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

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

2. Table of Contents

3. Overview

3.1. 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.

3.2. Software Target Customer

This is a casual game for gamers of all ages.

3.3. Aim

- Train player's response speed
- Relaxing and entreating

4. Tools and Standards

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

4.2. 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.

5.   System Design

5.1.   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.

## 5.2.   Interface Design

User Interface
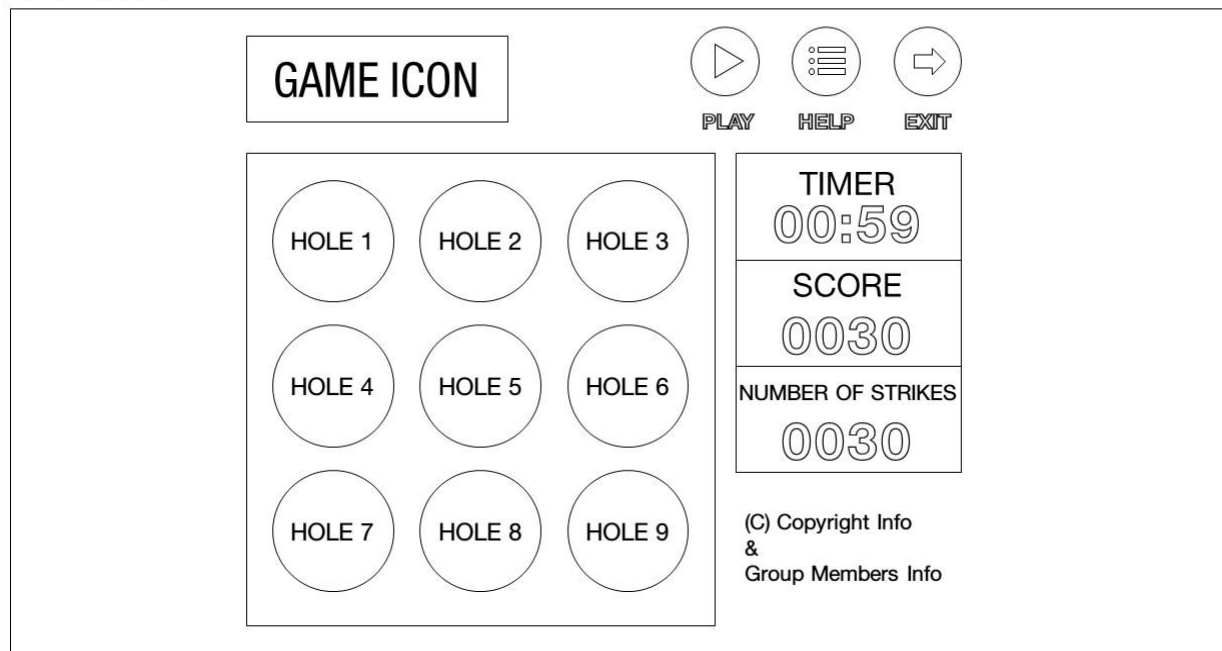
Class	Element Name	Element ID/Class	Attributes	Value
body	body	body	Font-family	"Segoe UI", Roboto, "Helvetica Neue", Arial, sans-serif;
Heading Area	Heading container	headingContainer	Margin/padding	0 20%
Images	Logo/Icon	game_icon	Width/Height	200px/75px
Button Group	Play & Replay Button	playBtn	Width/Height	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
	Timer	InfoTimer	width	20% of the container
	timertitle		Align/Font-size	center/25px
	time	InfoTimerTime	Font-size	45px
Info Area			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

5.3.   **Event Diagram**
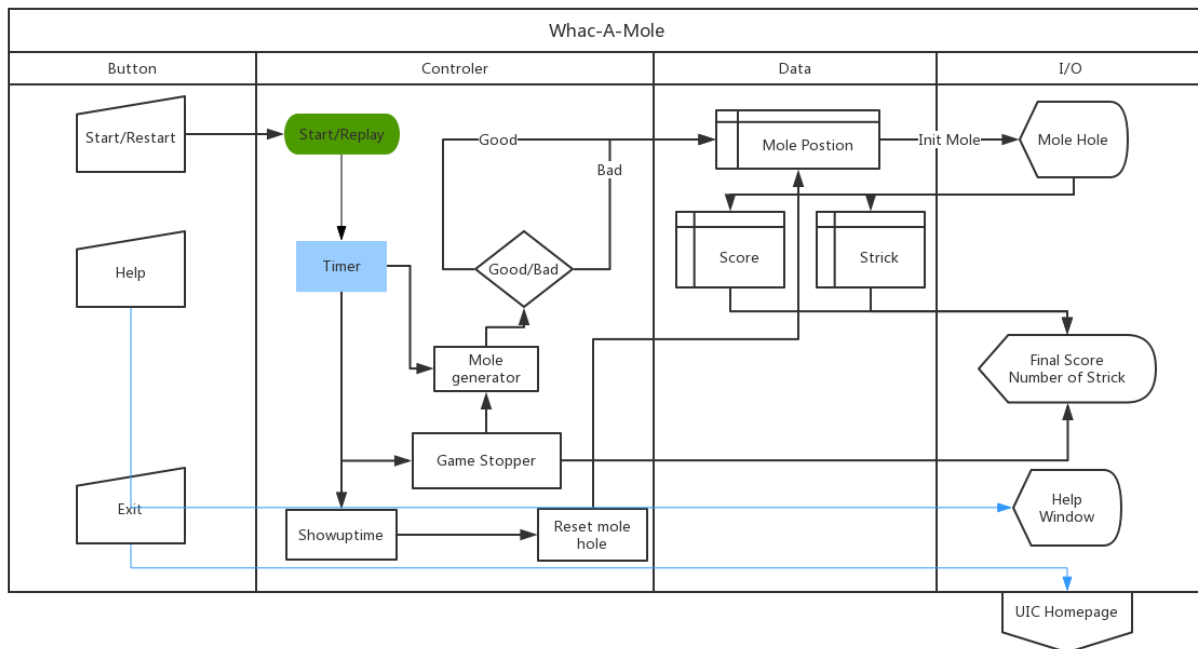
6.   Test Procedure

6.1.   **Special Requirements**

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

6.2.   **Steps**

- Syntax test
  - Using The W3C Markup Validation Service 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