

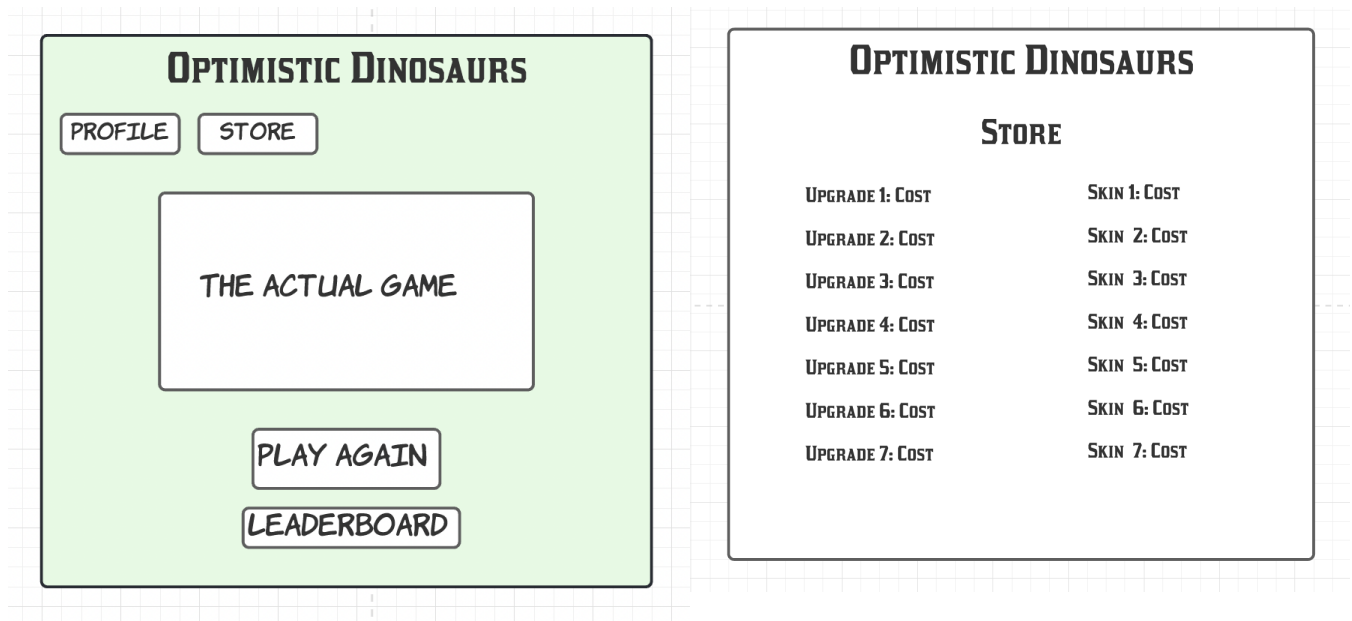
Optimistic Dinosaurs - Yuqing Wu (Zero), Hebe Huang (Umbreon), Roshani Shrestha (Pete),  
Justin Zou (Piggy)  
SoftDev Pd2  
P02 -- Run For Your Life | Design Doc  
2022-03-01

## Project Description:

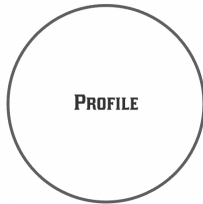
We are making an infinite runner game, similar to the offline dinosaur game except it wouldn't be available offline. It will have the character be able to jump and duck under randomly generated obstacles. Users will control the character through the keyboard. When the character runs into an obstacle, the game ends and the user can log in to upload their high score on the leaderboard; this score will be the total distance traveled. The user can also visit the store and purchase items, such as skins and power-ups, using coins collected during the game. The user can view their profile to see what items they have and equip them.

## Templates:

[https://lucid.app/lucidchart/d696c5b6-446e-4bdd-9248-5fb92eed5987/edit?invitationId=inv\\_f90cfbf5-8e74-4035-b4ff-27facdc09f26](https://lucid.app/lucidchart/d696c5b6-446e-4bdd-9248-5fb92eed5987/edit?invitationId=inv_f90cfbf5-8e74-4035-b4ff-27facdc09f26)



## OPTIMISTIC DINOSAURS



COIN AMOUNT +  
HIGHEST SCORE

Select a Skin to Use

SKIN

SKIN

SKIN

SKIN

...

BUY ANOTHER

## OPTIMISTIC DINOSAURS

### LEADERBOARD

1. USERNAME
2. USERNAME
3. USERNAME
4. USERNAME
5. USERNAME
6. USERNAME
7. USERNAME
8. USERNAME
9. USERNAME
10. USERNAME

## OPTIMISTIC DINOSAURS

USERNAME

PASSWORD

REGISTER

## OPTIMISTIC DINOSAURS

USERNAME

PASSWORD

LOGIN

# Program components:

## Frontend

- HTML
  - “/”
    - The user can click a start button to start the game or login and then start to record their scores.
    - Displays the leaderboard once the game ends.
  - “/login”
    - Asks the user for username and password and checks them.
  - “/register”
    - Asks the user for a new username and password and checks them.
  - “/leaderboard”
    - User can view the leaderboard with all the highest scores of the users in order from highest to lowest
  - “/store”
    - A shop page for the user to purchase things with the coins the user collects in the game.
    - User can buy power ups
      - Magnets, speed changes, reviving, double coins, invincibility
    - User can also buy skins
      - For characters, coins, backgrounds
  - “/profile”
    - View items that the player has bought
    - Switch between skins and power ups
- CSS
  - We will be using Bootstrap as our front-end framework because we think it looks better visually.
  - Features we will be using:
    - Gridding system for formatting
    - Drop-down menus and carousels for profile customization
    - Buttons and different button styles
    - Form controls for the login and register pages
- JS
  - Moving obstacles towards the character so the character looks like running.
  - Respond to UP\_ARROW, DOWN\_ARROW key for jumping and ducking.
  - Check for game ends. Stores and updates locations of obstacles.
  - Generate new obstacles.
  - Speeds up the game over time.
  - Displaying leaderboard.

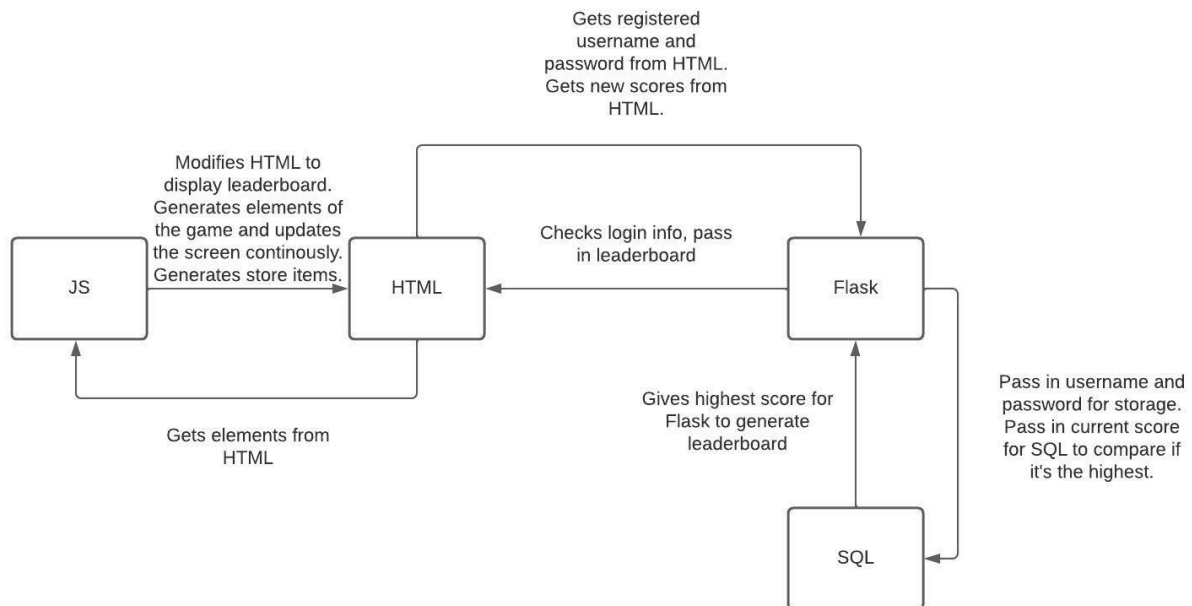
- Displaying scores.
- Possible feature: moving obstacles up and down (left and right) for character to avoid.

## Backend

- Python / Flask
  - Handle login / registration
  - Generate leaderboard
  - Get highest score
  - Render pages
- Databases
  - Player Database: username | password | highest\_score
  - Store Database: item | price
  - Items database: player | item\_type | item

## Component Map:

[https://lucid.app/lucidchart/5a6d63a5-5b2c-438d-a813-e1269bd2772c/edit?invitationId=inv\\_9e8df603-817c-4c3e-b549-d19faf04a9e6](https://lucid.app/lucidchart/5a6d63a5-5b2c-438d-a813-e1269bd2772c/edit?invitationId=inv_9e8df603-817c-4c3e-b549-d19faf04a9e6)



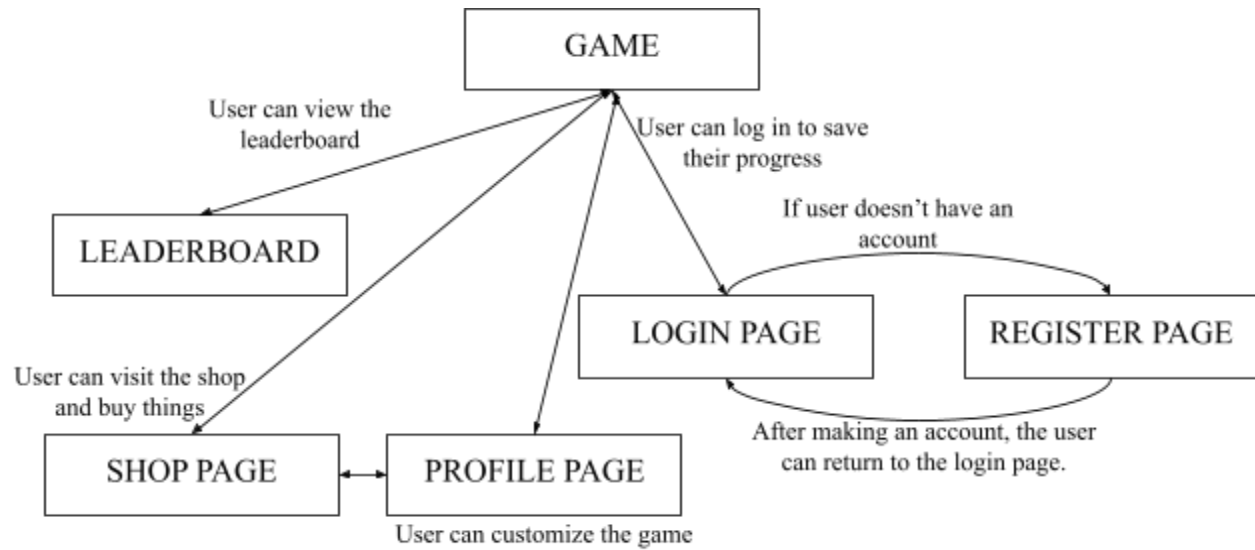
## Database Organization:

USERNAME (TEXT)	PASSWORD (TEXT)	HIGH SCORE (INTEGER)
username0	password0	score0
username0	password0	score0

STORE ITEM (TEXT)	ITEM TYPE (TEXT)	PRICE (INTEGER)
item0	item_type0	price0
item1	item_type1	price1

PLAYER (TEXT)	ITEM TYPE (TEXT)	ITEM OWNED (TEXT)
player0	item_type0	item0
player1	item_type1	item1

## Site Map:



## APIs:

### Background Images:

We might use this API to insert a background image for the game to run on, with the character and the obstacles on top of it. We are going to make a white rectangle in the middle to display the game so it won't be hard to see with the background.

- Lorem Picsum:

[https://github.com/stuy-softdev/notes-and-code/blob/main/api\\_kb/411\\_on\\_LoremPicsum.md](https://github.com/stuy-softdev/notes-and-code/blob/main/api_kb/411_on_LoremPicsum.md)

## Task Division:

### Frontend/Templates:

- Game.html (Justin)
- Login.html (Justin)
- Register.html (Justin)
- Leaderboard.html (Roshani)
- Store.html (Roshani)
- Profile.html (Hebe)

### Flask/Python:

- Buy things (Justin)
- Rendering pages (Everyone)
- Setting skins/items the user selects from profile page (Justin)

Leaderboard/backend database:

- Login + score database (Justin)
- Store database (Hebe)
- Items owned database (Roshani)

Game Tasks:

- Moving the map, increasing speed, updating score based on distance (Hebe)
- Implementing backgrounds/sprites/skins (Yuqing)
- Generating, collecting, updating coins (Hebe)
- Generate Obstacles (Yuqing)
- Making the character jump/duck (Roshani)
- Detect game ends (Roshani)
- Power-ups/skills (Yuqing)

## Timeline:

3/10

Moving map - Hebe

Generate obstacles - Yuqing

Make character, item owned database created - Roshani

Login & game page - Justin

3/14

Detect game ends - Roshani

Store database - Hebe

Set skins / items the user selects from profile page - Justin

3/17

Implements background / skins - Yuqing

Store html, rendering store items - Roshani

Profile.html, updating scores & passing them to flask - Hebe

Buy things - Justin

3/21

Power-ups - Yuqing

Generate, collect, update coins - Hebe

Adding power ups to store - Roshani

Leaderboard backend stuff - Justin

3/23

Leaderboard frontend - Roshani

Speeding up game - Hebe

Adding css / advanced features - everyone

## Target Ship Date:

March 23, 2022