Assignment 4
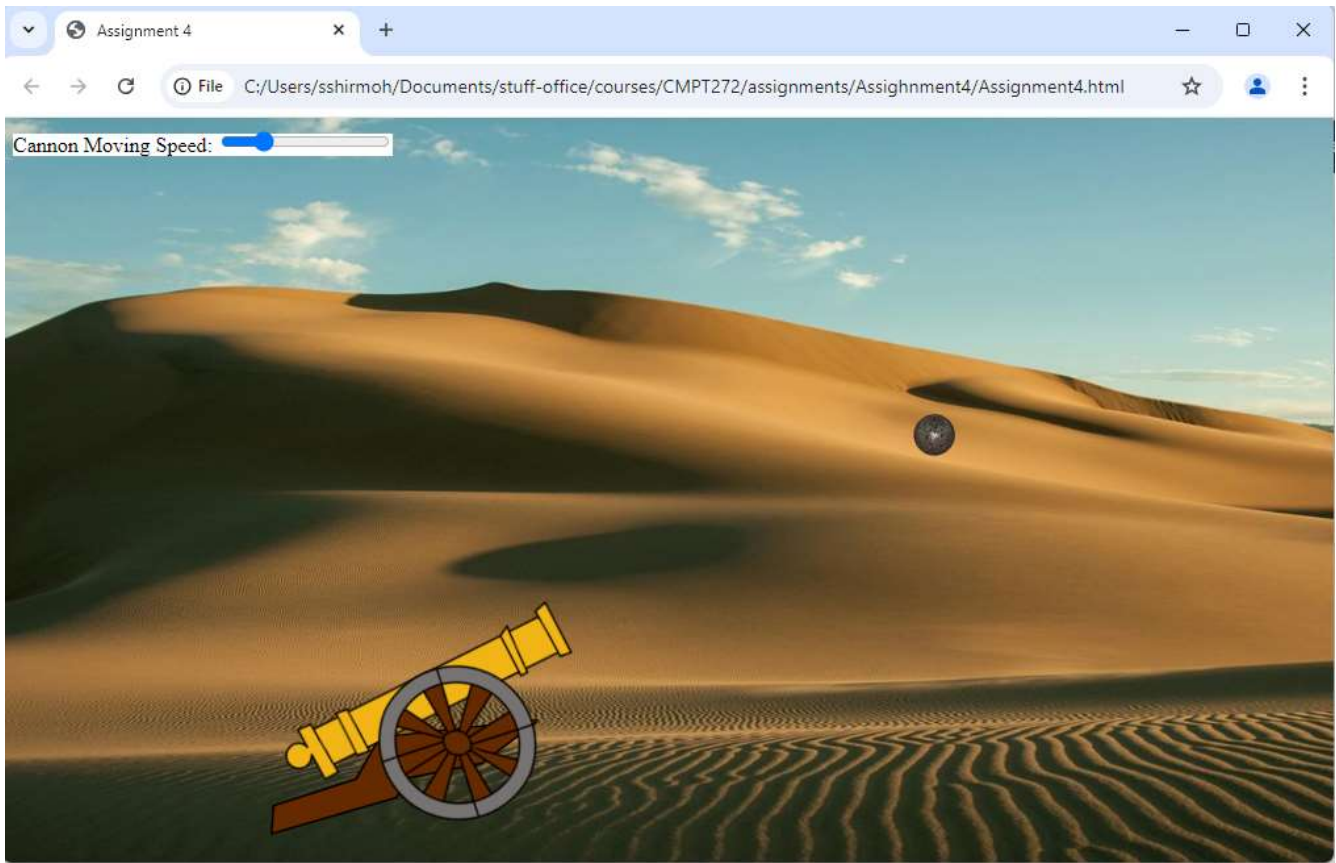
Q1. (45 marks) Now that the previous assignment made us experts in web page design, let's focus our attention on web apps. In this assignment, you will design a game app which runs as explained in the accompanying video. A screenshot is shown below.

The game is controlled by keys, so if you use a touchscreen device, you should connect a keyboard to it for your own comfort. In fact it's easier to do this assignment on a laptop or desktop.

Requirements:
1. Please see the accompanying video for gameplay and additional information.
2. The cannon moves to the left and right with the corresponding arrow keys.
3. The wheel turns in the current direction as the cannon moves.
4. The cannon's top-left corner is 150 pixels from the window's bottom.
5. The turret moves up and down with the corresponding arrow keys.
6. The turret is restricted to +35° and -20°.
7. The cannon must stop at the window's left and right borders.
8. The cannon and the background image must respond to resizing the browser, as shown in the video.
9. No scrollers on the window.
10. When firing (by pressing "space"), the cannonball should fly at the same angle as the turret, and should go straight as if there is no gravity.
11. The cannon should make a sound (sound file is provided) when firing the cannonball.
12. There should be only one cannonball in flight. While it's flying, no other cannonballs can be fired.
13. The sound of the shot should stop once the cannonball leaves the window.

Rules:
1. The game must be coded with HTML, embedded CSS, and embedded and/or external JavaScript.
2. No frameworks, templates, or libraries can be used. You must develop everything from scratch yourself.
3. Use the accompanying image and sound files.
4. For your solution, upload one zip file containing everything.