

Lab Task # 1

Name : Shan

Sap : 72387

Program : BSAI

Q 1: Write a program that inputs age in years and displays age in months and days.

Ans.

The screenshot shows the Visual Studio Code interface with a dark theme. The left sidebar includes the Explorer, Search, and Problems sections. The main editor window contains the following C++ code:

```
#include <iostream>
using namespace std;

int main() {
    int ageYears;
    cout << "Your age in years: ";
    cin >> ageYears;
    int ageDays = int(ageYears * 365.25);
    cout << "Your age in days: " << ageDays << endl;
    return 0;
}
```

Below the code, there are two lines of user input:

```
Sap ID : 72387
Name : Shan
```

The terminal tab at the bottom shows the output of running the program:

```
PS C:\Programming Fundamental C++> cd 'c:\Programming Fundamental C++\output'
PS C:\Programming Fundamental C++\output> & .\programming
.exe
Your age in years: 9
Your age in days: 3287
PS C:\Programming Fundamental C++\output>
```

Q # 2: Write a program that inputs 4 numbers and calculates the sum, average, and product of all the numbers.

Ans.

Double is a C++ data type used to store decimals like 10.4, 5.6, etc. This reason used Double.

The screenshot shows the VS Code interface with the following details:

- EXPLORER**: Shows files: programming.cpp, Lab Task 1.Q2.cpp, .vscode (c_cpp_properties.json, launch.json, settings.json), output (Lab Task 1.Q2.exe, Lab Task 1.Q2.cpp, programming.cpp, tempCodeRunnerFile.cpp, tempCodeRunnerFile.exe).
- EDITOR**: Displays the code for "Lab Task 1.Q2.cpp".

```
using namespace std;
int main() {
    double n1, n2, n3, n4;
    cout << "Enter four numbers: ";
    cin >> n1 >> n2 >> n3 >> n4;

    double sum = n1 + n2 + n3 + n4;
    double average = sum / 4;
    double product = n1 * n2 * n3 * n4;

    cout << "\nSum = " << sum << endl;
    cout << "Average = " << average << endl;
    cout << "Product = " << product << endl;
}

```
- TERMINAL**: Shows the terminal output for "Lab Task 1.Q2.exe".

```
PS C:\Programming Fundamental C++\output> & ./'Lab Task 1.Q2.exe'
Enter four numbers: 2
7
9
12
Sum = 30
Average = 7.5
Product = 540
```

Q # 3: Write a program that inputs miles from the user and convert miles into kilometres. One mile is equal to 1.609 kilometre.

Ans.

The screenshot shows the VS Code interface with the following details:

- EXPLORER**: Shows files: programming.cpp, Lab Task 1.Q2.cpp, Lab1 Q3.cpp, .vscode (c_cpp_properties.json, launch.json, settings.json), output (Lab Task 1.Q2.exe, Lab1 Q3.exe, Lab Task 1.Q2.cpp, Lab1 Q3.cpp, programming.cpp, tempCodeRunnerFile.cpp, tempCodeRunnerFile.exe).
- EDITOR**: Displays the code for "Lab1 Q3.cpp".

```
#include <iostream>
using namespace std;
int main() {
    double miles;
    cout << "Enter distance in miles: ";
    cin >> miles;

    double kilometres = miles * 1.609; // 1 mile = 1.
    cout << "\nDistance in kilometres: " << kilometre;
}

```
- TERMINAL**: Shows the terminal output for "Lab1 Q3.exe".

```
PS C:\Programming Fundamental C++\output> & ./'Lab1 Q3.exe'
Enter distance in miles: 10
Distance in kilometres: 16.09
```

Q # 4: Write a program that inputs total number of students in a class and fee per student. It displays total fee collected from the class.

Ans.

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

- File Bar:** File, Edit, Selection, View, Go, ...
- Title Bar:** Programming Fundamental C++
- Explorer View:** Shows the project structure under "OPEN EDITORS" and "PROGRAMMING FUNDAMENTAL C++". Files listed include .vscode, c_cpp_properties.json, launch.json, settings.json, .vscode.cpp, output (Lab Task 1.Q2.exe, Lab1 Q3.exe, programming.exe), and several Lab1 and Lab2 files.
- Code Editor:** The main editor window displays the "programming.cpp" file with the following code:

```
3
4 int main() {
5     int totalStudents;
6     double feePerStudent;
7
8     cout << "Enter total number of students: ";
9     cin >> totalStudents;
10
11    cout << "Enter fee per student: ";
12    cin >> feePerStudent;
13
14    double totalFee = totalStudents * feePerStudent;
15
16    cout << "\nTotal fee collected from the class = "
17
18    return 0;
19 }
```
- Terminal View:** The terminal shows the execution of the program:

```
e'
Enter distance in miles: 10

Distance in kilometres: 16.00
PS C:\Programming Fundamental C+\output> cd 'c:\Programming Fundamental C+\output'
PS C:\Programming Fundamental C+\output> & .\programming
.exe
Enter total number of students: 25
Enter fee per student: 2500

Total fee collected from the class = 62500
PS C:\Programming Fundamental C+\output>
```
- Right Panel:** A "Welcome to Copilot" panel is visible, prompting the user to "Let's get started" and providing options to "Add context (#), extensions (@), commands" and "Build Workspace". It also includes a note to "Review AI output carefully before use."
- Bottom Bar:** Includes icons for file operations (New, Open, Save, Find, Replace, Cut, Copy, Paste, Select All, Undo, Redo) and terminal settings (UTF-8, CRLF, C++).