SUPINFO Academic Dept.

JSFight
B.Sc. - Bachelor of Science

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1. JSFight

1.1. Context

SupGame is a new society specialized in HTML5 games development. As a new developer working for them, you'll have to develop an HTML5 version of a famous game: **Street Fighter**.

Your goal is to develop an online 1vs1 fighting game with stickmen as characters. A leaderboard will be available and display who is achieving the best score!

1.2. What's expected

For this first version, you have to develop an online multi-user version. For more information about the game, you can read the following Wikipedia article: http://en.wikipedia.org/wiki/Fighting_game

Find here a working version example: http://www.stickpage.com/stickfightergameplay.shtml (Flash needed)

Your version needs to have:

- A registration area with a profile management

- A game area to play

- A ladder area to compare players

As SupGame wants to use this version in highly optimized web apps, **you are NOT allowed to use neither client framework nor libraries (except VueJS)**. Consequently, you can only use **JavaScript, Canvas and/ or SVG**.

For the server part, you must use NodeJS and Express.

Database Management System must be MongoDB.

For the client side, you must use VueJS.

Note: Don't spent too much time creating awesome stickmen. Their design won't be graded. Be sure to have a working project before any kind of improvement.

1.3. Data Structure

Before starting the project, draw an UML class diagram representing the Entities you will need with their relationships.

This diagram will be useful for you and for the team that will develop the next version of the platform.

The class diagram must be returned in *jpeg*, *png* or *pdf* format (otherwise your teacher will hate you!).

1.4. Registration & login area

Users must register on your website to use your application. Required fields are username and password.

Users must authenticate themselves with their username and password. No email confirmation is asked for this project version. Be careful, as SupGame cares a lot about security, you must save **hashed passwords only** in database.

1.5. Lobby area

When authenticated, users will be redirected on the lobby page.

In this page, you will display all users currently online. A simple chat is available to talk with everyone. You can play by two means from this page:

• By clicking on an user name

- By clicking on a "Quick fight" button

The Quick fight button will take the closest online user considering his position in the leaderboard (see below for more information).

No matter how you start a fight, a notification is sent to the selected user. He can accept or deny your invitation to play.
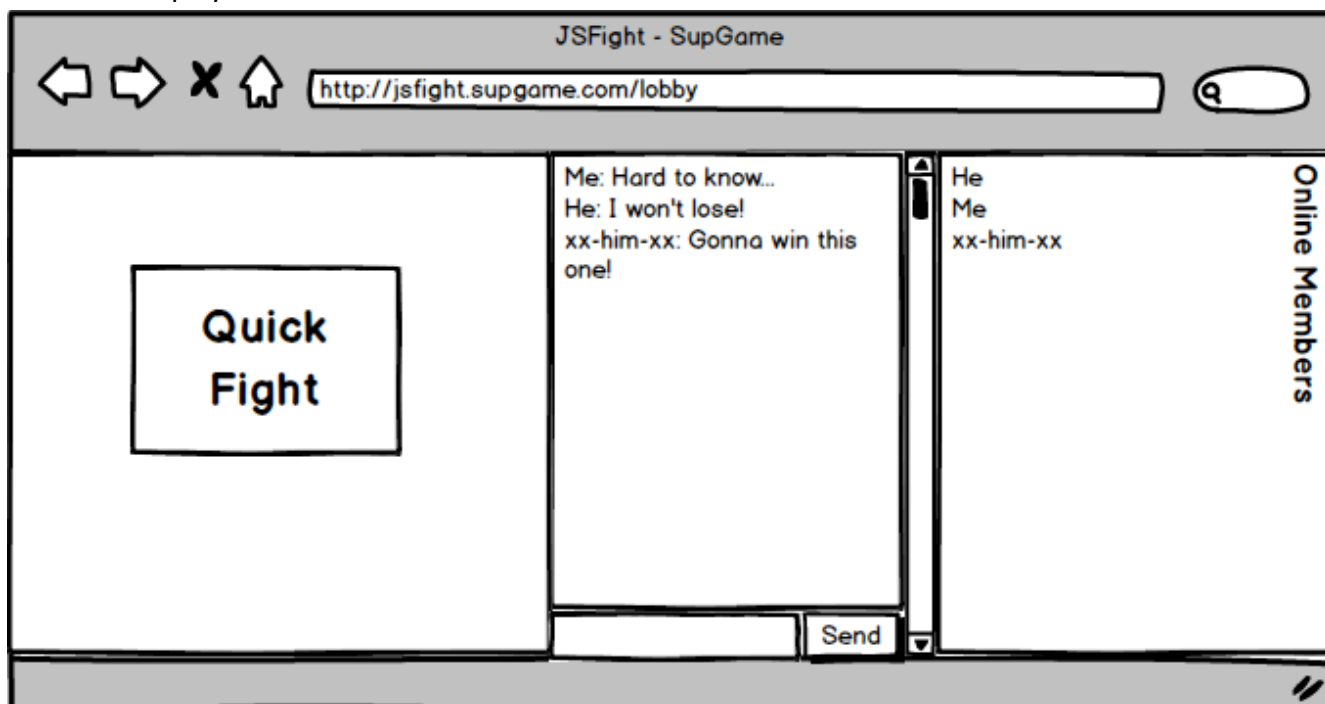
1.6. Game area

The game board will take the window size. It is separated into three zones:

- An *information zone* with time elapsed and both stickmen life bars

- A *fight zone* where the fight takes place

- A *controls zone* where controls are displayed

Obviously, the game stops when a stickman's life drops to 0.

1.7. Controls

You are free to define any controls, any attacks, their hitbox and damages, but there are some minimum requirements. Stickmen can:

- Move

- Jump

- Crouch

- Block

- Punch (at least one)

- Kick (at least one)

- Special attack (at least one)

Stickmen can't move while crouching, blocking or attacking, but they can when they jump.

One attack must target the chest of the opponent and one other must target the legs.

Stickmen can crouch and block at the same time to block low attacks.

Attacks must have some "cooldowns": they must take some time to be launched.

1.8. The ladder

Based on **win**, **lose** and **amount of time played** statistics, a page must display a simple dropdown list to select criteria and display a sorted list of players.

Based on this ladder, the "Quick fight" button can search for the closest online user to start a fight.

2. What you need to do/know

2.1. Understand Client Need

Before you start, make sure you've understood the client's needs and have thought the project out. Write stuff down, draw schemas if you need to.

THINK SIMPLE! DO NOT GO OUT OF YOUR WAY IN COMPLEXITY.

2.2. A little help

The VueJS and NodeJS online documentation are a very well-documented encyclopedia with lots of code and examples.

2.3. A Quick Reminder

Courseworks have a research phase. Some of the tasks required may not be listed in your lessons, you will probably need to do a bit of research.

N.B: Looking something up on Google is not copying and pasting code. Read, understand, and do your own version according to your needs. Copy-pasting will be considered as cheating and stealing.

3. Evaluation

3.1. No cheating

This is a group project, therefore you are not allowed to host your project online, use some group else's code, copy and paste code from the internet. If someone is caught cheating, he will receive a 0 mark and be marked as cheater.

3.2. Grading Scale

- Data Structure (2 points)

- Register and login (1 point)

- Lobby area (2 points)

- Invite someone (2 points)

- Quick fight button (2 points)

- The game is playable without bugs (4 points)

- Controls are easy to handle (3 points)

- Requirements are fulfilled (3 points)

- Fight complexity (many attacks and added concepts) (5 points)

- User eXperience, Code quality and Conventions (2 points)