

CS 201 Homework 0

Solomon Himelbloom

September 2, 2020

- Repository Link: <https://github.com/techsolomon/cs201>
- Git Commits: <https://github.com/techsolomon/cs201/commits>
- This homework took approximately 2 hours to complete.

1 Design

This first homework assignment was designed utilizing a mono-repo with three directories under the hw0 folder – game, hello, and poem. Each subfolder respectively contains a C++ program file sharing the same name with the folder. Every .cpp file starts with the repeated file name, author information, creation date, and explanation for future reference.

Next, `iostream` is added from the C++ Standard Library surrounded by whitespace. Finally, a main function prints either a game description, ‘hello, world’ (x5) statement, or a short poem excerpt. Additional information about each statement can be found commented in the program code.

2 Post Mortem

Upon building each C++ file and referencing notes from class, I ran the programs to find that there were no errors or critical failures that would delay or cause problems for the project. I also

considered limiting the number of characters per line to improve the clarity of the project.

One computer science fundamental – namely don't repeat yourself (DRY) – could be followed in the future with the hello.cpp program. After learning more about loops and how they interact with C++ files, I look forward to refactoring the file to be more concise and succinct.

3 Answers to Questions

1. Software is used across a plethora of subjects and job sectors. In science, we can use highly detailed physics models to better understand the motion of particles. For medicine, software might be used to safely power magnetic resonance imaging or MRI machines. Finally, entertainment is monetized and facilitated with the reservation of tickets in Software as a Service (SaaS) companies such as Ticketmaster and Eventbrite.
2. A software developer looks like someone open to solving problems, asking difficult questions, and ensuring that all public-facing products are well documented for future use. The software developer needs to consider the knowledge level of their end-users and build systems that are accessible by everyone.
3. My computer is currently running macOS 10.15.6 and has 16 GB of RAM with up to 1 TB of storage.
4. My five favorite applications for computer programs include cyber-security, accessibility, communication, collaboration, and creativity.
5. I find Cloudflare WARP an interesting use case of computer programming as it serves to benefit their end-users from a cyber-security perspective. Cloudflare WARP allows customers to operate using their devices on a virtual private network, or VPN, with the second-largest public domain name

system (DNS) of 1.1.1.1. This may seem confusing at first, but with the power of Cloudflare and their data centers spread around the world, they serve to “...radically improve the performance, security, and privacy of the mobile internet.”

Read more: <https://blog.cloudflare.com/1111-warp-better-vpn/>

4 Program 1

4.1 Sample Output/Screenshot

Listing 1: Sample Program Output

```
Hello, world.  
Hello, world.  
Hello, world.  
Hello, world.  
Hello, world.
```

4.2 Git Commit Messages

Date	Message
2020-09-02	Repeat hello.cpp and add game/poem template
2020-08-26	Added hello.cpp and hw0 directory
2020-08-26	Create .gitignore
2020-08-24	Initial commit

4.3 Source Code

```
1 // hello.cpp  
2 // Solomon Himelbloom  
3 // 26 August 2020  
4 // Hello world example for CS 201.  
5  
6 #include <iostream>  
7 using std::cout;  
8 using std::endl;  
9  
10 int main()  
11 {  
12     cout << "Hello, world." << endl;  
13     cout << "Hello, world." << endl;  
14     cout << "Hello, world." << endl;
```

```

15     cout << "Hello, world." << endl;
16     cout << "Hello, world." << endl;
17     return 0;
18 }

```

5 Program 2

5.1 Sample Output/Screenshot

Listing 2: Sample Program Output

Tetris is a single-player game, which is available on almost every operating system.
 Players need to arrange and rotate unique shaped blocks that drop at different speeds.
 The game ends when blocks reach the top of the screen.

5.2 Git Commit Messages

Date	Message
2020-09-02	Add Robert Frost poem and Tetris game description
2020-09-02	Repeat hello.cpp and add game/poem template

5.3 Source Code

```

1 // game.cpp
2 // Solomon Himelbloom
3 // 2 September 2020
4 // Game example for CS 201.
5
6 #include <iostream>
7 using std::cout;
8 using std::endl;
9
10 int main()
11 {
12     // Tetris (video game, est. 1984)
13     // Further Reading: https://www.britannica.com/topic/Tetris & https://en.wikipedia.org/wiki/Tetris
14     cout << "Tetris is a single-player game, which is available on almost every operating system." << endl;
15     cout << "Players need to arrange and rotate unique shaped blocks that drop at different speeds." << endl;
16     cout << "The game ends when blocks reach the top of the screen." << endl;
17     return 0;
18 }

```

6 Program 3

6.1 Sample Output/Screenshot

Listing 3: Sample Program Output

```
I shall be telling this with a sigh  
Somewhere ages and ages hence:  
Two roads diverged in a wood, and I  
I took the one less traveled by,  
And that has made all the difference.
```

6.2 Git Commit Messages

Date	Message
2020-09-02	fix: commented header template file name
2020-09-02	Add Robert Frost poem and Tetris game de- scription
2020-09-02	Repeat hello.cpp and add game/poem template

6.3 Source Code

```
1 // poem.cpp
2 // Solomon Himelbloom
3 // 2 September 2020
4 // Poem example for CS 201.
5
6 #include <iostream>
7 using std::cout;
8 using std::endl;
9
10 int main()
11 {
12     // The Road Not Taken by Robert Frost
13     cout << "I shall be telling this with a sigh" << endl;
14     cout << "Somewhere ages and ages hence:" << endl;
15     cout << "Two roads diverged in a wood, and I|" << endl;
16     cout << "I took the one less traveled by," << endl;
17     cout << "And that has made all the difference." << endl;
18     return 0;
19 }
```
