CIS350
Fall 2023

Homework 4
Due by: November 3rd at 11:59pm
110 points (40 individual, 70 group)

This is a split assignment. The first part is individual and the second part is group-based. I'll put up a separate grade entry for the groupwork.

Each person should submit this document with the answers for INDIVIDUALWORK and your GROUPWORK should be committed to GitHub.

INDIVIDUALWORK (40 pts)

This is just to ensure you're keeping up with the material.

1) What is a key difference between the burn-down and burn-up charts for Agile?

The difference between burn-down and burn-up charts is how tasks are presented. In a burn-down chart they are shown as what is remaining left to do. Burn-up charts show the number of task left that have not been finished.

2) At which point in the software engineering process would you perform a COCOMO I estimate for **basic**, **intermediate**, and **advanced**?

Basic is applied early in in the process so the amount of effort can be determined. Then Intermediate is applied after the requirements are set. Finally, Advanced is applied after the design of the project is complete.

3) Assume you need to perform an effort estimation **in the middle** in a project lifecycle (think post-scoping, post-requirements, analysis/design models). What sort of estimation technique would you use **and why**?

An earned value analysis, EVA, is used to measure the percentage of the project remaining. This could be used to determine the effort estimation for the project.

4) What is the purpose of a design pattern with respect to software? **Describe** two examples – i.e., what the pattern is and what its purpose is. (hint: this page has a lovely list - https://refactoring.guru/design-patterns/catalog).

The purpose of a design pattern is to have a proven solution to a recurrent problem in a context. They take proven solutions that solve common problems and use them. They also improve communication between a team by having a common terminology. One pattern is the creational pattern type called prototype. This allows the copy of existing objects in code and you don’t have to worry about these being dependent on their classes. If you needed multiple instances of an object they can be cloned into the spots where they are needed as well as their private fields. A second type is a structural pattern called a bridge pattern. This essentially allows a large class or set of closely related classes to be segmented into smaller ones. They are independent of each other and takes advantage of composition to extend the use classes of a class.

GROUPWORK (70 pts)

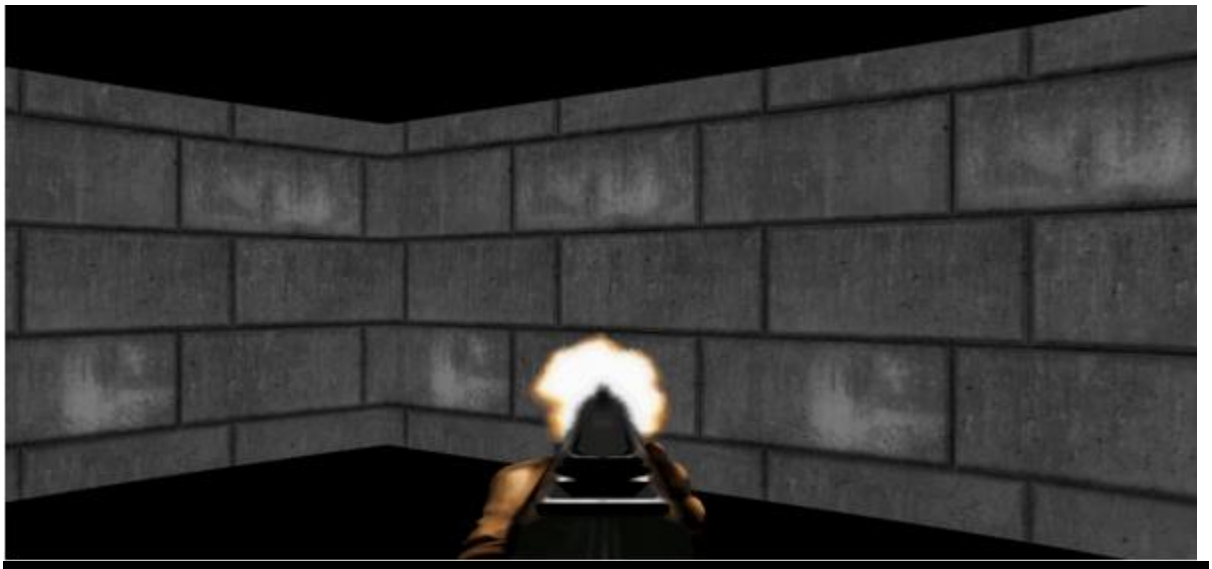
Select and describe two tasks for your projects.

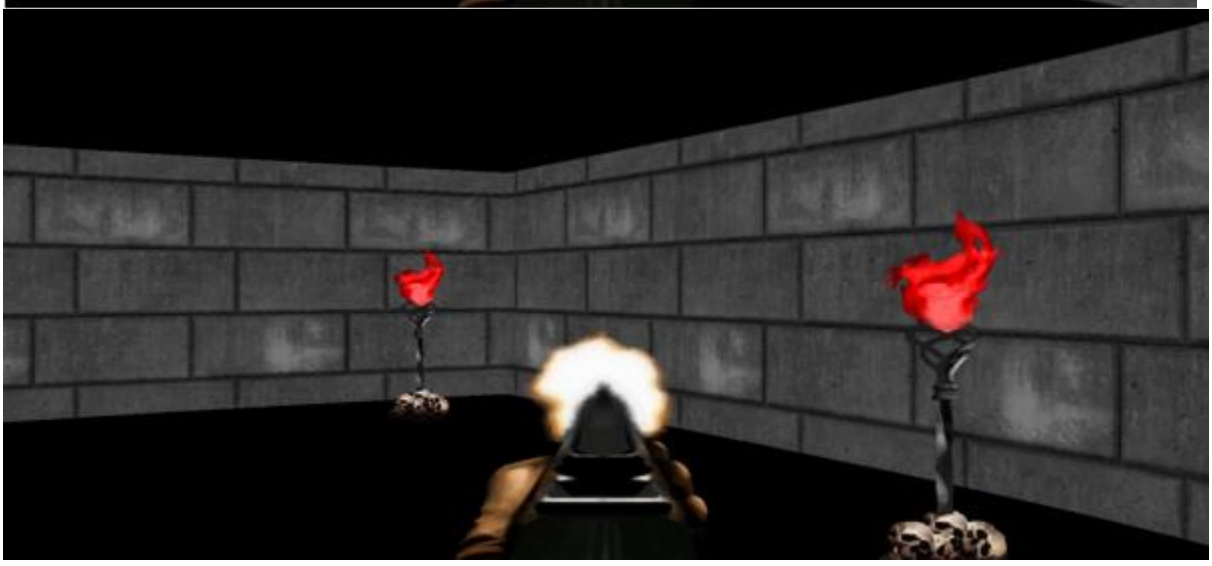
Task 1: texturing and sprites for walls, these add detail to game environment like wall textures, object

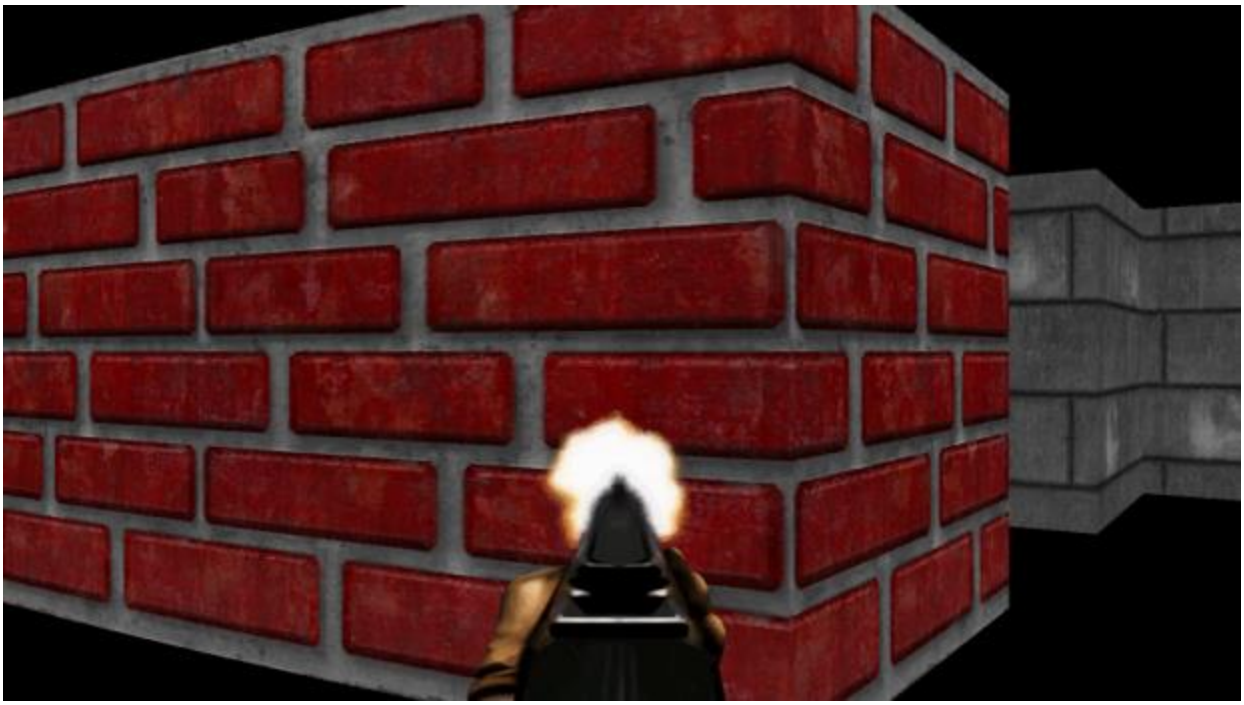
Task 2: adding npcs and they can interacted with and also the gun animation

Now, make progress on their implementation. Provide at least **three** screenshots for each task to demonstrate that progress has been made.

Task 1 screenshots:







Task 2 screenshots: