

WSC2019\_5in1\_Client\_Side\_EN

**TEST PROJECT**

**WEB DESIGN**

Client Side

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**Submitted by:**

# CONTENTS

This Test Project proposal consists of the following documentation/files:

1. WSC2019\_5in1\_Client\_Side\_EN.docx
2. WSC2019\_5in1\_Client\_Side\_MEDIA.ZIP – Media Files

# INTRODUCTION

With rapid development of the Internet, front-end games have become more and more popular among white-collar. In this module, your task is to design a clear-theme maze game that can be accepted by people. In order to expand popularity of this game, it should adapt for Chrome and Firefox and work best in Chrome. Maze game should use new HTML/CSS technology to make front-end layout and create the functionality of game using normalized JavaScript. You will be provided with enough materials and the front-end framework. The resolution of this game is 1650\*850. Mazes with different difficulty should be displayed reasonably in this resolution.

# DESCRIPTION OF PROJECT AND TASKS

This module is to be completed in 5 hours. The first 2.5 hours must be used to create the design of the game in three PNG images and the layout using HTML/CSS. Your HTML/CSS layout should follow the design file (PNG) that you created. The final 2.5 hours you will create the functionality of game using JavaScript ensuring the game works correctly in different web browsers, following the requirements described below.

The main menu page uses elements described below:

1. **Instruction button**: Jump to a self-written game instruction with an interactive effect
2. **Start button**: Jump to difficulty selection page.
3. **Ranking button**: Jump to ranking table.

The game difficulty selection page uses elements described below:

1. **Easy button**: Player's initial remaining steps is 200, size of maze is 750\*750.
2. **Normal button**: Player's initial remaining steps is 250, size of maze is 1050\*750.
3. **Hard button**: Player's initial remaining steps is 350, size of maze is 1350\*750
4. **Map import button**: fetch JSON-format map files specified in the TP (The map files in the media file can be fetched without any modification).

After the player chooses a kind of map or imports the map, he should jump to the map management page.

Map management page uses elements described below:

1. **Main menu button**: go back to the main menu
2. **Map display**: after the player enter the page, it will generate six maps automatically according to the difficulty selection chosen by user or fetched map files. The maps will be shown as thumbnail which only include maze main route in the panel. After player choose one map, it will go to game panel.
3. **Export the map**: export six generated maps to a Json-format .map files.
4. **Difficulty**: display the difficulty of current map.

The game page uses elements described below:

1. **Main map panel**: show the map in correct size that selected by player in advance
2. **Character**: character controlled by player will be displayed in the main map panel
3. **Key of the maze**: The key that will be used to unlock the maze exit should appear in the main map panel randomly.
4. **Best route reminder button**: to open/close the reminder of the best route. After opening the reminder, the best route from entrance to the exit will be displayed.
5. **Remaining steps**: under different difficulties, it will show the most steps that player can move.
6. **Nickname**: display the game nickname input by player
7. **Pause button**: to pause/start the game
8. **Timer**: to record the time of the game
9. **Used steps**: to record the used steps till now
10. **Main menu button**: go back to the main menu

The game ranking page uses elements described below:

1. **Difficulty-switch button**: click to display players’ rankings with 3 levels separately : easy, normal and hard.
2. **Ranking**
3. **Nickname**
4. **Consumed time**: time-consuming by player in the game
5. **Steps**: used steps in the game

The game includes a mute button to turn off the game sound. After turn on the mute button, the game sound will turn off.

## FIRST 2.5 HOURS – DESIGN AND LAYOUT

1. Deliver at least 5 PNG image files that present:
   1. Main page
   2. Difficulty selection page
   3. Map management page
   4. Maze game page
   5. Ranking page

1. Implement the 5 designed pages in HTML/CSS.
2. The HTML and CSS code must be valid in the W3C standards for HTML 5 and CSS 3 rules.

## FINAL 2.5 HOURS – GAME FUNCTIONALITIES

1. When visiting the main director of the game, the main menu of the game will be displayed. The game instruction in the main menu should be hidden by default and can be displayed through an interaction.
2. Click start button in the main menu will jump to difficulty-selection page. The difficulty-selection page should include difficulty-selection button, import map button and the main menu button.

2.1 There will be 3 difficulty levels of easy, normal and hard. After player chooses the game difficulty, it will go to map-selection page, and 6 relevant game maps will be generated by system and displayed in the map preview area. The border of the map should be Impenetrable walls except for the entrance and the exit. The six maps couldn’t be repeated.

2.2 Clicking import map button, player can upload .map files (6 maps each). The map format should refer to the .map files provided in materials. After uploading by player, the game map will be generated automatically according to the .map files, and then jump to map management page.

2.3 Clicking the main menu button could go back to the main menu of the game.

1. After generating or importing the map, the game will go to map management, which includes map preview area, main menu button, export map button.

3.1 Map preview area is to display the six maps inputted/generated by player. After player inputs/generates maps, six game maps and their corresponding difficulties should be displayed in this area.

3.2 Clicking export map button, the six maps in current preview area will be exported to .map files automatically and the exported map can be input again through input function correctly.

3.3 Clicking the main menu button could go back to the main menu of the game.

1. After clicking one map, maze game page will be shown automatically.

5. After player enters the maze game page through map management, player should be noticed to input his nickname and the system will record it. Selected maze map should be displayed correctly in the page. Player’s initial location should be at the upper-left entrance of the maze and the exit should be at the bottom right of the maze. The key of the maze will appear in the accessible route randomly, but it won’t appear in the best route. Every time entering the game, the key’s location will generate randomly. The exit will be closed by default. After player get/trigger the key, the exit will open automatically with an animation.

6. Players can use keyboard（arrow key）to control the character to move in the maze. Character should be blocked by walls in the maze. The character will move one step by one key click and will lead a 30px offset in the map in correct direction.

7. The top of the maze game panel should display the best route button, remaining steps, pause/start button, timer, used steps, mute button and main menu button.

7.1 **The best route reminder button**: After clicking this button, the reminder of the best route from the entrance to the exit will displayed in the map and this route must be accessible and uses the least steps.

7.2 **Remaining steps**: to show remaining steps according to the game difficulty requirements. The player moves one step, the number will decrease by one. When the remaining step is 0 and the player doesn’t reach the exit which has already opened, the game fails.

7.3 **Pause/start button**: to pause/start game. After pausing the game, player can’t move the game character and timer stops.

7.4 **Timer**: initial number is 0 and the time of the game is recorded in seconds from the start of the game.

7.5 **Used steps**: initial number is 0. Player operate the character to move one step, the number will increase by one.

7.6 **Main page button**: Click to go back to the main menu of the game.

8. There should be a sound effect when the game win, the player gets the key, the exit opened, the game fails. The appropriate background music should be implanted throughout the game to enhance the gameplay.

9. When the character controlled by player reaches the exit within the remaining steps, player win the game with wining reminder. The reminder page includes play again button, ranking table button and displays using time and steps. After winning the game, the game data will be automatically saved and put into the rankings.

10. When the game is failed, the fail page will be displayed, which includes play again button. Clicking this button will go back to map management page.

11. When the player enters the ranking table, game rankings will be displayed according to different difficulties. Each ranking table should include rankings, player’s nickname, used steps, consumed time data. The ranking is in ascending order according to the consumed time, and when there is the same consumed time, the ranking is in ascending order according to the used steps. When the used steps and consumed time are the same, the ranking is juxtaposed.

12. The ranking data should be saved in the database referring to the php files provided in the materials.

13. Your game should work without JavaScript errors or messages shown in the browser console.

14. Maintain your HTML/CSS and JavaScript code organized and clean to facility the future maintenance, use correct indentation and comments.

15. The game needs to works correctly in both browsers (Google Chrome and Mozilla Firefox). The game requirements will be checked in Google Chrome and compatibility will be checked in Mozilla Firefox.

INSTRUCTIONS TO THE COMPETITOR

* The media files are available in the ZIP file. You can use jQuery and jQuery UI if you find it necessary.
* Save your design files in a folder call "XX\_Client\_Side/XX\_design" where XX is your workstation number.
* Files names:
* **The main page**: XX\_ game\_main.png
* **Difficulty selection page**: XX\_game\_selection.png
* **Map management page**: XX\_game\_management.png
* **Maze game page**: XX\_game\_board.png
* **Ranking page**: XX\_game\_ranking.png
* You should create additional images for each of the requested resolutions to highlight hidden elements, animations, interactions, or any additional information that will assist in the presentation of the game design.
* Additional file names
* The main page： XX\_ game\_main\_1.png, XX\_ game\_main\_2.png…
* Difficulty selection page： XX\_game\_selection\_1.png…
* Map management page： XX\_game\_management\_1.png…
* Maze game page：XX\_game\_board\_1.png…
* Ranking page: XX\_game\_ranking\_1.png…
* Save any image source files to a folder named "**XX\_Source**" inside the "**XX\_Client\_Side/XX\_design**" folder. The source files are the files that contain the layers, development files, ie .psd, .ai, .svg.
* Save your implemented page inside the "**XX\_Client\_Side/XX\_layout**".
* Save the working game to the directory on the server named "**XX\_Client\_Side**". Be sure that your main file is called index.html.
* Use meaningful variable names and document your code as much as possible so another would be able to modify your work in the future.
* The registration of game results will be handled through a server service for all competitors. Be sure that the address is correct and the variables and formats are correct to permit a correct registration in the database. In case of error the JSON error messages returned to request.

[

{"error":"Error Message"}

]

* You are responsible for managing your time. If you finalize a task you can continue to another task. If you complete the required tasks to be submitted at the end of the 2.5 hours, you can start the tasks for the final 2.5 hours.
* The module will be assessed in Chrome and FireFox.