

第 48 屆全國技能競賽暨第 45 屆國際技能競賽國手選拔賽

競賽試題及說明

職類名稱：17 網頁設計

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太空射擊遊戲

INTRODUCTION 介紹

In recent years, the Internet has become an integral part of our daily lives, enabling the dissemination of information in an inexhaustible source of content and interaction. Gaming plays a prominent role in our daily lives, allowing millions of people to get access to fun and entertainment quickly and free. 近年來網路已成為我們生活中不可或缺的一環，線上互動與無盡的資源讓資訊得以傳播。科技日新月異，電腦遊戲的開發漸受重視，因為能讓人能夠快速、免費地享受樂趣。

Reflecting on these concepts, you decided to develop a small game that works in the most common web browsers and showcases your talent in the skill of web design and development. The game will be called **Star Battle**.

以這樣的概念出發，你決定開發一款小遊戲，可以在最普遍的瀏覽器上運行，開發過程盡可能發揮你在網頁設計與開發上的專才，該款遊戲名為 **Star Battle**。

You should design the game, develop the layout using HTML and CSS and develop client-side programming using JavaScript and its open source libraries. Some media files are available to you in a zip file. You can create more media and modify anything in the media if you want.

由你來設計該遊戲，遊戲開發會使用到 **HTML** 及 **CSS** 來設計版面，也會使用 **JavaScript** 及開放資源函式庫為客戶端撰寫程式，壓縮檔中的多媒體檔案供你使用，你可以創建更多媒材，想要的話也可以修改原有多媒體檔案。

To be used in different resolutions your game needs to be developed in a tablet resolution with 960x600 pixels (Resolution of Google Nexus 7). But, if game is open in a big screen, the game must be in the center of the screen (horizontally and vertically).

為了適用於不同螢幕解析度，該款遊戲開發必須適用於平板電腦螢幕解析度 **960x600** 像素 (**Google Nexus 7** 的螢幕解析度)，若使用大螢幕開啟遊戲，遊戲畫面應在螢幕的置中位置(不論水平或垂直)。

DESCRIPTION OF PROJECT AND TASKS 任務說明

本模組要求你要創建遊戲的美術樣式(可從最後完成的遊戲畫面中抓取)，以至少 **3** 個 **PNG** 檔顯示，建議先用 **HTML/CSS** 設計初始(initial)版面，再使用 **JavaScript** 來建立遊戲的功能性，使其能在不同網路瀏覽器上正確運行。請遵循以下要求：

Star Battle game uses elements described below:

1. Main spaceship: Element that is controlled by the player.
2. Planets in background: Elements that move from right to left to give the impression of movement of the spaceship in the space.
3. Enemy spaceships: Flying saucers that player needs to destroy to get points.
4. Asteroids: Elements that spaceship needs to destroy to get points.
5. Friendly spaceships: Elements that player shouldn't destroy or player will lose points.
6. Fuel icon: Elements that spaceship needs get to increment the fuel level.
7. Fuel Counter: Element that shows how much fuel is available. It must be a number and a graphical element and it should be animated when the fuel is decreasing and when the user gets more fuel.
8. Score Counter: Elements that shows how many points the user got destroying asteroids and enemy's spaceships.
9. Timer: Elements that shows how much time the spaceship is flying.
10. Sound Button: Enable and Disable the sounds in the game.
11. Font Size Buttons: Up and Down to increase and decrease the font size.
12. Pause/Continue button: Button to pause/continue the game.
13. Sensible areas to control the spaceship.
14. Logo: Add the provided logo in the game.
15. Shoot: Shoot by the ships.

Star Battle 的遊戲元素:

1. 主要太空艦: 玩家控制的元素
2. 背景星球: 由右向左移動創造出太空艦在太空中飛航的動態
3. 敵方太空艦: 玩家要擊毀飛碟，才能得分
4. 隕石: 玩家要擊毀的元素，才能得分
5. 友方太空艦: 玩家不能攻擊友方太空艦，否則會失分
6. 燃料錶圖示: 玩家要收集的元素，才能累積增加燃料量
7. 燃料計量器: 顯示目前累積的燃料量，要有數字及圖形元素，搭配動畫顯示燃料在減少，以及玩家獲得更多燃料。
8. 計分器: 顯示玩家擊毀隕石跟敵方太空艦所獲得的分數
9. 計時器: 顯示太空艦的航行時間
10. 音效按鈕: 開啟或關閉遊戲音效
11. 字體大小的按鈕: 上下操作以調整字體大小
12. 暫停/繼續按鈕: 可暫停或繼續遊戲的按鈕
13. 控制太空艦的感應區域
14. Logo: 遊戲中加入所提供的 logo
15. 射擊: 由太空艦發出射擊

1. DESIGN AND INITIAL LAYOUT

1. 太空射擊遊戲版面設計與動畫設計：可從已完成的遊戲畫面中截取畫面。

1. Deliver at least 3 PNG image files that present:

遞交至少 3 張 PNG 遊戲畫面圖檔，需呈現以下要件:

- 1.1. Game Instructions: The first screen of the game presents the instructions to the user and the

“Start Game” button. The instructions for the game are included in the media files.

遊戲教學指引: 遊戲第一個畫面向玩家呈現教學指引以及“Start Game”按鈕，遊戲教學指引在多媒體檔案裡。

- 1.2. Game board layout: This design must present all 15 elements described above in the game screen.

遊戲板版面: 該設計必須在遊戲畫面中呈現上述全部 15 項元素。

- 1.3. Ranking Table presentation: This design must present the logo of game and ranking with the following columns: position, name, score and time in this order, with the table is presented the “Start Game” button.

排名表格的呈現: 該設計必須呈現遊戲 LOGO 以及排名，表格欄務必依照以下順序:名次、玩家名稱、分數、飛航時間，連同表格呈現“Start Game”按鈕。

2. Develop the initial markup (HTML + CSS) of your game application. When the address is accessed (http://xxxxxxxx/yy_client_side) the game is presented to the user with the game instructions and the button “Start Game”. The instructions must be presented in an animated way.

為遊戲應用程式開發初始標記(HTML+CSS)，訪問網址(http://xxxxxxxx/yy_Client_Side)時，連同遊戲須呈現出遊戲教學指引及“Start Game”按鈕，遊戲教學指引須以動畫呈現。

3. “Start Game” buttons must have active hover effects. The background of the buttons in hover state must be: #f19e0d. The active state must follow the example called ripple which is provided in the media files.

“Start Game” 按鈕必須有滑鼠滑入效果，滑入狀態時按鈕的背景色是#f19e0d，作用狀態必須像多媒檔案中示範的水波紋效果。

4. You should draw the elements described below to be included in your design. Create the elements that represent the same visual style.

畫出以下元素並融入你的設計當中，這些元素要能展現一致的視覺風格。

4.1.Main spaceship (will controlled by player) 主要太空艦(由玩家控制的太空艦)

4.2.Timer Icon 計時器圖示

4.3.Sound button 音效按鈕

4.4.Font size buttons 字體大小按鈕

4.5.Pause/continue button 暫停/繼續按鈕

4.6.Fuel counter 燃料計量器

4.7.Fuel icon 燃料錶圖示

5. The HTML and CSS code must be valid in the W3C standards for HTML 5 and CSS 3 rules.

HTML 及 CSS 程式碼須通過 W3C 標準 HTML5 及 CSS3 的驗證。

2. GAME FUNCTIONALITIES

2.太空射擊遊戲功能設計:

1. Pressing the “Start Game” button in the initial screen, the game starts. The spaceship starts to fly in an animated way and planets should move from right to left to give impression of movement of the spaceship in the space. The timer is started from zero and displays the time in seconds that the spaceship is in movement. The fuel counter starts to decrease, one point per second. When the game starts, there are 15 points of fuel (15 seconds). The max capacity of fuel is 30 points (30 seconds of flight). The score starts with zero points.

初始畫面上按“Start Game”按鈕以開始遊戲，太空艦即以動畫方式開始飛行，星球由右向左移動創造出太空艦在太空飛翔的動態，計時器從零開始計時太空艦飛行的時間(以秒計算)，燃料量表開始以每秒 1 點的消耗率下降，而遊戲開始時，燃料錶有 15 點，即有 15 秒的飛行時間，燃料最多有 30 點(30 秒的飛行時間)，而分數從零開始。

2. The spaceship shoots when the user presses space bar, the user cannot keep pressing the space bar to shoot many times sequentially, that is, and it must be possible shoot once for each space bar pressing.

玩家按空白鍵向鍵射擊，但不可以持續按著空白鍵來連續射擊，換句話說，按一次空白鍵就發射一次。

3. The shot of main spaceship can destroy just one target. The shot cannot pass through one target and hits other elements.

主要太空艦射擊一次只能摧毀一個目標，不能穿過一個目標擊中其他元素。

4. The user can move the spaceship in the screen using sensible areas that you include in the interface. As a videogame controller, these areas are activated in mouse hover and deactivate in mouse leave actions. The areas must be drawing in cross distribution. The up area moves the spaceship to up, the down area move the spaceship to down. The left area moves the spaceship to left and the right area move the spaceship to right. It is not possible fly the spaceship unless it is visible on the screen.

玩家可以使用遊戲介面上的感應區域控制太空艦的移動，該區域是電玩控制器，滑鼠滑入時啟動感應區域; 游標離開後即停止感應，該區域的圖形像十字，按向上鍵使太空艦向上; 向下鍵使太空艦向下; 向左鍵使太空艦向左; 向右鍵使太空艦向右，若在畫面看不到太空艦則不可能操控太空艦。

5. During flight, the spaceship needs to destroy the enemy's spaceships and asteroids that are presented in the space. If the spaceship collides an asteroid or an any spaceship the element is destroyed and the fuel must be decrease in 15 points.

飛行時，太空艦要摧毀出現的敵方太空艦及隕石，若主要太空艦跟隕石或任何太空艦相撞，太空艦/隕石會被擊毀但主要太空艦也會被扣掉 15 點燃料。

6. The spaceships and asteroids needs to be presented in random position and in an animated way, flying from right to left.

太空艦跟隕石必須是以動畫隨機出現，方向由右至左。

7. The enemy's ships must shoot (from right to left). The player must dodge these shoots; otherwise, if the player is hit by these shoots, the fuel counter will be decreased in 15 points.

敵方太空艦也會射擊(射擊方向由右向左)，玩家必須閃避敵方射擊，否則將損失 15 點燃料。

8. The ships are destroyed by one shoot. Each enemy ship destroyed increase the score counter in 5 points. If the user destroys a friendly ship the score counter is decreased in 10 points.

一次射擊可摧毀一艘太空艦，摧毀一艘敵方太空艦獲得 5 分，相反地，誤擊一艘友方太空艦則計分器減少 10 分。

9. The game permits a negative score.

遊戲允許玩家出現負分。

10. The asteroids can be destroyed with two shots. Destroying each asteroid, the score is increased in 10 points.

兩發射擊可摧毀一顆隕石，每摧毀一顆隕石獲得 10 分。

11. During the flight, the main spaceship needs to collect fuel icons dropping in an animated way (from the top of the screen) in the space randomly. For each fuel icon collected, the fuel counter is increased in 15 points (15 seconds of flight).

飛行時，主要太空艦需要收集從天而降的燃料圖示，燃料圖是以動畫隨機出現(自畫面上方降落)，每收集一個燃料，燃料錶增加 15 點(增加 15 秒的飛行時間)。

12. During the flight, the user can pause the game clicking the pause button, or by pressing the letter “p” in keyboard. When the game is paused, all interactions and sounds must be stopped. If the user clicks the pause button again, or presses the letter “p” again, the game continues from the moment that it was paused.

飛行時，玩家按下暫停鍵可暫停遊戲，也可按 p 鍵暫停，遊戲暫停時，所有互動及音效必須停止，若玩家再按一次暫停按鈕或 p 鍵，遊戲會從暫停時刻繼續。

13. The planets in background need to present an animation to give the sensation of movement. The planets must move with different speed, the biggest planets must be moved faster than the smallest planets, creating a parallax effect. Include at least 5 planets in the background.

背景中的星球要有動畫以呈現動態感，星球移動速度各不同，較大的星球移動速度比小的星球快，創造出視差效果(從不同位置觀察物體所產生的位置或方向上的差別)，背景中至少要有 5 顆星球。

14. Each 5 seconds of flight, the difficult of game must be increased. The spaceships, fuels icons and asteroids must be shown faster and the enemy's spaceships must shoot more times

飛行時間每過 5 秒，遊戲難度就會提升，太空艦、燃料圖示、隕石的速度會變快，敵方太空艦的射擊次數變得更多。

15. When the fuel counter arrives at zero, the game is over. 燃料錶降至 0 時，遊戲結束。

16. When the game is over, the animations, sounds, interactions and the timer counter stops, the game will collect the name of the user in a form field. The user fills the field and clicks the button “Continue”. The button will be disabled until the user fills that field.

遊戲結束時，動畫、音效、互動、計時器皆停止，遊戲將在一表單欄位中詢問玩家名稱，填好名稱後按下“Continue”按鈕，此按鈕要在玩家填好姓名欄位後才可以按。

17. The user name, the time of flight and the score need to be registered in the server through an AJAX request. Send this information to the server address and using these variables:

透過 AJAX 請求，將玩家名稱、航行時間、分數註冊至伺服器，將這些資訊傳送至伺服器位址並使用以下變數：

17.1. <http://xxxxxxxx/register.php>

17.2. Method: post 方法: POST

17.3. Name: name of the user 名稱: 玩家名稱

17.4. Time: number (integer) time in seconds 時間: 秒數(整數)

17.5. Score: number (integer) of points got during the flight 分數: 飛行時累積的分數(整數)

18. The register.php will register your information in the database of the server and will return a JSON information with a ranking of users. An example of the JSON structure is presented below:

register.php 將會把你的資訊註冊至伺服器端的資料庫，並返回以 JSON 資訊顯示玩家排名，以下為 JSON 結構範例:

```
[  
  {"id":"1","name":"Player 1", "time":"20", "score":"10"},  
  {"id":"2","name":"Player 2", "time":"14", "score":"8"}  
]
```

19. The game presents the user ranking to the user with the button "Start Game" that permits restarting the game. Clicking in the "Start Game" button the game instructions are presented to the user again.

遊戲將呈現玩家排名跟"Start Game"按鈕給玩家，按下按鈕可重新開始遊戲，並再一次秀出遊戲教學指引。

20. The ranking needs to be ordered by the score and for time elapsed in decreasing order. If more than one user has the same score and the same time, they receive the same position in the ranking. The JSON data returned by the server is not ordered, it is your task order correctly the data to present to the user in the client side.

排名根據玩家分數及飛行時間遞減排列，若不只一位玩家擁有相同分數跟時間，其排名相同，伺服器返回的 JSON 資料沒有順序，你必須將資料整理好並呈獻給客戶端的玩家。

21. To increase the game interaction, some sound effects need to be used:

21.1 background.mp3: used during the flight in loop;

21.2 destroyed.mp3: played when one spaceship or asteroid is destroyed;

21.3 shoot.mp3: played when the main spaceship shoots.

為了提升遊戲互動，須使用以下音檔:

21.1 background.mp3: 用於飛行時循環撥放

21.2 destroyed.mp3: 當太空艦或隕石被摧毀時撥放

21.3 shoot.mp3: 主要太空艦射擊時撥放

22. Use your talent to increase the usability of the game as much as possible to permit a better experience for the user.

運用你的才能盡可能提升遊戲使用性，以達到更棒的玩家體驗。

23. To improve the accessibility your game must have options to increase/decrease the size of font in the screen (timer and score counter).

為了增進遊戲的無障礙，必須提供選向項來調整畫面的字體大小(計時器跟計分器)。

24. There must be an option to disable/enable game sounds. If the sound is disabled, none of sounds must be played. If sound is enabled all sounds must be played.

必須要有控制選項可以開啟/關閉遊戲音效，若關閉音效，就不能撥放出任何音效，反之，若開啟音效，音效要能撥放出來。

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

遊戲執行中不能出現 JavaScript 錯誤或出現於瀏覽器主機的訊息。

26. Maintain your HTML/CSS and JavaScript code organized and clean to facility the future maintenance, use correct indentation and comments. Use meaningful variable names and document your code as much as possible so another would be able to modify your work in the future

你的 **HTML/CSS** 及 **JavaScript** 程式碼要保持簡潔整齊以便未來的維護工作，使用正確的內縮跟註記，使用有意義的變數名稱，並盡可能文件化(document)你所撰寫的程式以便未來修改。

27. The game needs to work correctly in browsers Google Chrome. The game requirements will be checked in Google Chrome.

遊戲要能在 **Google Chrome** 瀏覽器上正常運作，遊戲要求將在 **Google Chrome** 進行檢查。

INSTRUCTIONS TO THE COMPETITOR 選手須知

- The media files are available in the ZIP file. You can modify the supplied files and create new media files to ensure the correct functionality and improve the application. You can use jQuery and jQuery UI if you find it necessary.

多媒體檔案在壓縮檔內，你可以修改所提供的檔案，也可以創建新的多媒體檔案，才能確保功能性正確，並改善程式，若有必要你可以使用 **jQuery** 和 **jQuery UI**。

- Save your design files in a folder call "YY_Client_Side/YY_design" where YY is the number of your workstation.

將你的遊戲畫面儲存至名為"**YY_Client_Side/YY_design**"的資料夾，YY 處為你的工作崗位號碼，例如 01，02，03...

- Files names:
 - Instructions: YY_instructions.png
 - Game board: YY_game_board.png
 - Ranking: YY_ranking.png

- 檔案名稱:

- 遊戲教學指引: YY_instructions.png
- 遊戲板(Game board): YY_game_board.png
- 排名(Ranking): YY_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.

每種螢幕解析度須額外建立圖像，凸顯各種隱藏元素、動畫、互動效果或其他展示遊戲美術設計的相關資訊。

- Additional file names

- Instructions: YY_instructions_2.png, YY_instructions_3.png
- Game board: YY_game_board_2.png, YY_game_board_3.png ...
- Ranking: YY_ranking.png, YY_ranking_2.png, YY_ranking_3.png ...

- 額外檔案名稱

- 遊戲教學指引: YY_instructions_2.png, YY_instructions_3.png
- 遊戲板(Game board): YY_game_board_2.png, YY_game_board_3.png ...
- 排名(Ranking): YY_ranking.png, YY_ranking_2.png, YY_ranking_3.png ...

- Save any image source files to a folder named "**YY_source**" inside the "**YY_Client_Side/YY_design**" folder. The source files are the files that contain the layers,

development files, ie .psd, .ai, .svg, etc.

儲存所有圖像原始檔至"**YY_Client_Side/YY_design**"中的"**YY_source**"資料夾，這些原始檔包含圖層、開發檔，如.psd、.ai、.svg.檔等。

，YY 處為你的工作崗位號碼，例如 01，02，03...

- Save the working game to the directory on the server named "**YY_Client_Side**". Be sure that your main file is called index.html.

將工作遊戲存至"**YY_Client_Side**"你的伺服器上的目錄，請確認主要檔案名稱為 **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.

使用有助於辨識的變項名稱，並盡可能寫好程式碼以利他人日後能夠修改你的作品。

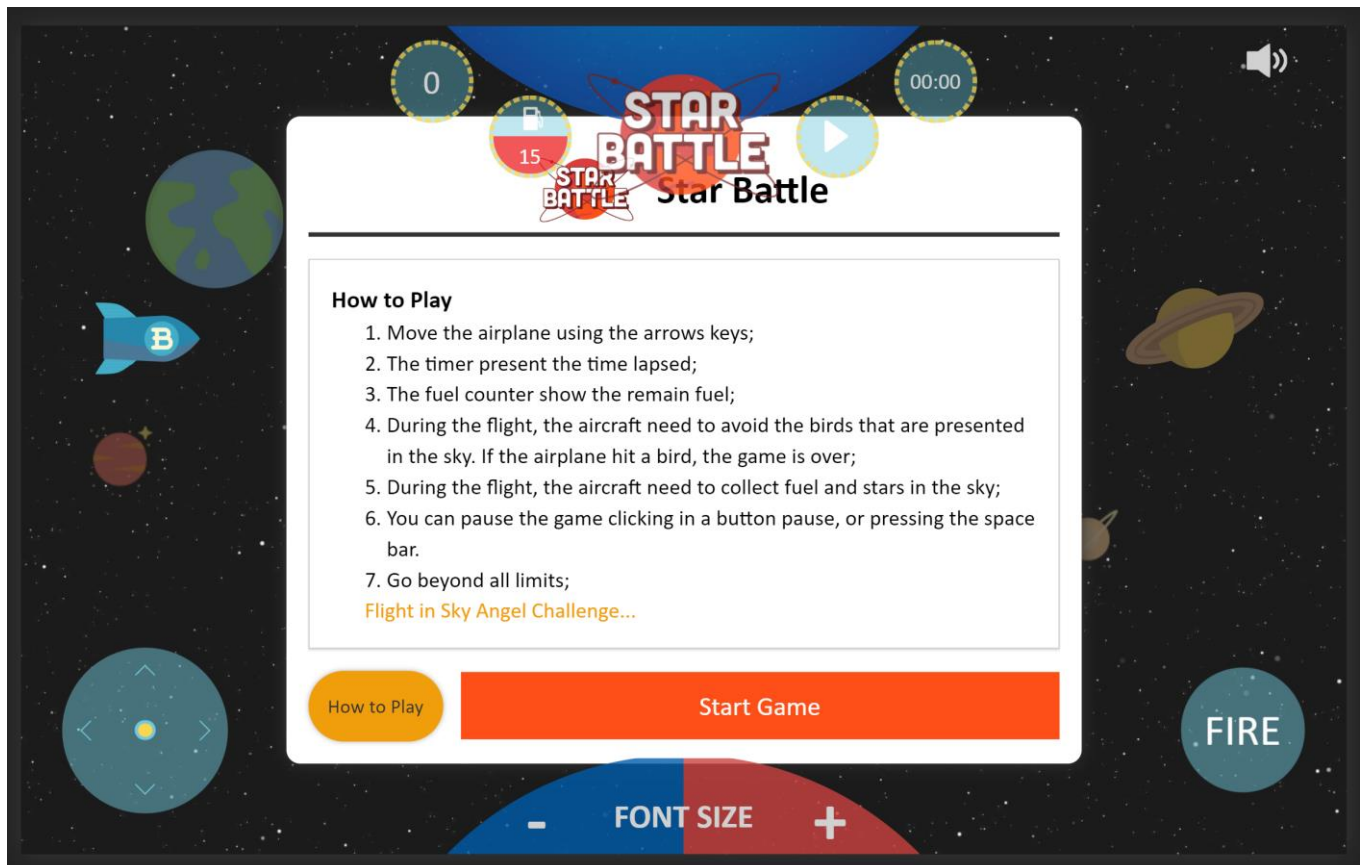
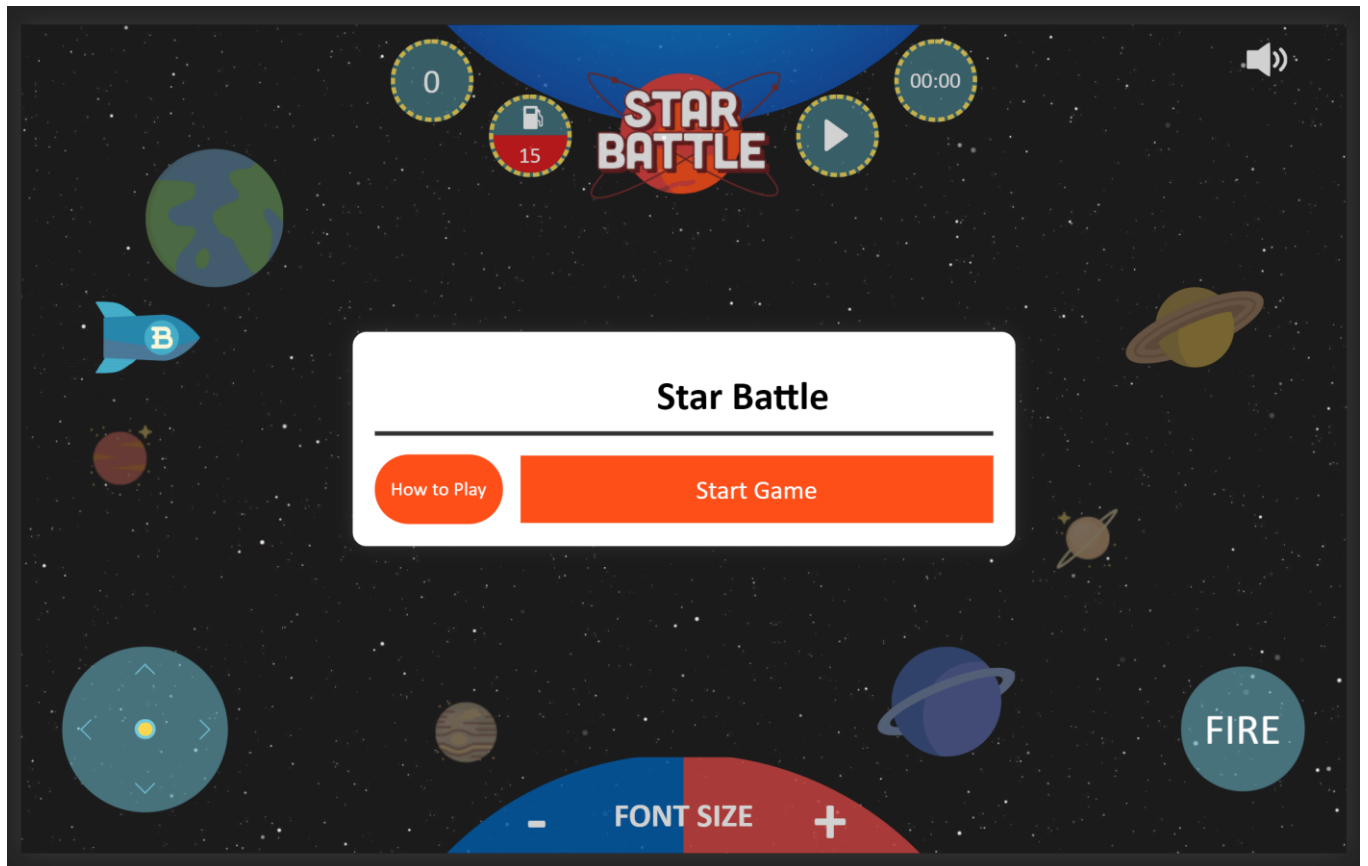
- Be sure that the address is correct and the variables and formats are correct to permit a correct registration in the database. In case of error the JSON error messages returned to request.

```
[  
  {"error":"Error Message"}  
]
```

請確認網址、變數、格式皆正確無誤以確保正確的資料庫註冊，萬一產生錯誤，將返回 JSON 錯誤訊息以發出請求。

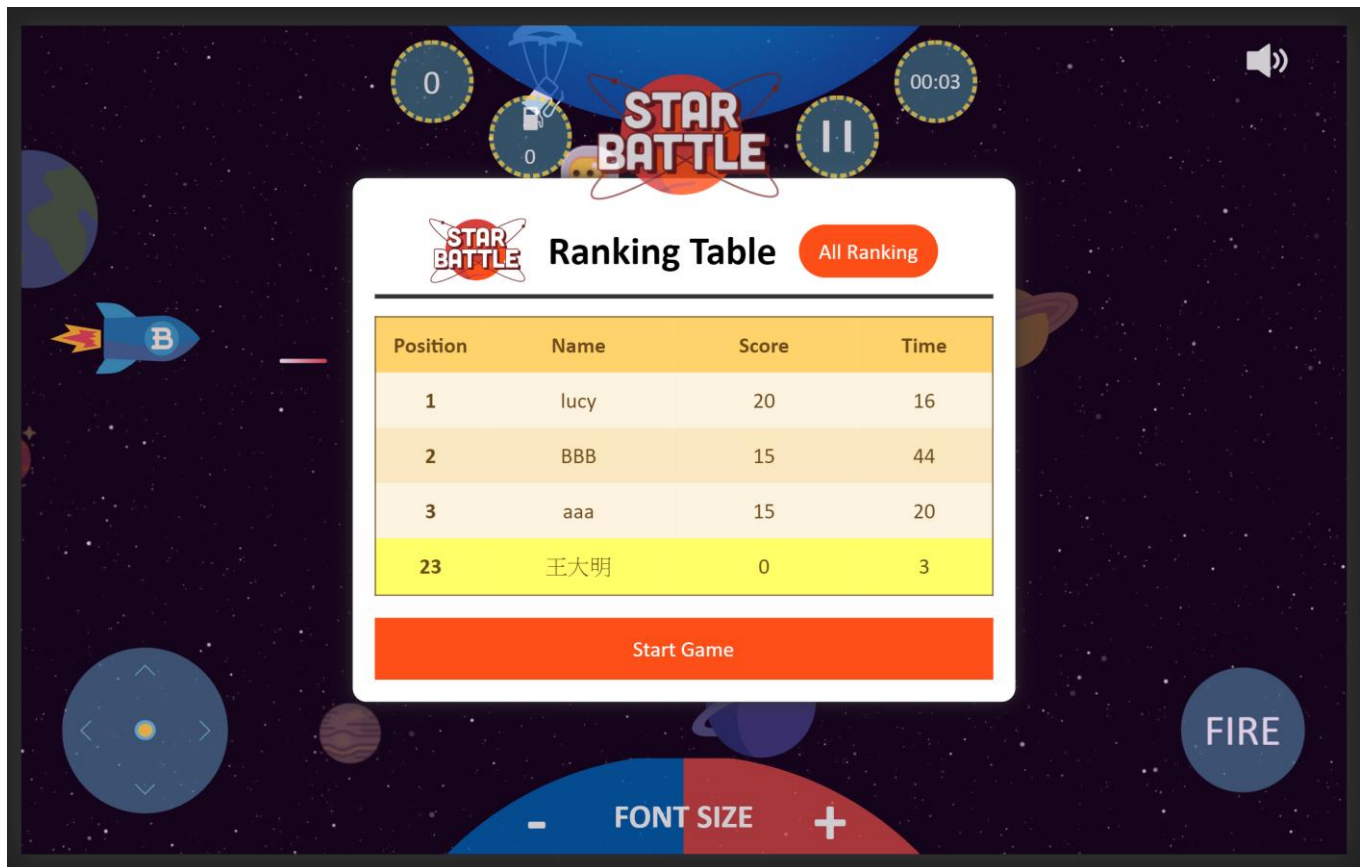
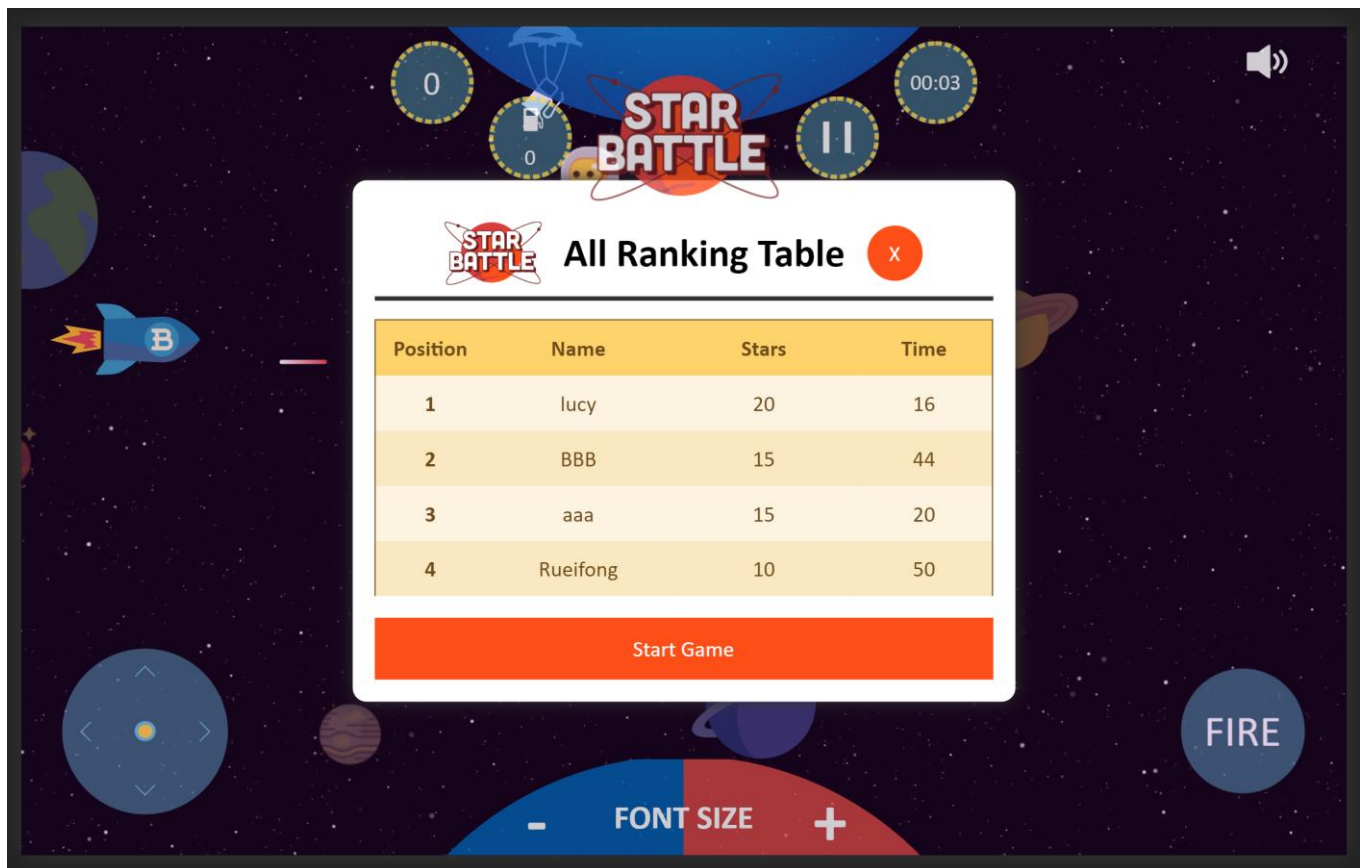
```
[  
  {"error":"Error Message"}  
]
```

遊戲參考畫面下一頁









評分表

編號	主客	S0	完成	評分項		配分
1.	O			Was delivered the game instructions, game board and the ranking table layout in the scheduled time 在預計時間內遞交要求版面，包含遊戲教學指引版面、遊戲板版面、玩家排名版面	Deduct 0,20 per file missing 缺少任一檔案扣 0.02	0.60
2.	O			The files were delivered in the correct folder "YY_Client_Side" 檔案遞交至正確的資料夾 "YY_Client_Side"		0.10
3.	O			The design files were saved in the "YY_Client_Side/YY_design" folder 樣式美術檔案存至 "YY_Client_Side/YY_design" 資料夾		0.10
4.	O			The files names follow the test project orientation 檔案名稱依照題目指示	deduct 0,10 per error found 每發現一個錯誤扣 0.10	0.20
5.	O			The source files are saved into a folder named "YY_source" inside the "YY_Client_Side/YY_design" folder 原始檔案存在 "YY_Client_Side/YY_design" 資料夾內的 "YY_source" 資料夾中的		0.10
6.	O			Game board design present the 15 requirements elements described in the test project 遊戲板設計呈現出題目中所要求的 15 項元素	deduct 0,10 per item missing 缺少任一項扣 0.10	1.50
7.	O			Game Instructions present the instructions of the media files and "Start Game" button 遊戲教學指引依照題目指示呈現出該有的媒材檔案以及 "Start Game" 按鈕	In the Game Instructions Design 遊戲教學指引的美術設計	0.10
8.	O			There are at least 5 planets in the background of Game Board Design 遊戲板的背景中至少有 5 顆行星		0.15
9.	O			Hover Effects on the "Start Game" button use #f19e0d background "Start Game" 按鈕的滑入效果使用顏色 #f19e0d 為背景	background: #f19e0d In the rule :hover 背景: #f19e0d ; 作用規則: 滑鼠滑入	0.30
10.	O			Active Effects on the "Start Game" button present the ripple effect presented in the media files "Start Game" 按鈕作用狀態時，呈現多媒體檔案示範的水波紋效果	in rule :active 作用規則: 滑鼠點擊	0.40
11.	O			Game is centered on the screen 遊戲畫面位於螢幕中央		0.30
12.	S			Quality of the created spaceship (controlled by user) 創建的太空艦所展現的品質(由玩家操控的那艘)	0. Spaceship isn't present or not related with the game theme 為創建出太空艦，或者與遊戲主題不符 1. Created spaceship is very simple with just one graphical element 太空艦設計很簡單，僅一項圖	0.50

				<p>形元素</p> <p>2. Created spaceship is good with more than one graphical element 太空艦設計良好，具備超過一項圖形元素</p> <p>3. Created spaceship is related with the game theme and improves the game design 太空艦與遊戲主題相關，提升遊戲的美術設計</p>	
13.	S	<p>Visual identity is consistent in all the design game 整體遊戲設計的視覺識別形象一致</p>		<p>0. Inconsistent visual identity and / or do not incorporate graphic elements provided / created 視覺識別不一致或是未將提供的/創建的圖形元素融入設計</p> <p>1. Minimum visual identity maintained in design, with only a few connecting elements 美術設計展現最低程度的視覺識別形象，只有少數幾個元素與視覺識別有關聯</p> <p>2. Good visual identity of elements, but only one element must be updated to connect everything 良好的視覺識別元素，其中僅須更新一項元素才能與其他所有元素串聯起來</p> <p>3. Consistent visual identity which all elements are organized and connected with themselves 連貫的視覺識別形象，所有元素井然有序並搭配協調</p>	0.50
14.	S	<p>Quality of the created icons and buttons in the game board design 遊戲板上的圖示及按鈕所呈現的質感</p>	0	<p>0. The icons/buttons are completely different without any relationship elements 圖示/按鈕相差甚大，無任何關聯元素</p> <p>1. More than one icon/button present problems with the relationship elements 不只一個圖示/按鈕的元素關聯性有問題</p> <p>2. Just one icon/button present problems to define the icon as part of family 僅一個圖示/按鈕有問題，難以定義為家族的一部分</p> <p>3. The icons/buttons represent a family with excellent relationship elements 圖示/按鈕具備的元素關聯性極佳，呈現出整體感</p>	0.50

15.	O	Game instructions is shown with animation 動畫呈現出遊戲教學指引			0.30
16.	S	Quality of instructions animation 遊戲教學指引的動畫具質感	0	0. There is no animation 無動畫 1. There is animation simple with one effect 單一效果的簡單動畫 2. There is a good animation with two effects 雙重效果的良好動畫 3. The animation is perfect, improving the application usability with more than two effects 動畫完美，運用超過兩種效果，提升應用程式易用性	1.00
17.	S	Contrast among background and objects 背景與物件具色彩對比	0	0. Poor choice of colors without or problems in a visual contrast 選色不佳，沒有視覺對比或是對比有問題 1. Basic pallet of colors and poor contrast 使用基本色票，對比不佳 2. Good choice of color with a good contrast between the elements 選色優，元素間呈現良好對比 3. Excelent use of colors and contrast, choice of the elements colors help actions to the users 用色對比極佳，元素選擇幫助使用者做出行動	0.50
18.	O	There should not be CSS syntax error in W3C validator report W3C 驗證回報中不應出現 CSS 語法錯誤		Deduct 0.25 per syntax error found 每個語法錯誤扣 0.25	1.00
19.	S	Create easy-to-maintain CSS codes 建立出易於維護的 CSS 碼	0	0. CSS unorganized without indentation CSS 碼無內縮，顯得雜亂 1. CSS Code have a good indentation and a few comments CSS 碼善用內縮，有一些註解 2. CSS Code have a good indentation and a few comments(重複上一格?) 3. CSS code is very well organized with perfect indentations and comments to facility the maintenance and a group technique was used for related code CSS 碼結構整齊，完美運用內縮跟註解有助於日後維護，相關聯程式碼使用了成組技巧 (group technique)	0.60

20.	O	HTML code validated for HTML5 in W3C validator HTML 碼在 W3C 驗證器中通過 HTML5 驗證		Deduct 0,25 per type of error found 每發現一項錯誤扣 0.25	1.00
21.	S	Create easy-to-maintain HTML codes 建立出易於維護的 HTML 碼	0	0. HTML Code is completely unorganized without indentation and comments HTML 碼完全沒有組織，沒有內縮及註解 1. HTML Code have a good indentation and a few comments CSS 碼善用內縮，有一些註解 2. HTML Code have a good indentation and many comments CSS 碼善用內縮，有很多的註解 3. HTML code is very well organized with perfect indentations and comments to facility the maintenance identifies the elements of the game in the code CSS 碼結構整齊，完美運用內縮跟註解有助於日後維護，辨識出程式碼的遊戲元素	0.60
22.	O	Game instructions present the elements created in the design 遊戲教學指引呈現出樣式設計中所創建的元素		deduct 0,10 per missing element - Compare with the design delivered 缺少任一項元素扣 0.10 - 與選手遞交的樣式設計相比較	0.50
23.	O	Game instructions elements follow the design created 遊戲教學指引依照所創造的樣式設計		deduct 0,10 per for wrong format or wrong position - Compare with the design delivered 任一錯誤格式或位置扣 0.10 - 與選手遞交的樣式設計相比較	0.50
24.	S	Consistent use of Typography - (Contrast, readability, and family choice) 字型排版的使用一致 - (對比、易讀性、家族選擇)	0	0. The fonts presented are inconsistent or Fonts are simple and there is no hierarchy in the content 字型不一致或字型太普通，內容沒有組織架構 1. Good font choice but without hierarchy of the information 良好的字型選擇，但是內容沒有組織架構 2. Present a good hierarchy of the information but the font choice is simple 良好的內容組織架構，但所選的字型太普通 3. Excellent choice of font and different sizes present a hierarchy of the content	0.30
25.	S	Correct align of the fixed elements (icons, buttons and counters) 位置固定的元素對齊準確	0	0. There are big problems of the align of the elements presented in the interface	0.30

				<p>介面上的元素有重大的對齊問題</p> <p>1. Only part of the elements presents a good align, and much present problems 僅部分元素有對齊，很多元素則沒對齊</p> <p>2. The most part of elements is correct align but only one problem can be found 大部分元素準確對齊，僅發現一處問題</p> <p>3. All the elements present a perfect align 所有元素完美對齊</p>	
26.	O	Ranking page design present the requirements described in the test project 排名頁面設計呈現出題目中所要求的元素		deduct 0,10 per item missing (table with the following columns: position (0.10), name (0.10), score (0.10) and time (0.10) in this order (0,10), "Start Game" button (0,10) and logo(0.10)) 缺少任一項扣 0.10(表格欄: 依序(0.10)為名次(0.10)、玩家名稱(0.10)、分數(0.10)、時間(0.10)、"Start Game" 按鈕(0.10)、LOGO(0.10))	0.70
27.	O	Design was developed to the correct resolutions 美術設計按照正確的螢幕解析度開發		Three designs 960x600px (deduct 0,25 per wrong resolution) 三種版面呈現在 960x600px 地解析度上(每種解析度發生錯誤扣 0.25)	0.75
編號	主客觀	完成	評分項		配分
28.	O	The fuel icon moves from top to down 燃料圖示從天而降			0.20
29.	O	During the flight, the main spaceship needs to collect fuel icons dropping (from the top of the screen) in the space randomly 航行時，主要太空艦要收集太空中隨機落下來的燃料圖示(自畫面上方落下)			0.20
30.	O	For each fuel icon collected, the fuel counter is increased in 15 points 吃到一個燃料圖示，燃料錶增加 15 點			0.20
31.	O	The user can increase/decrease the size of font in screen 玩家可在畫面中調整字體大小		Timer and score counter 計時器及計分器的字樣	0.20
32.	S	Fuels animation 燃料增加的動畫	0	<p>0. There is no animation 無動畫</p> <p>1. There is animation very simple animation with just two frames 只有很簡單的二幀動畫</p> <p>2. There is a good animation but not perfect to improve the application usability 很好的動或但是無法提升應用程式的使用性</p> <p>3. The animation is perfect</p>	0.50

				animation, improving the application usability with fluid animation 完美、流暢的動畫，能提升應用程式使用性	
33.	O	Game can be accessed directly using the address: http://xxxxxxxxx/YY_Client_Side 可直接訪問 http://xxxxxxxxx/YY_Client_Side 進入遊戲		Where xxxxxxxxx = Server Address and yy = workstation number xxxxxxxxx = 伺服器位址; yy = 崗位編號	0.10
34.				the game is presented to the user with the “How to Play” instructions animated and Start Button 遊戲中以動畫顯示遊戲教學指引 “How to Play” (題目是寫 Game Instructions!?)，連同開始遊戲的按鈕秀出	
35.	O	Pressing the “Start Game” button, the game starts and the Spaceship (controlled by user) starts to fly in the space 按下 “Start Game” 按鈕後，遊戲開始且由玩家控制的太空艦開始航行於太空中		Game Instruction Hide and Game Board presented 隱藏遊戲教學指引，秀出遊戲板	0.20
36.	O	The timer is started from zero and present the time in seconds that the Spaceship (controlled by user) is in movement 計時器從零開始計時，時間以秒數計算太空艦(由玩家操控的那艘)的航行時間			0.20
37.	O	The fuel counter, start to decrease, one point per second. The fuel counter starts with 15 points 燃料計量錶於遊戲開始時從 15 點開始減少，每秒減一點		The graphical element must be animated when the fuel is decreasing and when the user gets more fuel. 圖形元素必須搭配動畫顯示燃料在減少，以及玩家獲得更多燃料	0.30
38.	O	The max capacity of fuel is 30 points 燃料量最多 30 點			0.20
39.	O	The left sensible area moves the Spaceship (controlled by user) to left 左方感應區域使由玩家控制的太空艦向左		Activate in mouse hover and deactivate in mouse leave 滑入時作用，滑鼠離開時停用	0.20
40.	O	The up sensible area moves the Spaceship (controlled by user) to up 上方感應區域使由玩家控制的太空艦向上		Activate in mouse hover and deactivate in mouse leave 滑入時作用，滑鼠離開時停用	0.20
41.	O	The down sensible area moves the Spaceship (controlled by user) to down 下方感應區域使由玩家控制的太空艦向下		Activate in mouse hover and deactivate in mouse leave 滑入時作用，滑鼠離開時停用	0.20
42.	O	The right sensible area moves the Spaceship (controlled by user) to right 右方感應區域使由玩家控制的太空艦向右		Activate in mouse hover and deactivate in mouse leave 滑入時作用，滑鼠離開時停用	0.20
43.	O	It is not possible fly with the Spaceship (controlled by user) to the outside of game area 若在畫面看不到太空艦則不可能操控它			0.20

44.	O	The score starts with zero points 分數從零開始計算			0.20
45.	O	The user can shoot pressing space bar 按空白鍵射擊		the user cannot keep pressing the space bar to shoot many times sequentially, that is, and it must be possible shoot once for each space bar pressing 不可以持續按著空白鍵來連續射擊，換句話說，按一次空白鍵就發射一次	0.40
46.	O	The shot of main spaceship can destroy just one target. 主要太空艦射擊一次只可摧毀一個目標		The shot cannot pass through one target and hits other elements. 主要太空艦的射擊不能穿過一個目標擊中其他元素	0.40
47.	O	If the user's spaceship collides an asteroid or an any spaceship the element is destroyed 若主要太空艦跟隕石或任何太空艦相撞，太空艦/隕石會被擊毀			0.30
48.	O	If the spaceship collides an asteroid or an any spaceship the fuel must be decrease in 15 points 若主要太空艦跟隕石或任何太空艦相撞，太空艦/隕石會被擊毀但主要太空艦也會被扣掉 15 點燃料			0.20
49.	O	The spaceships and asteroids needs to be presented in random position 太空艦跟隕石必須是以動畫隨機出現			0.20
50.	O	The spaceships and asteroids move from right to left 太空艦跟隕石移動方向由右至左			0.20
51.	O	The enemy's ships must shoot (from right to left) 敵方太空艦也會射擊(射擊方向由右向左)			0.30
52.	O	If the player is hit by the enemy shoots, the fuel counter will be decreased in 15 points 若玩家沒躲過敵方射擊，燃料量表 15 點燃料			0.30
53.	O	The ships are destroyed by one shoot 一次射擊可摧毀一艘太空艦			0.20
54.	O	Each enemy ship destroyed increase the score counter in 5 points 摧毀一艘敵方太空艦獲得 5 分			0.20
55.	O	If the user destroys a friendly ship the score counter is decreased in 10 points 相反地，誤擊一艘友方太空艦則計分器減少 10 分			0.30
56.	O	The game permits a negative score 遊戲允許玩家出現負分			0.20
57.	O	The asteroids can be destroyed with two shots 一顆隕石需要兩發射擊才能被摧毀			0.30
58.	O	Destroying each asteroid, the score is increased in 10 points 每摧毀一顆隕石獲得 10 分			0.20

59.	O	Each 5 seconds of flight, the difficult of game must be increased. 飛行時間每過 5 秒，遊戲難度就會提升	The spaceships, fuels icons and asteroids must be shown faster and the enemy's spaceships must shoot more times 太空艦、燃料圖示、隕石的速度會變快，敵方太空艦的射擊次數變得更多	0.50
60.	O	The spaceships are presented in an animated way 太空艦以動畫呈現	Include the main spaceship controlled by the user 包含玩家操控的主要太空艦	0.20
61.	O	The asteroids are presented in an animated way 隕石以動畫呈現		0.20
62.	O	Fuel icons are presented in an animated way 燃料圖示以動畫呈現		0.20
63.	O	Game Board present the elements created in the design 遊戲板呈現出美術設計中所創建的元素	deduct 0,10 per missing element - Compare with the design delivered 缺少任一項扣 0.10 - 與選手遞交的樣式設計相比較	0.50
64.	O	Game Board elements follow the design created 遊戲板依照美術設計中所創建的元素	deduct 0,10 per for wrong format or wrong position for fixed elements (like icons and counters) - Compare with the design delivered 任一格式錯誤或位置固定的圖示及計分(量)器位置錯誤扣 0.10 - 與選手遞交的樣式設計相比較	0.50
65.	O	Ranking Table present the elements created in the design 排名表格呈現出美術設計中所創建的元素	deduct 0,10 per missing element - Compare with the design delivered 缺少任一項元素扣 0.10 - 與選手遞交的樣式設計相比較	0.40
66.	O	Ranking Table elements follow the design created 排名表格依照美術設計中所創建的元素	deduct 0,10 per for wrong format or wrong position for fixed elements (like icons and counters) - Compare with the design delivered 任一格式錯誤或位置固定的圖示及計分(量)器位置錯誤扣 0.10 - 與選手遞交的樣式設計相比較	0.40
67.	O	When the fuel counter arrives at zero, the game is over 燃料錶降至 0 時，遊戲結束	When the game is over, the animations, sounds, interactions and the timer counter stops 遊戲結束時，動畫、音效、互動、計時器皆停止	0.30
68.	O	When the game is over the game collect the name of the user in a form field 遊戲結束時，遊戲將在一表單欄位中詢問玩家名稱	Name field is presented to the user with a "Continue" button 連同 "Continue" 按鈕秀出名稱欄位	0.20
69.	O	The Continue button will be disabled until the user fills the name field "Continue"按鈕在玩家填好姓名欄位前都不能按		0.30

70.	O	The user name, the time of flight and the score must to be sent to server through an AJAX request when the user clicks in Continue button 玩家按下“Continue”按鈕時，透過AJAX請求，將玩家名稱、航行時間、分數傳送至伺服器	To address http://xxxxxxxx/register.php 送至 http://xxxxxxxx/register.php Method: post variables name, time and score (with this names) 欄位名稱依照原文 variables name、time、score	0.30
71.	O	After click in "Continue" button, the game present the game ranking with the following columns: position, name, score and time in this order with the button "Start Game" 按下“Continue”按鈕，遊戲秀出遊戲排名，欄位順序依照以下：名次、玩家名稱、分數、航行時間，“Start Game”按鈕也一起呈現在畫面上	data provided by the json by register.php 藉 register.php ，JSON 提供資料	0.20
72.	O	The ranking is ordered by the score and for time elapsed in decrease order (ordered in front-end). 排名根據玩家分數及飛行時間遞減排列(在前端排序)		0.50
73.	O	If more than one user has the same score and the same time, they receive the same position in the ranking 若不只一位玩家擁有相同分數跟時間，其排名相同	JSON from server get by provided file register.php. 藉 register.php 從伺服器取得 JSON	0.40
74.	O	It is possible restart the game clicking in the "Start Game" button in the Ranking Table screen 可以在排名表格畫面上按 "Start Game" 按鈕重新開始遊戲	the game instructions are presented to the user again 遊戲教學指引再次秀出	0.20
75.	O	During the flight, the user can pause the game clicking the pause button 飛行時，玩家按下暫停鍵可暫停遊戲	When the game is paused, all interactions and sounds must be stopped 遊戲暫停時，所有互動及音效必須停止	0.20
76.	O	During the flight, the user can pause the game pressing the letter p in the keyboard 飛行時，玩家可按 p 鍵暫停	When the game is paused, all interactions and sounds must be stopped 遊戲暫停時，所有互動及音效必須停止	0.20
77.	O	In a pause state If the user clicks the pause button again, the game continues from the moment that it was paused. 遊戲暫停時，若玩家再按一次暫停按鈕，遊戲會從暫停時刻繼續		0.20
78.	O	In a pause state If the user presses the letter "p" again, the game continues from the moment that it was paused. 遊戲暫停時，若玩家再按一次 p 鍵，遊戲會從暫停時刻繼續		0.20
79.	O	The game should work without JavaScript errors and messages shown in the browser console 遊戲執行中不能出現 JavaScript 錯誤也不能有訊息出現於瀏覽器主機		0.40

80.	S	Spaceship (controlled by user) animation 太空艦動畫(由玩家操控的那艘)	0	<p>0. There is no animation 無動畫</p> <p>1. There is animation very simple animation with just two frames 只有很簡單的二幀動畫</p> <p>2. There is a good animation but not perfect to improve the application usability 動畫良好，但不足以提升應用程式的使用性</p> <p>3. The animation is perfect animation, improving the application usability with fluid animation 動畫完美，流暢的動作提升應用程式使用性</p>	0.50
81.	O	The planets in background must move with different speed, the biggest planets must be moved faster than the smallest planets, creating a parallax effect. 背景中的星球移動速度各不同，最大的星球移動速度比最小的星球快，創造出視差效果(從不同位置觀察物體所產生的位置或方向上的差別)			0.50
82.	O	Sound Effects: background.mp3: used during the flight in loop background.mp3: 用於飛行時循環撥放			0.20
83.	O	Sound Effects: destroyed.mp3: played when one spaceship or asteroid is destroyed destroyed.mp3: 當太空艦或隕石被摧毀時撥放			0.20
84.	O	Sound Effects: shoot.mp3: played when main spaceship shoots shoot.mp3: 主要太空艦射擊時撥放			0.20
85.	O	The user can enable/disable the sounds of game 要有控制選項可以開啟/關閉遊戲音效		All sounds must be enabled or disabled 所有音效都能夠啟動/關閉	0.20
86.	S	The JavaScript code is well organized JavaScript 程式碼組織良好	0	<p>0. Javascript code is unorganized, without indentation and no comments Javascript 程式碼組織不佳，無內縮跟註解</p> <p>1. Javascript code have a good indentation, with meaningful variable names but not comments Javascript 程式碼善用內縮，具有意義的變數名稱但無註解</p> <p>2. Javascript code have a good indentation, with meaningful variable names and a few comments but no describe the functions and methods functionalities Javascript 程式碼善用內縮，具有意義的變數名稱與一些註解，卻沒有描述出函數跟方法的功能性</p> <p>3. Javascript code is very</p>	0.60

					<p>organized, with meaningful variable names, including perfect indentation and comments of the functions and methods</p> <p>Javascript 程式碼組織非常好，具有意義的變數名稱，函數及方法還有完美的內縮與註解</p>	
87.	S		Planets Animation 星球的動畫	0	<p>0. There is no animation 無動畫</p> <p>1. There is a simple animation with all planets moving with the same speed 動畫簡單，所有星球移動速度同</p> <p>2. There is a good animation with different speeds for smallest and biggest planets 動畫良好，最大跟最小的星球的移動速度不同</p> <p>3. The animation is perfect, improving the application usability with different speed for each planet presented in background 動畫完美，提升應用程式使用性，背景中各個星球的速度都不同</p>	0.50
					小計	30