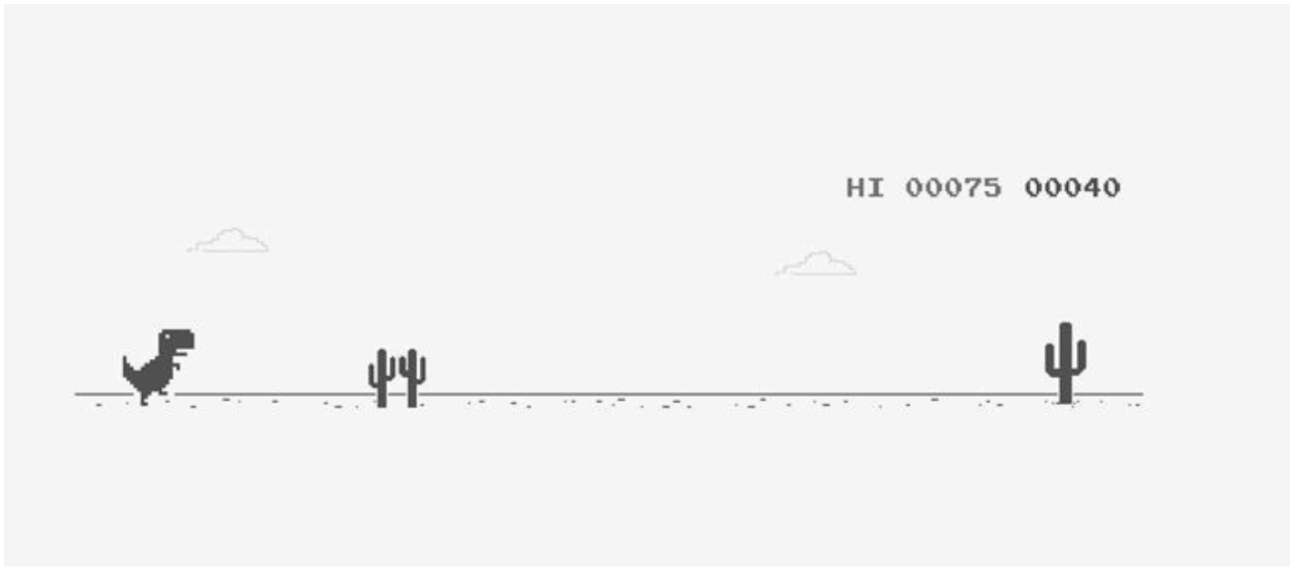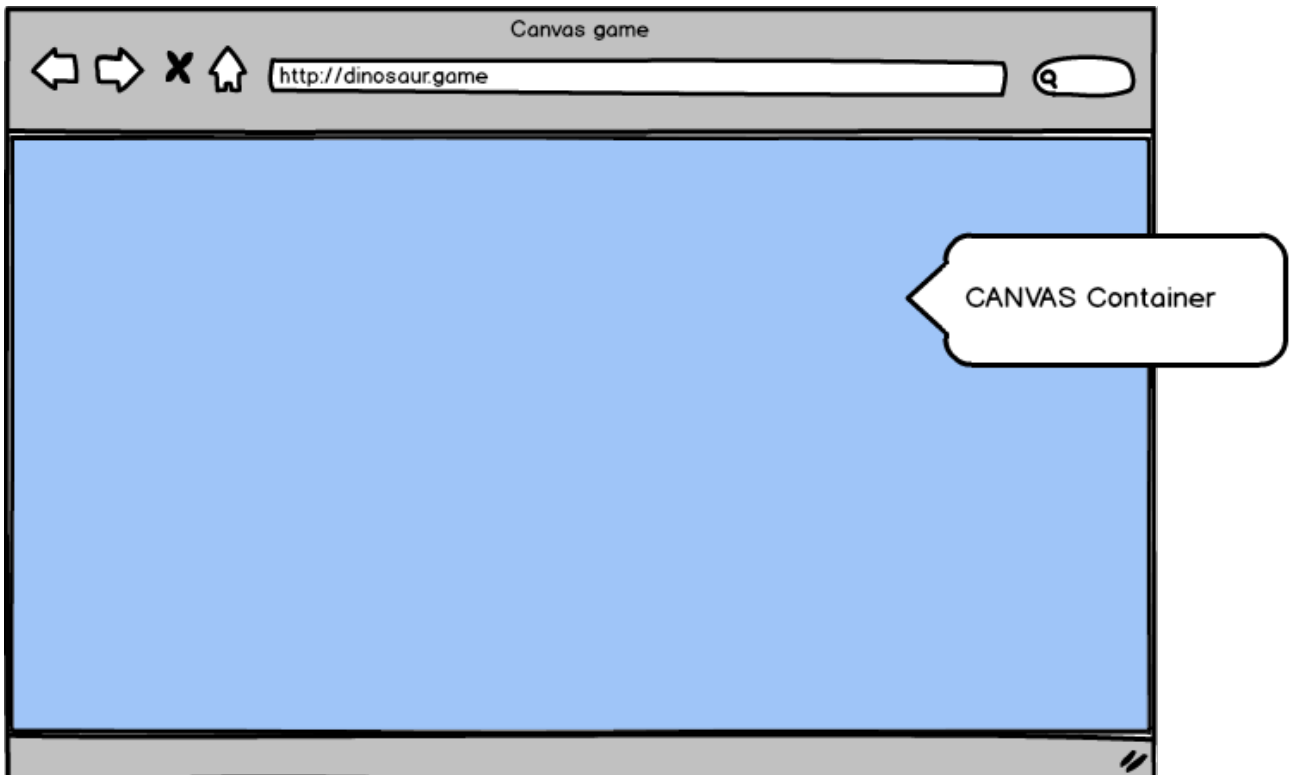# TD 5: Apply basic javascript

Apply the basic javascript you learnt so far on Canvas. We're going to create a dinosaur game.
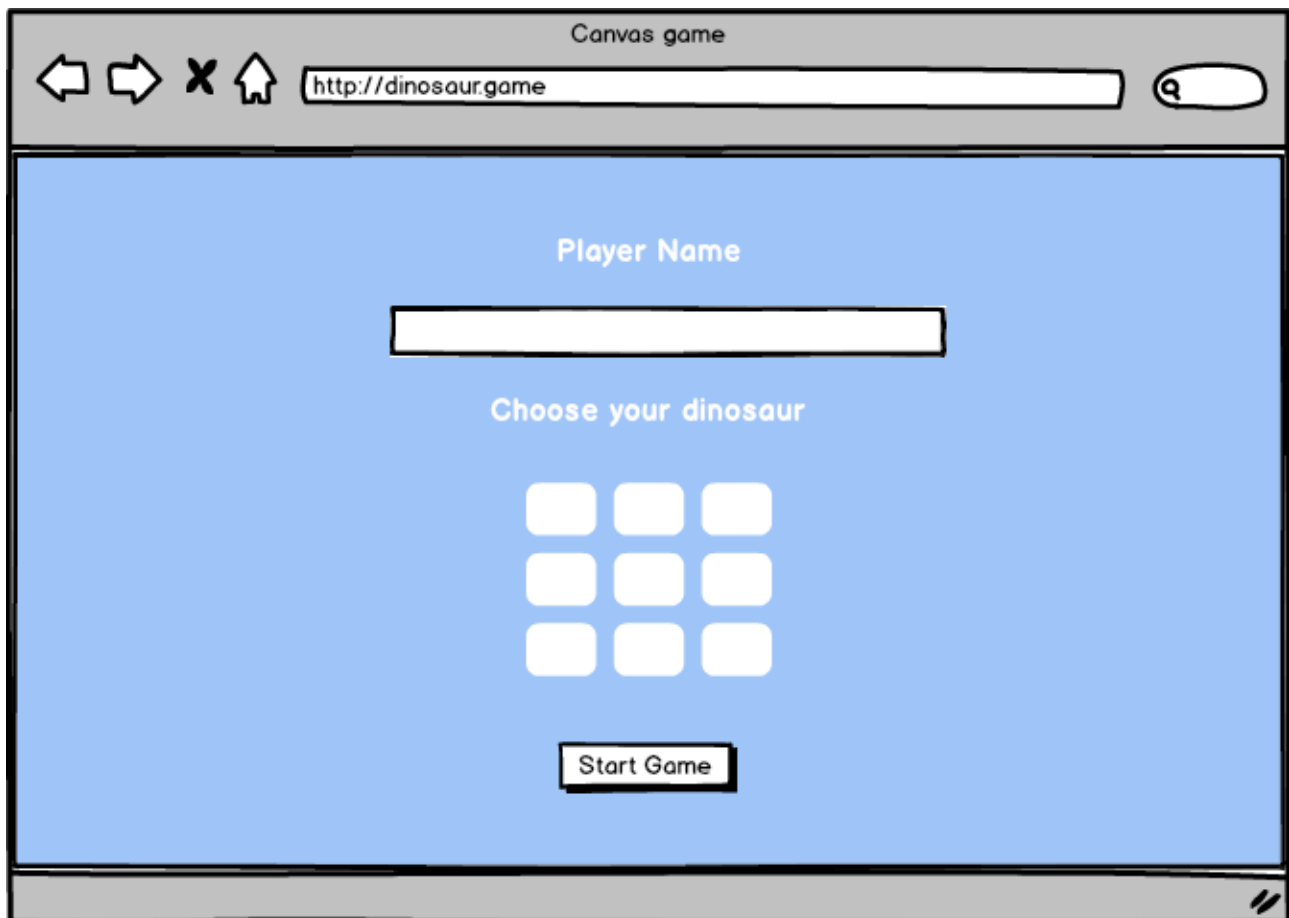

1. Create a canvas container with the width = 100% and height of visible viewport. Apply the border with background color so that the canvas is visible.

2. The game object

The game object represent the entire game. When the game object is initialized, the canvas container from (1) will be visible. Display an html input element over the canvas to get player name.

Store the player name, dinosaur, score, speed, level as game class's properties.

Game class has 2 major methods:

   - start() : start the game

   - pause() : pause the game

3. The Dinosaur object

The dinosaur object represent the player. It can only jump and its speed is auto increase base on the game level (base speed + game level)

The Dinosaur's properties are composed of:

- Appearance : Appearance of dinosaur. It is the chosen image provided by player in the early game.
- Width : Width of dinosaur
- Height : Height of dinosaur
- Speed : Current speed of dinosaur

The dinosaur's methods are:
- Jump: Jump at a specific height.

4. The Tree object
The tree object represent the obstacle. Once the dinosaur object collide with the obstacle, the game is over.

The tree has different shape and size to make the game more interesting but it doesn't have any methods.

5. Game start

The game can be start by clicking on start button, or player click on "**space**" key. Display the game appearance by initialize the dinosaur object in starting position, and trees at the end of the screen.
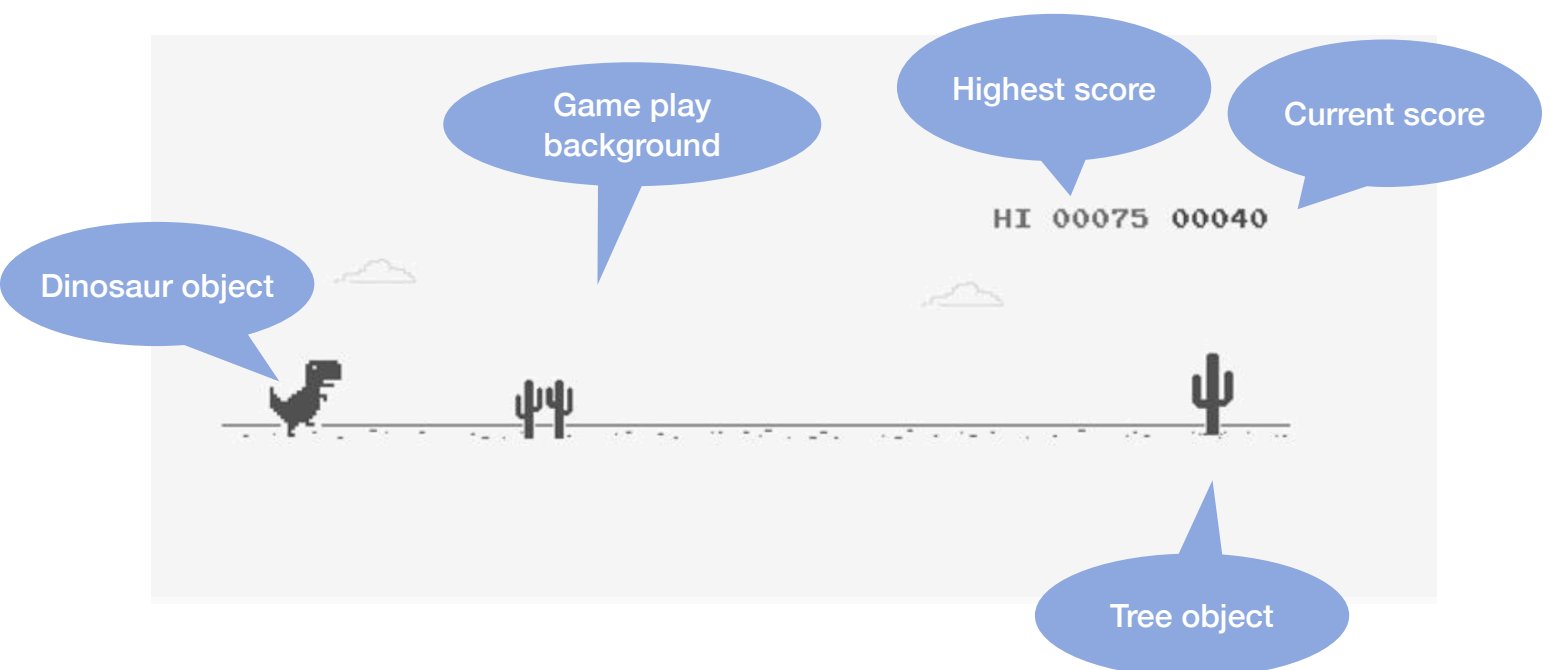
6. Game over
When the dinosaur collide with the obstacle, game is over. Display the "Game Over" message with achieved score and a try again button.

Improvement
You can improve the gaming experience by adding more type of obstacle such as bird and make the dinosaur has the ability to jump twice and dive down.

The game can also be saved to play later. To do so, you need to store the information in browser's local storage.

You can also invite your friend to play along with you by using web socket for real time playing.