

## **Project**

### **CSci130 – Web Programming**

**Fall 2018**

**Department of Computer Science, College of Science and Mathematics, Fresno State**

#### **Deadline:**

The following text provides a description of the project. It is a group project, with a maximum of 2 students per group.

The goal of this project is to create the game Picross or Nonogram.

You can find more information about the game here:

<https://en.wikipedia.org/wiki/Nonogram>

We define the score as:

Score =  $\max((\text{number of non-space elements} - \text{number of errors}), 0) / \text{number of non-space elements}$ .

## Functionalities

### Part 1.

1. ~~You can change the size of the grid in the game (7x7 or 13x13)~~
2. ~~You can change the color of the grid through the webpage.~~
3. You can change the color of the blocks through the webpage.
4. It provides a timer that gives the time since the beginning of the game.
5. It indicates how many elements are placed on the grid.
6. It indicates the current number of turns in the game.
7. It can detect when the game is complete or when there is an error. When a player has won the game, a message will be displayed giving the time.
8. A tool to suggest the worst or best moves for the players.
9. You can create random levels.
10. You can create levels from images that you will upload.
  - Upload the image, transform the image into a level.
11. You can select two modes: arcade (finish a series of predefined levels) and time attack (finish a series of level as fast as possible).

### Part 2.

1. The levels must be stored and read on the server side.
2. You will create a database with the main tables "Players", "Games", and "Levels".
3. You can create an account (login+password) for each player specifying: First Name, Last Name, Age, Gender, and Location.
4. Each player can upload a picture representing his/her avatar that will be presented in the webpage.
5. A game is represented by: Player, Duration of the game, Number of errors,
6. ~~You can display the best players ordered by score, time played, in order or reverse order, for the two categories of grids (7x7 and 13x13).~~

### Webpages must contain:

1. A main page that gives the title of the game.
2. A menu where it is possible to navigate through different pages.
3. A page that briefly describes how to play.
4. A page that provides the main grid for the game when the game starts.
5. A page that provides information about the author(s) of the program (such as a mini CV).

### Webpages must include:

1. Structured HTML5 elements with header, footer, sections, div ,...
2. Appropriate CSS3 content (layout of the pages). The layout will be judged on the consistence of the presentation across the different elements, and how you have judiciously used the features of CSS3, in particular with the use of different panels for the presentation of the different entities.
3. Addition of WAI-ARIA features to improve the accessibility of the webpages.