
```

```

        printf("Division = %s", "First");

    }

else

{

    printf("Division = %s", "Second");

}

return 0;

}

```

The screenshot shows a code editor interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for Save, Undo, Redo, Cut, Copy, Paste, Find, Select All, and others.
- Left Sidebar:**
  - EXPLORER:** Shows a tree view of files in the 'C++ FULL COURSE' folder, including q1.c through q13.c, executables q1.exe through q13.exe, and assignments q10.c, q11.c, q12.c.
  - OUTLINE:** Shows the main() function under the q10.c file.
  - TIMELINE:** Shows a single entry for q10.c.
- Code Editor:** The active tab is 'q10.c Assignment3'. The code is as follows:

```

#include <stdio.h>
int main()
{
    int roll_no, marks_p, marks_ch, marks_c;
    char name[20];

    printf("Input the Roll Number of the student : ");
    scanf("%d", &roll_no);

    printf("Input the Name of the Student : ");
    scanf("%s", &name);

    printf("Input the marks of Physics, Chemistry, Computer Application:");
    scanf("%d%d%d", &marks_p, &marks_ch, &marks_c);

    float percent = ((marks_p + marks_c + marks_ch) / 3.0);

    printf("Roll No :%d\n", roll_no);
    printf("Name of the Studnet :%s\n", name);
    printf("Marks in Physics :%d\n", marks_p);
    printf("Marks in Chemistry :%d\n", marks_ch);

```
- Terminal:** Shows the command-line output of the program execution. It asks for roll number and name, then prints them and the calculated percentage.
- Bottom Bar:** Includes icons for search, file operations, and system status (language, battery, date).

## **Q11)**

```
#include<stdio.h>

int main(){
    int temp;
    printf("Enter Temperature in Centigrade :");
    scanf("%d",&temp);

    if(temp<0){
        printf("Freezing weather.\n");

    }else if(10>=temp){

        printf("Very Cold weather.\n");

    }else if(temp<=20){

        printf("Cold weather.\n");

    }else if(temp<=30){

        printf("Normal in Temp.\n");

    }else if(temp<=40){
```

```

printf("Its Hot.");

}else if(temp>=40){

printf("Its Very Hot.");

}

return 0;
}

```

The screenshot shows a code editor interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for search, file operations, and other common functions.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The file "q11.c" is currently selected.
- Code Editor:** Displays the source code for "q11.c" (Assignment3). The code includes an include directive for stdio.h, a main function that reads a temperature from the user, and a series of if-else statements to determine the weather condition based on the temperature.
- Terminal:** Shows the command-line interface output. It shows the user navigating to the assignment directory, compiling the program (gcc q11.c -o q11), running it (./q11), and entering a temperature of 45. The output indicates that the weather is "Very Hot".
- Bottom Status Bar:** Shows system information like battery level, network, and date/time (24-03-2023, 05:37 PM).

```

File Edit Selection View Go Run Terminal Help
EXPLORER ... xe C q7.c Assignment3 C q8.c Assignment3 C q9.c Assignment3 C q10.c Assignment3 C q11.c Assignment3 X C q12.c Assignment3 C q13.c Assignment3 D v ... x
C++ FULL COURSE Assignment3 > C q11.c > main()
1 #include<stdio.h>
2
3 int main(){
4     int temp;
5     printf("Enter Temperature in Centigrade :");
6     scanf("%d",&temp);
7
8     if(temp<0){
9         printf("Freezing weather.\n");
10    }else if(10>=temp){
11        printf("Very Cold weather.\n");
12    }else if(temp<=20){
13        printf("Cold weather.\n");
14    }else if(temp<=30){
15        printf("Normal in Temp.\n");
16    }else if(temp<=40){
17        printf("Its Hot.");
18    }
19
20
21
22
23
24
25
26
Code - Assignment3 + ... ^ x
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q11.c -o q11 } ; if ($?) { ./q11 }
Enter Temperature in Centigrade :45
Its Very Hot.
PS N:\C++ Full Course\Assignment3> 

```

## **Q12)**

```
#include <stdio.h>

int main()
{
    float angle1, angle2, angle3;
    printf("Enter the angles of the triangle :");
    scanf("%f%f%f", &angle1, &angle2, &angle3);

    if (angle1 + angle2 + angle3 == 180)
    {
        if (angle1 == angle2 && angle1 == angle3)
        {
            printf("Triangle is Equilateral Triangle");
        }
        else if (angle1 == angle2 || angle1 == angle3 || angle2 == angle3)
        {
            printf("Triangle is isosceles Triangle");
        }
        else
        {

```

```

        printf("Trianble is Scalene Triangle");

    }

}

else

{

    printf("Enter Valid angle Value");

}

return 0;

}

```

The screenshot shows the Visual Studio Code interface. The code editor displays a C program for determining triangle types based on three angles. The terminal below shows the program's execution and output.

```

File Edit Selection View Go Run Terminal Help ← →
EXPLORER xe C q7.c Assignment3 C q8.c Assignment3 C q9.c Assignment3 C q10.c Assignment3 C q11.c Assignment3 C q12.c Assignment3 X C q13.c Assignment3 D v ⚙ ...
C++ FULL COURSE Assignment3 > C q12.c > main()
1 #include <stdio.h>
2
3 int main()
4 {
5     float angle1, angle2, angle3;
6     printf("Enter the angles of the triangle :");
7     scanf("%f%f%f", &angle1, &angle2, &angle3);
8
9     if (angle1 + angle2 + angle3 == 180)
10    {
11        if (angle1 == angle2 && angle1 == angle3)
12        {
13            printf("Triangle is Equilateral Triangle");
14        }
15        else if (angle1 == angle2 || angle1 == angle3 || angle2 == angle3)
16        {
17            printf("Triangle is isosceles Triangle");
18        }
19        else
20        {
21            printf("Trianble is Scalene Triangle");
22        }
23    }
24    else
25    {
26        printf("Enter Valid angle Value");
27    }
}

```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if (\$?) { gcc q12.c -o q12 } ; if (\$?) { .\q12 }
Enter the angles of the triangle :45 45 90
Triangle is isosceles Triangle
PS N:\C++ Full Course\Assignment3>

Search

ENG IN 05:37 PM 24-03-2023 3

### **Q13)**

```
#include <stdio.h>

int main()
{
    float angle1, angle2, angle3;
    printf("Enter the angles of the triangle :");
    scanf("%f%f%f", &angle1, &angle2, &angle3);

    if (angle1 + angle2 + angle3 == 180)
    {
        printf("The triangle is valid.");
    }
    else
    {
```

```
    printf("The triangle is not valid");

}

return 0;

}
```

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs for different files, with 'q13.c Assignment3' currently active.

The left sidebar features the Explorer view, which lists various C++ files and executables under a 'C++ FULL COURSE' folder. The 'q13.c' file is selected. The Outline view shows the main() function.

The main code editor area contains the following C code:

```
#include <stdio.h>
int main()
{
    float angle1, angle2, angle3;
    printf("Enter the angles of the triangle :");
    scanf("%f%f%f", &angle1, &angle2, &angle3);

    if (angle1 + angle2 + angle3 == 180)
    {
        printf("The triangle is valid.");
    }
    else
    {
        printf("The triangle is not valid");
    }
    return 0;
}
```

The bottom right corner of the code editor has a status bar with 'Code - Assignment3'. Below the code editor is a terminal window showing the output of running the program:

```
cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q13.c -o q13 } ; if ($?) { .\q13 }
Enter the angles of the triangle :45
45
90
The triangle is valid.
PS N:\C++ Full Course\Assignment3>
```

The taskbar at the bottom of the screen includes icons for File, Search, Folder, Mail, Settings, Google Chrome, GitHub, VS Code, Microsoft Word, and Microsoft Excel. On the far right, there are system status icons for battery, signal, and network, along with the text 'ENG IN' and the date '24-03-2023'.

## Q14)

The screenshot shows a Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** q14.c - C++ Full Course - Visual Studio Code.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The file "q14.c" is selected and highlighted in blue. Other files listed include q8.c, q8.exe, q9.c, q9.exe, q10.c, q10.exe, q11.c, q11.exe, q12.c, q12.exe, q13.c, q13.exe, and q14.c.
- Code Editor:** Displays the C++ code for "q14.c". The code reads a character from input and prints whether it is a digit, alphabet, or special character.

```
#include<stdio.h>
int main(){
    char input;
    printf("Enter a character digit or special character :");
    scanf("%c",&input);

    if(input<=57&&input>=48){
        printf("This is a digit character");
    }
    else if((65<=input&&input<=90)|| (97<=input&&input<=122)){
        printf("This is a alphabet character");
    }
    else{
        printf("This is a special character");
    }
    return 0;
}
```
- Terminal:** Shows the output of running the program. It prompts for input and prints the type of character based on the input provided.

```
Enter a character digit or special character :A
This is a alphabet character
PS D:\C++ Full Course\Assignment3> ./q14.exe
Enter a character digit or special character :@
This is a special character
PS D:\C++ Full Course\Assignment3> ./q14.exe
Enter a character digit or special character :6
This is a digit character
PS D:\C++ Full Course\Assignment3>
```
- Bottom Status Bar:** L1 11, Col 63, Spaces: 4, UTF-8, CRLF, C, Win32, Prettier.
- Bottom Icons:** Search, Settings, Mail, File, Google Chrome, GitHub, VS Code, and others.
- Right Sidebar:** Shows three collapsed code snippets labeled "Code".

## **Q15)**

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

int main()
{
    char input;
    bool x=false;
    printf("Enter a alphabet character :");

    scanf("%c", &input);

    printf("%c",input);

    int arr[12] = {'a','e','i','o','u','A','E','I','O','U'};

    for (int i = 0; i <= 9; i++)
    {
        if (arr[i]==input)
        {
            x= 1;
        }
    }

    if(x==true){
```

```

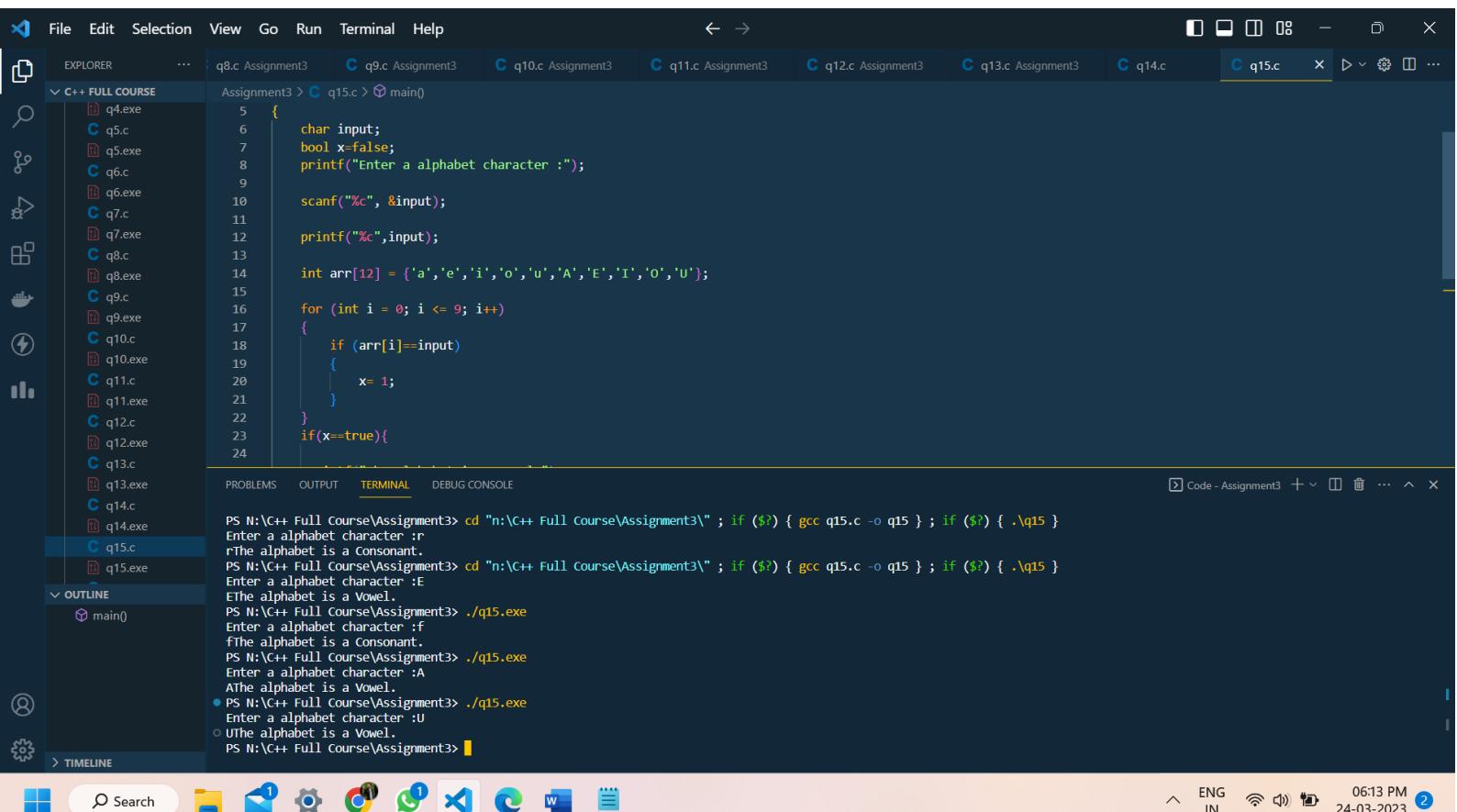
printf("The alphabet is a Vowel.");
}else

printf("The alphabet is a Consonant.");  

return 0;
}

```



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

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Standard icons for file operations like Open, Save, Print, etc.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". Files listed include 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, q11.c, q11.exe, q12.c, q12.exe, q13.c, q13.exe, q14.c, q14.exe, q15.c, and q15.exe. The file "q15.c" is currently selected.
- Code Editor:** Displays the C++ code for determining vowels and consonants. The code uses a character array "arr" containing vowels and compares it with user input "input". It prints "The alphabet is a Vowel." for vowels and "The alphabet is a Consonant." for consonants.
- Terminal:** Shows command-line output for running the program "q15.c" and testing it with different inputs (e.g., 'f', 'A', 'U').
- Bottom Bar:** Includes a search bar, pinned application icons (Google Chrome, WhatsApp, Microsoft Edge, Word, Excel), and system status indicators (language, battery, date/time).

```

5  {
6      char input;
7      bool x=false;
8      printf("Enter a alphabet character :");
9
10     scanf("%c", &input);
11
12     printf("%c",input);
13
14     int arr[12] = {'a','e','i','o','u','A','E','I','O','U'};
15
16     for (int i = 0; i <= 9; i++)
17     {
18         if (arr[i]==input)
19         {
20             x= 1;
21         }
22     }
23     if(x==true){
24
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q15.c -o q15 } ; if ($?) { .\q15 }
Enter a alphabet character :r
rThe alphabet is a Consonant.
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q15.c -o q15 } ; if ($?) { .\q15 }
Enter a alphabet character :E
EThe alphabet is a Vowel.
PS N:\C++ Full Course\Assignment3> ./q15.exe
Enter a alphabet character :f
fThe alphabet is a Consonant.
PS N:\C++ Full Course\Assignment3> ./q15.exe
Enter a alphabet character :A
AThe alphabet is a Vowel.
PS N:\C++ Full Course\Assignment3> ./q15.exe
Enter a alphabet character :U
UThe alphabet is a Vowel.
PS N:\C++ Full Course\Assignment3>

```

## Q16)

```
#include <stdio.h>

int main()
{
    float cost, sell;
    printf("Enter Purchase cost and Selling price ");
    scanf("%f%f", &cost, &sell);

    float diff;
    if ((diff = sell - cost) > 0)
    {
        printf("You booked your profit amount of :%d", (int)diff);
    }
    else
    {
        printf("You booked your loss of :%d", (int)diff);
    }

    return 0;
}
```

The screenshot shows the Microsoft Visual Studio Code (VS Code) interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows multiple tabs: Assignment3, q11.c Assignment3, q12.c Assignment3, q13.c Assignment3, q14.c, q15.c, q16.exe, q15.exe, and q16.c. The left sidebar has sections for EXPLORER, C++ FULL COURSE, OUTLINE, and TIMELINE. The main editor area displays the following C code:

```
1 #include <stdio.h>
2
3 int main()
4 {
5
6     float cost, sell;
7     printf("Enter Purchase cost and Selling price ");
8     scanf("%f%f", &cost, &sell);
9
10    float diff;
11    if ((diff = sell - cost) > 0)
12    {
13        printf("You booked your profit amount of :%d", (int)diff);
14    }
15    else
16    {
17        printf("You booked your loss of :%d", (int)diff);
18    }
19
20    return 0;
21
22 }
```

The terminal tab at the bottom shows the following command-line interaction:

- cd "n:\C++ Full Course\Assignment3" ; if (\$?) { gcc q16.c -o q16 } ; if (\$?) { ./q16 }
- Enter Purchase cost and Selling price 500 700
- You booked your profit amount of :200
- PS N:\C++ Full Course\Assignment3> ./q16.exe
- Enter Purchase cost and Selling price 700 500
- You booked your loss of :-200
- PS N:\C++ Full Course\Assignment3> ./q16.exe
- Enter Purchase cost and selling price 1200 1300
- You booked your profit amount of :100
- PS N:\C++ Full Course\Assignment3>

The status bar at the bottom right shows ENG IN, 06:19 PM, 24-03-2023, and a notification icon.

## Q17

The screenshot shows a C++ development environment with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for search, file operations, and other common functions.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The current file is "q17.c". Other files listed include q8.c, q8.exe, q9.c, q9.exe, q10.c, q10.exe, q11.c, q11.exe, q12.c, q12.exe, q13.c, q13.exe, q14.c, q14.exe, q15.c, q15.exe, q16.c, q16.exe, and q17.c (which is selected).
- Code Editor:** Displays the content of "q17.c". The code prints integers from 1 to 10.

```
#include <stdio.h>
int main()
{
    for (int i = 1; i <= 10; i++)
    {
        printf("%d ", i);
    }
    return 0;
}
```
- Terminal:** Shows a command-line session:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q17.c -o q17 } ; if ($?) { ./q17 }
PS N:\C++ Full Course\Assignment3>
```
- Status Bar:** Shows system information like ENG IN, battery level, and the date/time (24-03-2023 06:19 PM).

## Q18)

The screenshot shows a C++ development environment with the following details:

- File Explorer:** Shows a folder structure for "C++ FULL COURSE" containing files q11.exe through q20.exe.
- Code Editor:** Displays the content of q18.c, which contains the following C code:

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int sum = 0;
6     printf("The first 10 natural number are : \n");
7
8     for (int i = 1; i <= 10; i++)
9     {
10         sum += i;
11
12         printf("%d ", i);
13     }
14     printf("\nThe Sum is : %d", sum);
15
16     return 0;
17 }
```
- Terminal:** Shows the output of running the program:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q18.c -o q18 } ; if ($?) { ./q18 }
The first 10 natural number are :
1 2 3 4 5 6 7 8 9 10
The Sum is : 55
PS N:\C++ Full Course\Assignment3>
```
- System Tray:** Shows icons for search, file explorer, settings, browser, task manager, and others.
- System Status:** Shows language (ENG IN), battery level, signal strength, and the date/time (24-03-2023, 06:20 PM).

## Q19)

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The title bar includes File, Edit, Selection, View, Go, Run, Terminal, Help, and several tabs for .c and .exe files. The Explorer sidebar lists various C/C++ files and executables. The main editor area displays the following C code:

```
#include <stdio.h>
int main()
{
    int sum = 0, n;
    printf("Enter number :");
    scanf("%d", &n);
    printf("The first %d natural number is : ", n);

    for (int i = 1; i <= n; i++)
    {
        sum += i;
        printf("%d ", i);
    }
    printf("\nThe Sum of Natural Number upto %d terms : ", sum);
    return 0;
}
```

The terminal tab shows the execution of the program:

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q19.c -o q19 } ; if ($?) { ./q19 }
Enter number :20
The first 20 natural number is : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
The Sum of Natural Number upto 20 terms : 210
PS N:\C++ Full Course\Assignment3>
```

The status bar at the bottom shows search, file, settings, and other icons, along with system information like ENG IN, battery level, and the date/time 06:20 PM 24-03-2023.

## Q20)

The screenshot shows a Microsoft Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows the current file is q20.c. The Explorer sidebar on the left lists files in the 'C++ FULL COURSE' folder, including q11.exe through q22.exe, and q20.c is selected. The 'OUTLINE' section shows the main() function. The main editor area contains the following C code:

```
#include <stdio.h>
int main()
{
    int input, n, sum = 0;
    float avg;

    for (int i = 0; i <= 9; i++)
    {
        printf("Number-%ds", i + 1, ": ");
        scanf("%d", &n);
        sum = sum + n;
    }
    avg = sum/10.0;

    printf("\nThe sum of 10 no is :%d", sum);
    printf("\nThe Average is :%f", avg);

    return 0;
}
```

The 'TERMINAL' tab at the bottom shows the command line output:

```
cd "n:\C++ Full Course\Assignment3\"; if ($?) { gcc q20.c -o q20 }; if ($?) { ./q20 }

Number-1: 12
Number-2: 3
Number-3: 56
Number-4: 45
Number-5: 67
Number-6: 89
Number-7: 45
Number-8: 67
Number-9: 78
Number-10: 45

The sum of 10 no is :507
The Average is : 50.700001
PS N:\C++ Full Course\Assignment3>
```

The status bar at the bottom right shows the date and time: 06:26 PM 24-03-2023.

## Q21)

The screenshot shows the Microsoft Visual Studio Code (VS Code) interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows the file path Assignment3 > q21.c > main().

The left sidebar features the Explorer, Outline, and Timeline panes. The Explorer pane lists various files and executables related to the assignment. The Outline pane shows the main() function. The Timeline pane is currently empty.

The main editor area displays the following C code:

```
1 #include <stdio.h>
2 #include <math.h>
3
4 int main()
5 {
6     int input;
7     printf("Input number of terms :");
8     scanf("%d", &input);
9     float n;
10
11    for (int i = 1; i <= input; i++)
12    {
13        n = i;
14        printf("\nNumber is : %d and cube of the %d is : %f", i, i, (pow(n, 3)));
15    }
16
17    return 0;
18 }
```

The terminal tab at the bottom shows the command line output:

```
cd "N:\C++ Full Course\Assignment3" ; if ($?) { gcc q21.c -o q21 } ; if ($?) { ./q21 }

Input number of terms :5

Number is : 1 and cube of the 1 is : 1
Number is : 2 and cube of the 2 is : 8
Number is : 3 and cube of the 3 is : 27
Number is : 4 and cube of the 4 is : 64
Number is : 5 and cube of the 5 is : 125
PS N:\C++ Full Course\Assignment3>
```

The status bar at the bottom right shows the date and time: 24-03-2023 06:26 PM.

Q22)

The screenshot shows a C++ development environment with the following interface elements:

- Top Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Left Sidebar:** Explorer (showing files like q15.c, q16.exe, q17.exe, etc.), Outline (showing main() function).
- Code Editor:** The current file is q22.c, displaying the following code:

```
#include <stdio.h>
int main()
{
    int input;
    printf("Input the number (Table to be calculated) : ");
    scanf("%d", &input);

    for (int i = 1; i <= 10; i++)
    {
        float multi = input * i;
        printf("\n%d x %d = %.0f", input, i, multi);
    }
    return 0;
}
```
- Terminal:** Shows the command line output of running the program:

```
PS N:\C++ Full Course\Assignment3> cd "N:\C++ Full Course\Assignment3" ; if ($?) { gcc q22.c -o q22 } ; if ($?) { ./q22 }
Input the number (Table to be calculated) : 12
12 X 1 = 12
12 X 2 = 24
12 X 3 = 36
12 X 4 = 48
12 X 5 = 60
12 X 6 = 72
12 X 7 = 84
12 X 8 = 96
12 X 9 = 108
12 X 10 = 120
PS N:\C++ Full Course\Assignment3>
```
- Bottom Bar:** Search, Taskbar icons (File Explorer, Mail, Settings, Google Chrome, WhatsApp, Microsoft Edge, Microsoft Word, Microsoft Excel), Timeline, ENG IN, 06:27 PM, 24-03-2023, battery status.

## Q23)

The screenshot shows a C++ development environment with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for Save, Undo, Redo, Cut, Copy, Paste, Find, Select All, and Run.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The current file is "q23.c". Other files listed include q13.c through q22.c, and their corresponding .exe and .c files.
- Code Editor:** Displays the source code for "q23.c". The code prompts the user to enter a number and a table starting point, then prints a multiplication table from 1 to the entered number.

```
#include <stdio.h>
int main()
{
    int input, end;
    printf("Enter Number to calculate Table :");
    scanf("%d", &input);
    printf("Input upto the table number starting from 1 : ");
    scanf("%d", &end);
    printf("Multiplication table from 1 to %d", end);
    printf("\n");
    for (int i = 1; i <= end; i++)
    {
        float multi = input * i;
        printf("%dX%d = %.0f, ", input, i, multi);
    }
    return 0;
}
```

- Terminal:** Shows the command line output for running the program with input 34, resulting in a multiplication table from 1 to 12.

```
PS N:\C++ Full Course\Assignment3> cd "N:\C++ Full Course\Assignment3\" ; if ($?) { gcc q23.c -o q23 } ; if ($?) { ./q23 }
● Enter Number to calculate Table :34
Input upto the table number starting from 1 : 12
Multiplication table from 1 to 12
34X1 = 34, 34X2 = 68, 34X3 = 102, 34X4 = 136, 34X5 = 170, 34X6 = 204, 34X7 = 238, 34X8 = 272, 34X9 = 306, 34X10 = 340, 34X11 = 374, 34X12 = 408,
PS N:\C++ Full Course\Assignment3>
```

- Bottom Bar:** Includes icons for Search, File Explorer, Mail, Settings, Google, GitHub, VS Code, Microsoft Edge, and Task Manager, along with system status indicators for battery, signal, and date/time (06:28 PM, 24-03-2023).

## Q24)

The screenshot shows a C++ development environment with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for search, file operations, and terminal.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE". The current file is q24.c, which contains the following code:

```
#include <stdio.h>
int main()
{
    int n;
    int sum = 0;
    printf("Enter number of terms : ");
    scanf("%d", &n);

    printf("\nThe odd number are : ");

    for (int i = 0; i <= n * 2; i++)
    {
        if (!(i % 2 == 0))
        {
            printf("%d ", i);
            sum += i;
        }
    }
    printf("\nThe sum of odd Natural Number upto %d terms : %d", n, sum);
    return 0;
}
```

- Terminal:** Displays the command line output of the program execution. It shows the user entering "12" and the program outputting the odd numbers from 1 to 23, followed by their sum as 144.

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q24.c -o q24 } ; if ($?) { ./q24 }

Enter number of terms : 12
The odd number are : 1 3 5 7 9 11 13 15 17 19 21 23
The sum of odd Natural Number upto 12 terms : 144
PS N:\C++ Full Course\Assignment3>
```

- Status Bar:** Shows system information like battery level, signal strength, and date/time (06:28 PM, 24-03-2023).

## **Q25)**

```
#include <stdio.h>

int main()
{
    int input;
    printf("Enter a digit : ");

    scanf("%d", &input);

    switch (input)
    {
        case 0:
            printf("Zero");
            break;
        case 1:
            printf("One");
            break;
        case 2:
            printf("Two");
            break;
    }
}
```

case 3:

```
printf("Three");
```

```
break;
```

case 4:

```
printf("Four");
```

```
break;
```

case 5:

```
printf("Five");
```

```
break;
```

case 6:

```
printf("Six");
```

```
break;
```

case 7:

```
printf("Seven");
```

```
break;
```

case 8:

```
printf("Eight");
```

```
break;
```

case 9:

```
printf("Nine");
```

```
break;
```

```
default:
```

```
printf("Enter valid digit 0 to 9 !!");
```

```
break;
```

```
}
```

```
return 0;
```

```
}
```

The screenshot shows a code editor interface with a dark theme. The main area displays a C++ program. The code includes a switch statement with cases for digits 0 through 9. If a digit other than 9 is entered, it prints an error message and breaks. If 9 is entered, it prints "Nine". For any other input, it prints an error message and returns 0. The code editor has tabs for multiple files, including q10.c, q11.c, q12.c, q13.c, q2.c, q28.exe, q24.c, and q25.c. The terminal tab at the bottom shows the execution of the program, where it asks for a digit, receives '9' as input, and prints 'Nine'. It then asks for another digit, receives '7' as input, and prints an error message. The timeline tab at the bottom right shows the date and time as 24-03-2023 06:31 PM.

```
case 9:  
    printf("Nine");  
    break;  
  
default:  
    printf("Enter valid digit 0 to 9 !!");  
    break;  
}  
  
return 0;
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q25.c -o q25 } ; if ($?) { ./q25 }  
Enter a digit : 9  
Nine  
PS N:\C++ Full Course\Assignment3> cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q25.c -o q25 } ; if ($?) { ./q25 }  
Enter a digit : 5  
Five  
PS N:\C++ Full Course\Assignment3> ./q25.exe  
Enter a digit : 7  
Seven  
PS N:\C++ Full Course\Assignment3>
```

Search

ENG IN 24-03-2023 06:31 PM 3

## Q26)

The screenshot shows a code editor interface with a dark theme. The left sidebar has icons for file operations like Open, Save, Find, and Run. The Explorer sidebar lists files and folders related to a 'C++ FULL COURSE' assignment, including 'Assignment3', 'q11.c Assignment4', 'q12.c Assignment4', 'q13.c Assignment4', 'q2.c Assignment4', 'q28.exe', 'q24.c', 'q25.c', and 'q26.c'. The main editor area displays the following C++ code:

```
2
3 int main()
{
    int input;
    char arr[12][12] = {"January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December"};
    printf("Enter the Digit :");
    scanf("%d", &input);
    for (int i = 0; i <= input - 1; i++)
    {
        printf("%s", arr[input - 1]);
        break;
    }
    return 0;
}
```

The code defines a function `main` that prints the month corresponding to the input digit. It uses a 2D character array `arr` where each row contains a month name and each column contains a digit from 1 to 12. The program prompts the user for a digit, reads it, and then prints the month at the corresponding index.

The bottom navigation bar includes tabs for PROBLEMS, OUTPUT, TERMINAL, and DEBUG CONSOLE. The TERMINAL tab is active, showing command-line history:

- cd "n:\C++ Full Course\Assignment3" ; if (\$?) { gcc q26.c -o q26 } ; if (\$?) { ./q26 }
- Enter the Digit :12
- December
- PS N:\C++ Full Course\Assignment3> ./q26.exe
- Enter the Digit :3
- March
- PS N:\C++ Full Course\Assignment3> ./q26.exe
- Enter the Digit :5
- May
- PS N:\C++ Full Course\Assignment3> ./q26.exe
- Enter the Digit :7
- July

The status bar at the bottom right shows the date and time: 06:42 PM 24-03-2023.

## Q27)

The screenshot shows a C++ development environment with the following details:

- File Explorer:** Shows a folder structure for "C++ FULL COURSE" containing various assignments and executables (e.g., q20.exe, q21.c, q21.exe, q22.c, q22.exe, q23.c, q23.exe, q24.c, q24.exe, q25.c, q25.exe, q26.c, q26.exe, q27.c, q27.exe, q28.c, q28.exe, q29.c, q29.exe, q30.c, q30.exe). The file "q27.c" is currently selected.
- Code Editor:** Displays the source code for "q27.c". The code includes a main function that prompts the user for a month number (1-12) and prints the number of days in that month based on a predefined array.
- Terminal:** Shows the command-line interface output. It starts with the command "cd "n:\C++ Full Course\Assignment3\"; if (\$?) { gcc q27.c -o q27 }; if (\$?) { ./q27 }". Then it prompts "Enter the Month (in number) :2" and displays the response "Month have 28 days".
- System Tray:** Shows standard system icons for search, file explorer, mail, settings, Google, WhatsApp, Microsoft Edge, and task manager.
- System Status:** Shows the date and time (24-03-2023, 06:44 PM), language (ENG IN), and battery status.

## **Q28)**

```
#include<stdio.h>
int main ()
{
    int input,r,l,w,b,h;

    float area;

    printf("Enter 1 for area of rectangle\n");
    printf("Enter 2 for area of triangle\n");
    printf("Enter 3 for area of circle\n");

    printf("Enter your choice : ");

    scanf("%d",&input);

    switch(input)
    {
        case 1:
            printf("Input length and width of the rectangle : ");
            scanf("%d%d",&l,&w);
            area=l*w;
            printf("The area of Reactangle is : %f",area);
            break;
    }
}
```

```
case 2:
```

```
    printf("Input the base and hight of the triangle : ");  
    scanf("%d%d",&b,&h);  
    float area1 =(.5*b*h);  
    printf("The area of triangle is : %f",area1);  
    break;
```

```
case 3:
```

```
    printf("Input radious of the circle : ");  
    scanf("%d",&r);  
    float area2 =3.14*r*r;  
    printf("The area of circle is : %f",area2);  
    break;
```

```
default:
```

```
    printf("Enter 1,2 and 3 choice !!");  
    break;  
  
}
```

```
return 0;  
}
```

The screenshot shows a code editor interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Standard icons for file operations like Open, Save, Print, etc.
- Sidebar:** Explorer (C++ FULL COURSE) showing files like q20.exe, q21.c, q21.exe, q22.c, q22.exe, q23.c, q23.exe, q24.c, q24.exe, q25.c, q25.exe, q26.c, q26.exe, q27.c, q27.exe, and q28.c. The q28.c file is selected.
- Code Editor:** The main window displays the code for q28.c:

```
21     area=l*w;
22     printf("The area of Reactangle is : %f",area);
23     break;
24
25     case 2:
26         printf("Input the base and hight of the triangle : ");
27         scanf("%d%d",&b,&h);
28         float area1 =(.5*b*h);
29         printf("The area of triangle is : %f",area1);
30         break;
31
32     case 3:
33         printf("Input radious of the circle : ");
34         scanf("%d",&r);
35         float area2 =3.14*r*r;
```
- Terminal:** Shows the execution of the program:

```
PS N:\C++ Full Course\Assignment3> ./q28.exe
Enter 2 for area of triangle
Enter 3 for area of circle
Enter your choice : 1
Input length and width of the rectangle : 12 13
The area of Reactangle is : 156.000000
PS N:\C++ Full Course\Assignment3> ./q28.exe
Enter 1 for area of rectangle
Enter 2 for area of triangle
Enter 3 for area of circle
Enter your choice : 2
Input the base and hight of the triangle : 12 18
The area of triangle is : 108.000000
PS N:\C++ Full Course\Assignment3> ./q28.exe
Enter 1 for area of rectangle
Enter 2 for area of triangle
Enter 3 for area of circle
Enter your choice : 3
Input radious of the circle : 2.34
The area of circle is : 17.560000
PS N:\C++ Full Course\Assignment3>
```
- Bottom Bar:** Includes a search icon, a row of small icons (file, mail, gear, etc.), and system status indicators (language, battery, date/time).

## **Q29)**

```
#include <stdio.h>

int main()
{
    int a, b, input;
    float result;

    printf("Enter values of a and b : ");
    scanf("%d%d", &a, &b);

    printf("Enter 1 for Multiplication\n");
    printf("Enter 2 for Division\n");
    printf("Enter 3 for Difference\n");

    printf("Enter your choice : ");
    scanf("%d", &input);

    switch (input)
    {
        case 1:
```

```
    printf("The Multiplication of %d and %d is :%.0f", a, b, result =  
a * b);
```

```
    break;
```

case 2:

```
    printf("The Division of %d and %d is : %.0f", a, b, result = a /  
b);
```

```
    break;
```

case 3:

```
    printf("The Difference of %d and %d is : %.0f", a, b, result = a -  
b);
```

```
    break;
```

default:

```
    printf("Enter 1,2 and 3 choice !!");
```

```
    break;
```

```
}
```

```
return 0;
```

```
}
```

The screenshot shows a C++ development environment with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for search, file operations, and terminal.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE".
- Terminal:** Displays the following code and its execution output:

```
#include <stdio.h>
int main()
{
    int a, b, input;
    float result;

    printf("Enter values of a and b : ");
    scanf("%d%d", &a, &b);

    printf("Enter 1 for Multiplication\n");
    printf("Enter 2 for Division\n");
    printf("Enter 3 for Difference\n");

    printf("Enter your choice : ");
    scanf("%d", &input);

    switch (input)
    {
        case 1:
            result = a * b;
            printf("The Multiplication of %d and %d is : %f\n", a, b, result);
            break;
        case 2:
            if (b != 0)
                result = a / b;
            else
                printf("Division by zero is undefined.\n");
            break;
        case 3:
            result = a - b;
            printf("The Difference of %d and %d is : %f\n", a, b, result);
            break;
        default:
            printf("Invalid choice.\n");
    }
}
```

Output from the terminal:

```
PS N:\C++ Full Course\Assignment3> ./q29.exe
Enter 1 for Multiplication
Enter 2 for Division
Enter 3 for Difference
PS N:\C++ Full Course\Assignment3> Enter values of a and b : 23 45
Enter 1 for Multiplication
Enter 2 for Division
Enter 3 for Difference
Enter your choice : 2
The Division of 23 and 45 is : 0
PS N:\C++ Full Course\Assignment3> ./q29.exe
Enter values of a and b : 34 3
Enter 1 for Multiplication
Enter 2 for Division
Enter 3 for Difference
Enter your choice : 3
The Difference of 34 and 3 is : 31
PS N:\C++ Full Course\Assignment3>
```
- Bottom Bar:** Includes icons for search, file operations, and system status.

## Q30)

The screenshot shows a C++ development environment with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for Save, Undo, Redo, Cut, Copy, Paste, Find, Select All, and others.
- Explorer:** Shows a tree view of files under "C++ FULL COURSE".
- Code Editor:** Displays the file "q30.c" with the following code:

```
1 #include<stdio.h>
2
3 int main(){
4
5     int input;
6     printf("Input an integer : ");
7     scanf("%d",&input);
8
9     printf("All the divisors of %d are :\n",input);
10
11    for (int i = 1; i <=input; i++)
12    {
13        if(input%i==0){
14            printf("%d\n",i);
15        }
16    }
17
18
19    return 0;
20 }
```
- Terminal:** Shows the command line output:

```
cd "n:\C++ Full Course\Assignment3\" ; if ($?) { gcc q30.c -o q30 } ; if ($?) { ./q30 }
Input an integer : 256
All the divisors of 256 are :
1
2
4
8
16
32
64
128
256
```
- Status Bar:** Shows system information like ENG IN, battery level, and the date/time (24-03-2023, 06:48 PM).