San Francisco Bay University

CS360L - Programming in C and C++ Lab
Lab Assignment #0

Due day: 1/17/2024

Instruction:

1. Push the answer sheets/source code to Github
2. Please follow the code style rule like programs on handout.
3. Overdue lab assignment submission can't be accepted.
4. Take academic honesty and integrity seriously (Zero Tolerance of Cheating & Plagiarism)

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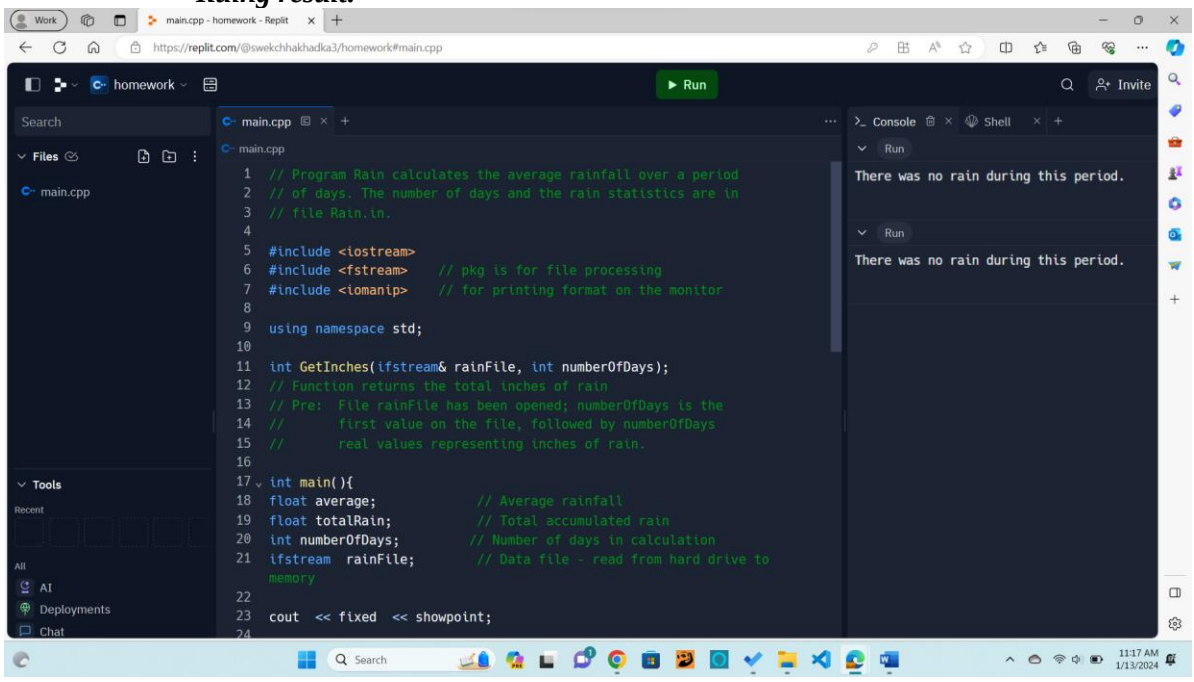
1. Create your personal account of C++ online compiler at the following link and run the first program on it. *https://replit.com/*

```
// Program Rain calculates the average rainfall over a period
// of days. The number of days and the rain statistics are in
// file Rain.in.

#include <iostream>
#include <fstream>              // pkg is for file processing
#include <iomanip>              // for printing format on the monitor

using namespace std;

int GetInches(ifstream& rainFile, int numberOfDays);
// Function returns the total inches of rain
// Pre:  File rainFile has been opened; numberOfDays is the
//       first value on the file, followed by numberOfDays
//       real values representing inches of rain.

int main(){
        float average;          // Average rainfall
        float totalRain;        // Total accumulated rain
        int numberOfDays;       // Number of days in calculation
        ifstream  rainFile;     // Data file – read from hard drive to memory

        cout  << fixed  << showpoint;

        rainFile.open("Rain.In");
        rainFile >> numberOfDays;
        totalRain = GetInches(rainFile, numberOfDays);
        if (totalRain == 0.0)
                cout  << "There was no rain during this period."  << endl;
```

```
        else{
                average = totalRain / numberOfDays;
                cout << "The average rain fall over "
                     << numberOfDays;
                cout << " days is " << setw(1)  << setprecision(3)
                     << average  << endl;
        }

        return 0;
}
//*******************************************************
int GetInches(ifstream& rainFile, int numberOfDays){
        float inches;       // Day's worth of rain
        int counter;        // Loop control variable
        float totalRain = 0.0;
        counter = 1;
        while (counter <= numberOfDays){
                rainFile >> inches;
                totalRain = totalRain + inches;
                counter++;
        }
        return totalRain;
}
```

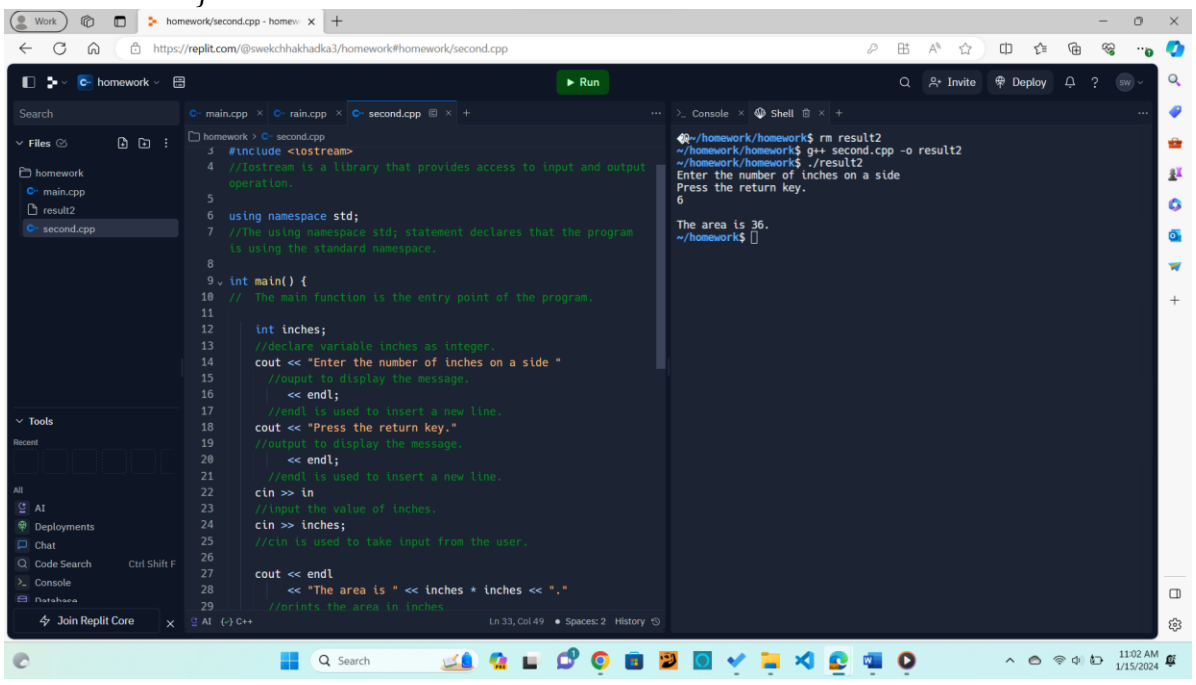
Notice that Data on Rain.In: 7 0.2 0.0 0.1 1.1 0.1 0.0 0.9

Ruing result:



2. Enter the editor and key in the following program. And explain the meanings of each statement

```
// Program Area calculates the area of a square.
// The user is prompted to enter the number of inches on each
// side. Note that "endl" in line 7 ends in the letter "l", not
// the number one.

#include <iostream>

using namespace std;

int main (){

        int  inches;

        cout  << "Enter the number of inches on a side "
              << endl;
        cout  << "Press the return key."
              << endl;
        cin   >> inches;
        cout  << endl
              << "The area is "  << inches * inches  <<"."
              << endl;

        return 0;

}
```



3. Write the program to check leap year as the first programming exercise, and verify your program by the following cases

    a. The input prompt is *"Enter a year AD, for example, 1997"*

b. Change the prompt so that the example year is *2005*

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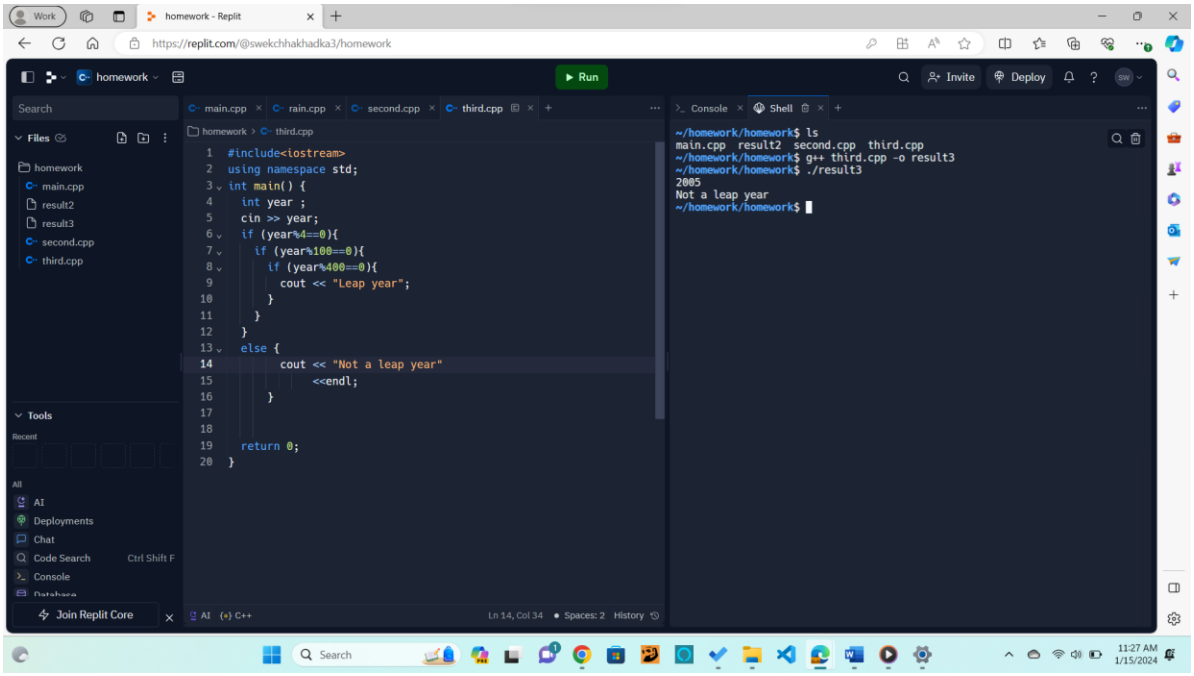
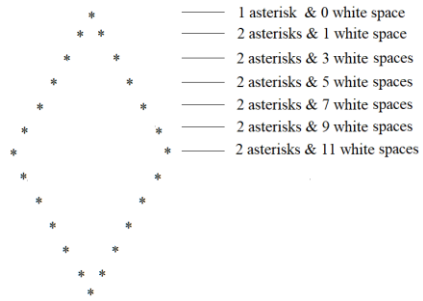


4. Figure out the program to print the following pattern by loop structure



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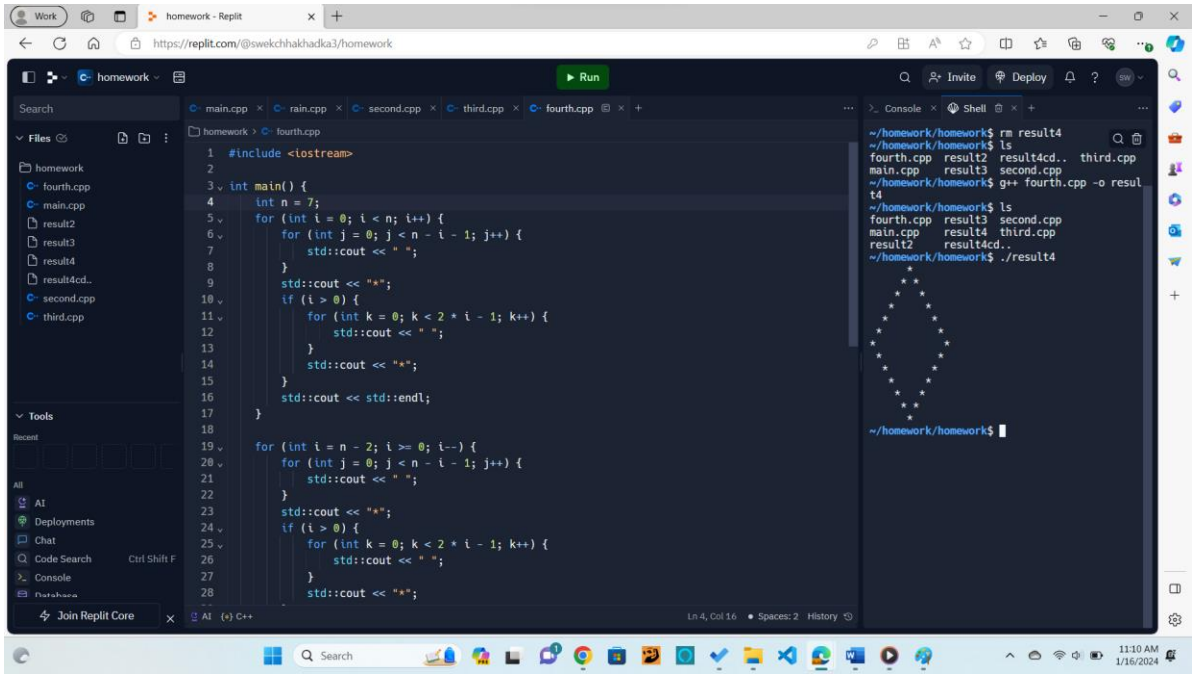
homework - Replit
https://replit.com/@swekchhakhadka3/homework
homework
Run
Invite
Deploy
main.cpp
rain.cpp
second.cpp
third.cpp
fourth.cpp
Files
homework
fourth.cpp
main.cpp
result2
result3
result4
result4cd..
second.cpp
third.cpp
Tools
AI
Deployments
Chat
Code Search
Ctrl Shift F
Console
Join Replit Core
Console
Shell
~/homework/homework$ rm result4
~/homework/homework$ ls
fourth.cpp result2 result4cd.. third.cpp
main.cpp result3 second.cpp
~/homework/homework$ g++ fourth.cpp -o result4
~/homework/homework$ ls
fourth.cpp result3 second.cpp
main.cpp result4 third.cpp
result2 result4cd..
~/homework/homework$ ./result4
~/homework/homework$
Ln 4, Col 16
Spaces: 2
History
Search
11:10 AM
1/16/2024