PROGRAMMING FUNDAMENTALS ASSIGNMENT

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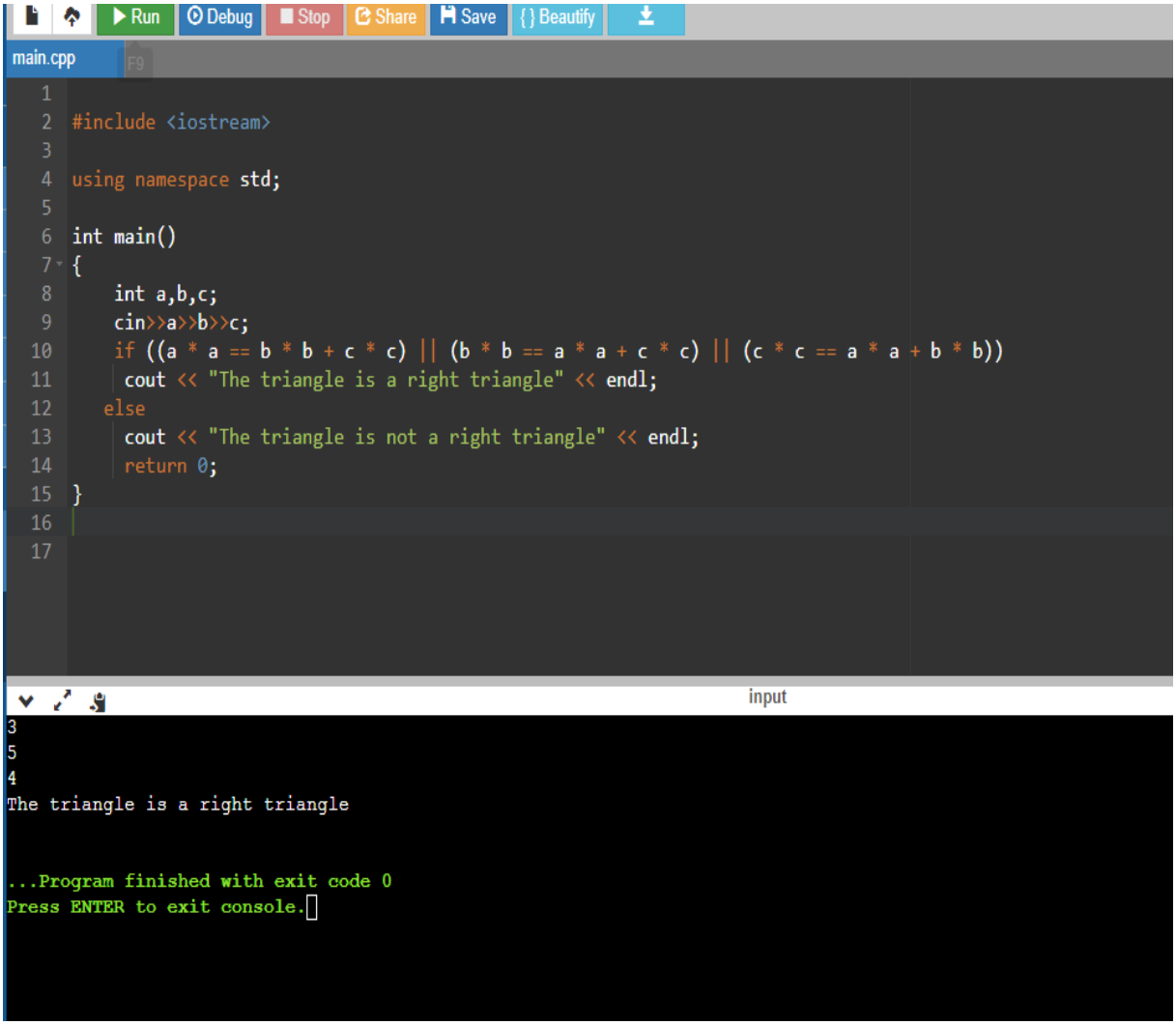
BSCS-B-MORNING

QUESTION # 1:

CODE AND OUTPUT:



QUESTION# 2

CODE:

main.cpp cookies.txt

```cpp
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
const int cookies = 24;
const int container = 75;
int totalcookies, boxcookies, containerboxes, totalboxes, totalcontainers;
double extraboxes, extracookies;
cout << "\nEnter the total number of cookies: ";
cin >> totalcookies;
cout << "\nEnter the number of cookies in a box: ";
cin >> boxcookies;
cout << "\nEnter the number of boxes in the container: ";
cin >> containerboxes;

totalboxes = totalcookies / boxcookies;
extracookies = totalcookies % boxcookies;
totalcontainers = totalboxes / containerboxes;
extraboxes = totalboxes % containerboxes;
ofstream outfile("cookies.txt");
outfile << "Number of boxes needed: "<< totalboxes << endl;
outfile << "Number of containers needed: "<< totalcontainers << endl;
outfile << "Number of leftover boxes needed: "<< extraboxes << endl;
outfile << "Number of leftover cookies needed: "<< extracookies << endl;
outfile.close();
return 0;
}
```

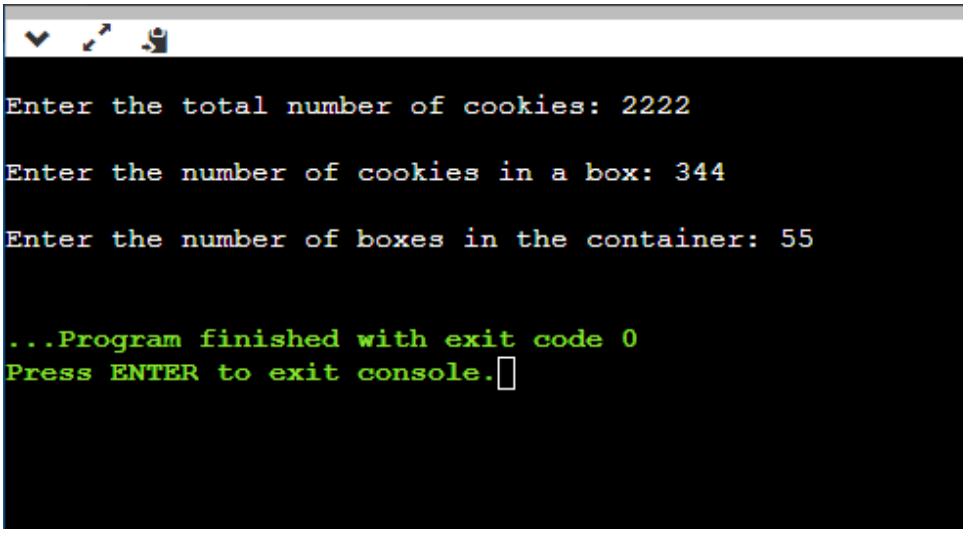
OUTPUT FILE:

main.cpp cookies.txt

```
Number of boxes needed: 6
Number of containers needed: 0
Number of leftover boxes needed: 6
Number of leftover cookies needed: 158

```

OUTPUT:



QUESTION # 3:

CODE:

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main() {
    int seconds;

    ifstream inputFile("input.txt");
    while (inputFile >> seconds) {
        int minutes = seconds / 60;
        int hours = minutes / 60;
        int days = hours / 24;
        int years = days / 365;
        int months = (days % 365) / 30;
        days = (days % 365) % 30;
        hours = hours % 24;
        minutes = minutes % 60;
        seconds = seconds % 60;

        cout << "Years: " << years << endl;
        cout << "Months: " << months << endl;
        cout << "Days: " << days << endl;
        cout << "Hours: " << hours << endl;
        cout << "Minutes: " << minutes << endl;
        cout << "Seconds: " << seconds << endl;
        int year;
    cout << "Enter a year: ";
    cin >> year;

    if (year % 4 == 0) {
        if (year % 100 == 0) {
            if (year % 400 == 0)
                cout << year << " is a leap year.";
            else
                cout << year << " is not a leap year.";
        }
        else
```

CODE FOR FILE:

main.cpp | input.txt | ddd

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main() {
    int seconds;
   ofstream fout;
   fout.open("input.txt");
   fout<<seconds;
   fout.close();
```

OUTPUT :

```
Years: 0
Months: 2
Days: 2
Hours: 2
Minutes: 27
Seconds: 10
Enter a year: 3444
3444 is a leap year.

...Program finished with exit code 0
Press ENTER to exit console.
```

FILE INPUT:

main.cpp | input.txt | ddd

```
5365630
```

CODE# 4:

main.cpp cookies.txt

```cpp
int main() {
    try{
int a,b,c,discriminant,r1,r2;
//r1 and r2 is root1 and root2 respectively
cout<<"\n enter three coefficient a,b,c respectively :";
cin>>a>>b>>c;
discriminant=b*b-4*a*c;
r1 = (-b + sqrt(discriminant)) / (2*a);
r2 = (-b - sqrt(discriminant)) / (2*a);
if(a==0){
    throw 505;
}
if(discriminant<0){
    cout<<"\n the equation has two complex roots";
}
else if(discriminant==0){
    cout<<"\n The equation has a single (repeated) root"<<r1;

}
else {
    cout<<"\n The quation has two real roots "<<r1<<"and"<<r2;
}}
catch(int num)
{
    cout<<"\n invalid code "<< num;
if(num==505)
{
    cout<<"\n value must be smaller or greater than 0";
}}
return 0;
}
```

OUTPUT:

```
 enter three coefficient a,b,c respectively :69
8
99

 the equation has two complex roots

...Program finished with exit code 0
Press ENTER to exit console.
```