SDW1 2017 Spring Semester Project

**Web Game - Whac A Mole**

**System Design Specification (SDS)**

**Version 4.0**

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1. Document Change Log

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| --- | --- | --- | --- |
| ***Change Date*** | ***Changed By*** | ***Version*** | ***Change Description*** |
| *02/24/2017* | *Zhenghao Wu* | *Beta 1.0* | *Prepared Document* |
| *03/11/2017* | *Zhenghao Wu* | *Beta 2.0* | *Add Basic Frame* |
| *03/17/2017* | *Xianggao Gu* | *Beta 2.5* | *Content modification* |
| *03/18/2017* | *Zhenghao Wu* | *3.0* | *Finish content* |
| *03/18/2017* | *Xianggao Gu* | *4.0* | *Finish all information* |
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1. Overview

## Purpose

This is a web game called ‘Whac A Mole’ written by HTML/CSS/JavaScript. In this game, players should hit as many moles as they can to get scores. We will record and show players’ scores at the end of game.

## Software Target Customer

This is a casual game for gamers of all ages.

## Aim

* Train player's response speed
* Relaxing and entreating

1. Tools and Standards

## Tools

* *HTML & HTML5*
* *CSS & CSS 3*
* *JavaScript*
* *Bootstrap (V4.0.0 Alpha 6)*
* *jQuery[Maybe]*

## Standards

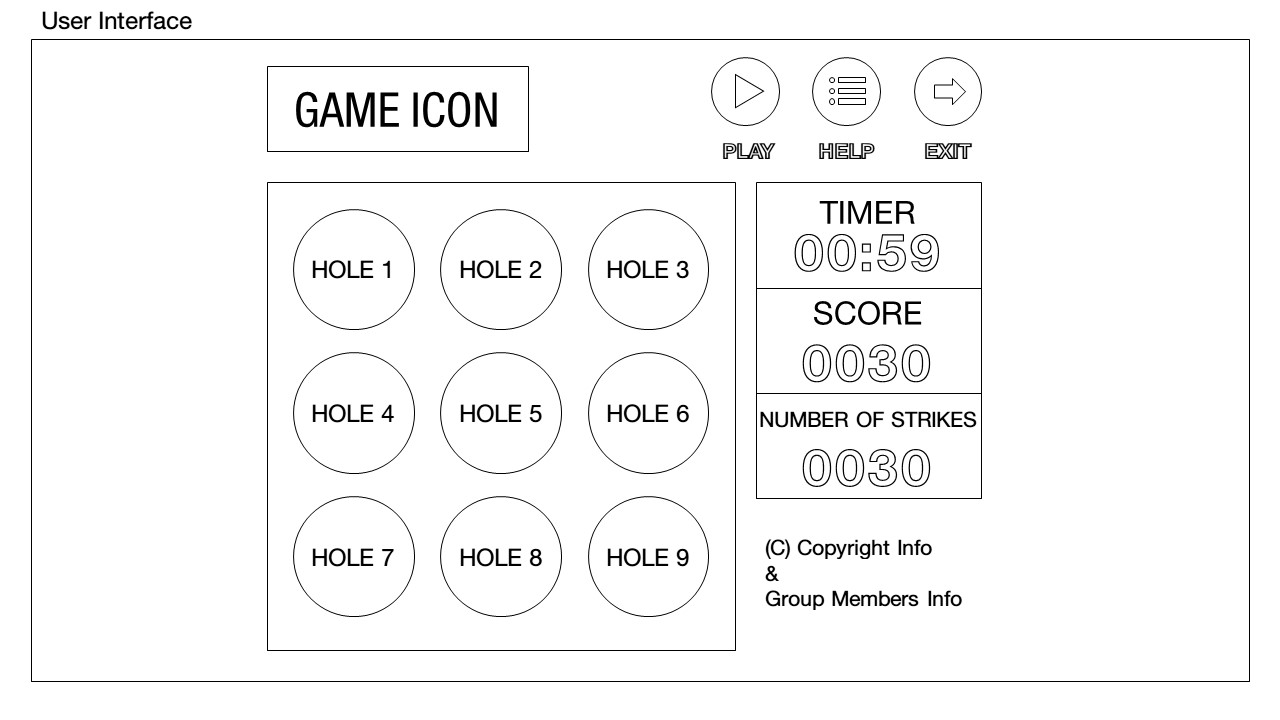
* Testing on latest stable version of Google Chrome browser (56.0.2924.87 (64-bit) or later).
* Using XHTML Standard.
* Using UTF-8 encoding Standard.

1. System Design

## Game Description

* ‘Game icon’ is on the upper left corner of the game interface. The icon will link to this page.
  + There are three buttons on the right of the icon. They are ‘PLAY’, ‘HELP’, ‘EXIT’.
  + After clicking ‘PLAY’ button, the moles will show and countdown begins. At the same time, the ’PLAY’ button will be changed into ‘REPLAY’.
  + After clicking ‘HELP’ button, there will be a floating window which can be closed. The introduction about the game will be there.
  + After clicking ‘EXIT’ button, a window will prompt and ask player whether to leave. If player confirms to leave, the web page will jump into UIC official website.
* There are nine holes under the icon. No use in clicking before the game start.
* ‘TIMER’, ‘SCORE’, ‘NUMBER OF STRIKES’ are under the buttons.
  + ‘TIMER’ records the remaining time of the game, and when the remaining time is 0, game over.
  + ‘SCORE’ displays player’s current score. The initial score is 0. Every successfully hit at mole will lead score plus 1.
  + ‘NUMBER OF STRIKES’ will plus 1 if you click the mole hole during the game time
* Copyright information and group information are on the bottom right corner of the page.
* At the end of the game, there will be a window showing the final score and the occurrence number of mole.

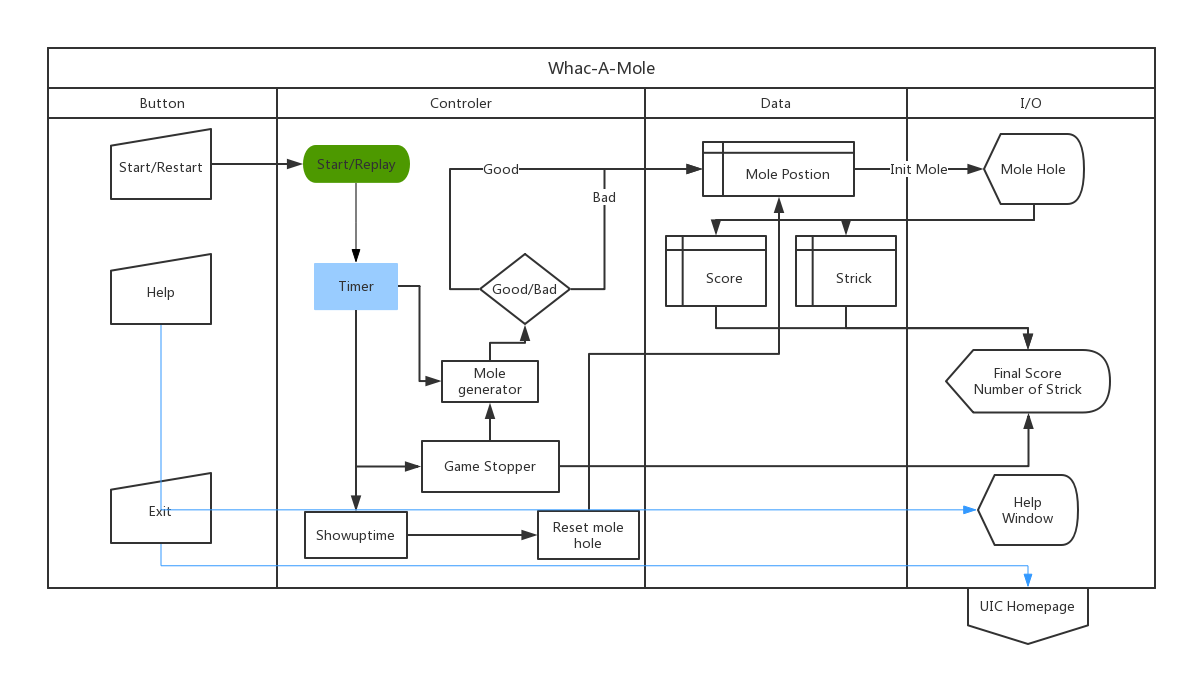
## Interface Design



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class | Element Name | Element ID/Class | Attributes | Value |
| body | body | body | Font-family | "Segoe UI", Roboto, "Helvetica Neue", Arial, sans-serif; |
| Heading Area | Heading container | headingContainer | Margin/padding | 0 20% |
| Images | Logo/Icon | game\_icon | Width/Height | 200px/75px |
| Button Group | Play & Replay Button | playBtn | Width/Height | 50px/50px |
| Help Button | helpBtn | Width/Height | 50px/50px |
| Exit Button | exitBtn | Width/Height | 50px/50px |
| Hole Area | container | holeContainer | Width | 65% of the container |
|  |  | margin | 25px |
| Mole Hole | Hole\_i | Shape/width | Square/ 33.3% of the holeContainer |
|  |  | margin | 10px |
| Info Area | Timer | InfoTimer | width | 20% of the container |
| timertitle |  | Align/Font-size | center/25px |
| time | InfoTimerTime | Font-size | 45px |
|  |  | padding | 10px 30px 10px 30px |
| Scores | infoScore | Align/Font-size | center/25px |
| scoretitle |  | Font-size | 45px |
| Score |  | padding | 10px 30px 10px 30px |
| Number of strikes | InfoNumberOfStrikes | Align/Font-size | center/25px |
|  |  | Font-size | 45px |
| Copyright Area | Copyright info | copyrightFooter | Align | left |

|  |  |
| --- | --- |
| Resource |  |
| Name | about |
| Hole.png | A normal mole hole |
| Hole\_goodmole.png | mole hole with a hittable mole |
| Hole\_badmole.png | mole hole with a “bad mole” |
| Btn\_play.png | Play button |
| Btn\_replay.png | Replay button |
| Btn\_help.png | Help button |
| Btn\_exit.png | Exit button |
| Icon.png | Game icon |

## Event Diagram



1. Test Procedure

## Special Requirements

* *Manual*
* *Test environment:*
  + *Google Chrome browser (56.0.2924.87 (64-bit) or later).*
  + *UTF-8 Encoding Browser*

## Steps

* Syntax test
  + Using The [W3C Markup Validation Service](https://validator.w3.org/) to test HTML file’s markup validity.(XHTML Standard)
* Browser test
  + Make sure all elements can be shown regularly.
  + All hyperlinks can link to scheduled website.
  + “Start Replay” “Help” and “Exit” buttons can work.
    - ‘Help’ window can be closed
    - Exit button will be linked to UIC Homepage
  + Timer can work
  + Number of Strikes counter will plus one if you click once.
  + When you hit the mole, the Score counter will increase 1.
  + Non-hit mole will disappear after “show-up-time” occurs.
  + When bad mole was hit by the user, scores will decrease 1.
    - When scores reach to 0. Game Over.
  + When countdown ends. Game Over
    - Score and Number of Strike window will pop up.
  + When you click ‘replay’. The game will be initialized and restarted