**台北科技大學資訊工程系**

**102學年度實務專題計畫成果報告**

**EzWebGame**

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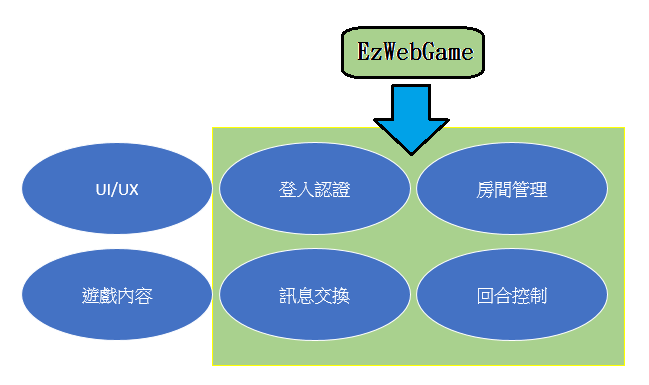
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1. **研究動機與目的**

隨著Web Game的流行以及HTML5 2D Canvas技術的崛起，開發者對於快速開發網頁遊戲的需求趨於明顯。我們想要建構一個平台，讓開發者能夠很輕易並快速的開發網頁遊戲。於是EzWebGame因此誕生了。

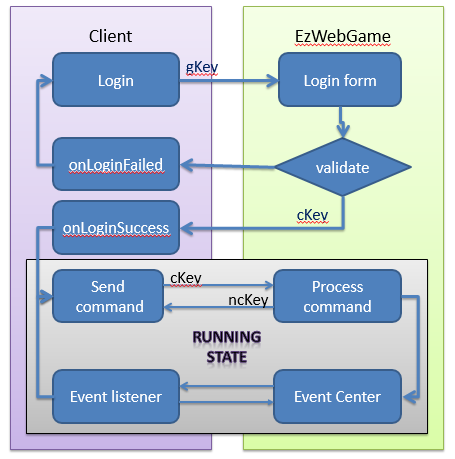
一般的多人回合制遊戲開發通常包含了六個部份，UI/UX設計、遊戲內容設計、登入認證、遊戲房間管理、訊息交換、回合控制。我們想建構一個對開發者友善的框架，將繁複的Message溝通、回合控制、遊戲房間控制以及認證授權全部包裝起來。並釋出前端EzWebGame Library讓開發者能以用Event Trigger的模式來開發遊戲。



1. **專題架構**

EzWebGame架構大致上可以分成登入認證階段以及執行階段。登入認證階段開頭由Client呼叫login library傳遞gKey並另開新視窗到EzWebGame登入頁面。EzWebGame會根據gKey辨識要登入哪一個遊戲，而gKey由開發者向EzWebGame註冊取得。表單驗證失敗之後會觸發onLoginFailed事件，驗證成功則觸發onLoginSucess事件並回傳communication Key。取得communication Key後進入實作遊戲內容的執行階段。

EzWebGame把遊戲切成遊戲房間管理、回合控制、信息交換等三個部分。開發者可以用EzWebGame Library的method以及event來建構、串接這三部分。傳遞指令會用communication Key來做驗證，communication Key效用只有一次性並且在Server處理完要求後會發送新的communication Key。以此方式來確認指令的來源合法性。



(圖一) EzWebGame主要架構

1. **相關背景與技術**

* Comet programming and Server Sent Event

Comet是一個Web應用程序模型，其中一個長期持有的HTTP請求允許Web服務器將數據推送到瀏覽器，並且不需要瀏覽器特別發出請求。Comet是一個總稱，涵蓋多種技術可以實現這互動。在眾多方法裡面，我們選擇了HTML 5 Server Sent Event (SSE)來進行實作。

Server Sent Event 是一個描述一旦瀏覽器建立對伺服器得連線，伺服器如何初始化資料傳輸的標準。SSE通常用來訊息更新或者發送連續的資料串流到瀏覽器，SSE同時也是設計以用來提高本地、跨瀏覽器的串連。主要的使用方法是Client藉由名為EventSource的JavaScript API對一個特定的URL發出請求來收到事件串流，EzWebGame以此技術來實作多人即時信息交換的功能。

* KineticJS

KineticJS是一個HTML5 Canvas的JavaScript框架，它針對桌面以及行動等應用程式提供高效能的動畫、變形、節點網路、圖層、過濾器、快取、事件處理等功能。

Kinetic 的主要根元件為Stage，Stage由使用者定義的layers(圖層)所組成。每一個Layer都有兩個Canvas的Renderer，Scene Renderer與Hit Graph Renderer。其中Scene Renderer是負責顯示螢幕所能看到的，而另外一個Hit Graph Renderer是一個隱藏的Canvas，用來以高效能的方式來處理事件的偵測。

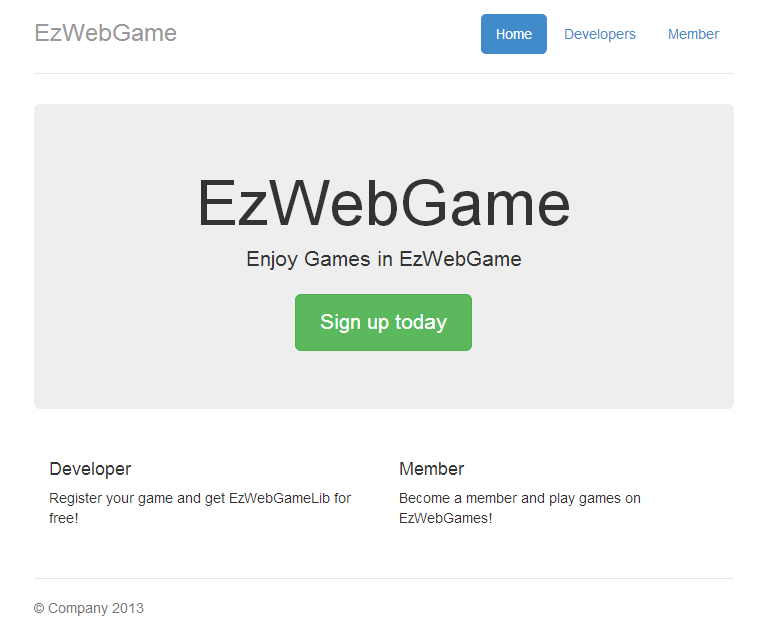
Kinetic的特色

* Object Oriented API
* Node nesting and event bubbling
* High performance event detection via color map hashing
* Layering support
* Node caching to improve draw performance
* Nodes can be converted into data URLs, image data, or image objects
* Animation support
* Transition support
* Drag and drop with configurable constraints and bounds
* Filters
* Ready to use shapes including rectangles, circles, images, text, lines, polygons, SVG paths, and more
* Custom shapes
* Event driven architecture which enables developers to subscribe to attr change events, layer draw events, and more
* Serialization & de-serialization
* Selector support e.g. stage.get('#foo') and layer.get('.bar');
* Desktop and mobile events
* AMD support
* Pixel ratio optimizations for sharp text and images
* Custom hit regions
* CodeIgniter + Bootstrap

CodeIgniter 是一套給 PHP 網站開發者使用的超輕量級MVC應用程序開發框架和工具包。她提供一套豐富的標準庫以及簡單的介面和邏輯結構，其目的是使開發人員更快速地進行項目開發。

Bootstrap是一個免費的工具集，用於開發網站。其中包含HTML、以CSS為基礎的設計樣板、表格、按鈕、導覽列等介面組件、以及選用性的JavaScript擴充功能。

EzWebGame使用CodeIgniter以及Bootstrap來實作server side以及Web概念網站，概念網站用來提供開發者註冊遊戲並取得EzWebGame Lib以及提供玩家註冊帳號。



1. **EzWebGame Library**

* API
* **登入登出介面**

|  |  |  |
| --- | --- | --- |
| **Function name** | **Parameter** | **Description** |
| login | none | 導向登入頁面 |
| logout | none | 登出 |

* **遊戲大廳介面**

|  |  |  |
| --- | --- | --- |
| **Function name** | **Parameter** | **Description** |
| listRoomInfos | none | 得到房間列表 |
| createGameRoom | 1. Room Title 2. Players Min Number 3. Players Max Number | 創立並進入房間 |
| joinGameRoom | 1. Room ID | 加入房間 |

* **房間介面**

|  |  |  |
| --- | --- | --- |
| **Function name** | **Parameter** | **Description** |
| startGameRoom | none | 開始遊戲 |
| leaveGameRoom | none | 離開房間 |

* **遊戲執行中介面**

|  |  |  |
| --- | --- | --- |
| **Function name** | **Parameter** | **Description** |
| doStep | 1. Instruction | 傳送指令 |
| finishStep | none | 結束此回合 |
| finishGame | none | 告知達成獲勝條件 |
| replyCheck | 1. bool | 確認其他玩家獲勝與否 |

* **其他介面**

|  |  |  |
| --- | --- | --- |
| **Function name** | **Parameter** | **Description** |
| isTurnSelf | none | 查詢是否輪到自己 |
| getNowTurnUserOrder | none | 查詢現在玩家的順序 |
| getUserTurnOrder | 1. (Player ID) | 查詢自己的順序，或指定玩家的順序 |
| getUserId | none | 查詢自己的ID |

* Event
* **認證事件**

|  |  |  |
| --- | --- | --- |
| **Event name** | **Parameter** | **Description** |
| onLoginSuccess | None | 登入成功 |
| onLoginFail | 1. Error Message | 登入失敗 |
| onLogout | none | 登出成功 |

* **大廳中事件**

|  |  |  |
| --- | --- | --- |
| **Event name** | **Parameter** | **Description** |
| onListRoomDone | 1. Room Infos | 收到大廳房間訊息 |
| onRoomCreated | 1. Room Info | 收到房間已創立訊息 |

* **房間中事件**

|  |  |  |
| --- | --- | --- |
| **Event name** | **Parameter** | **Description** |
| onRoomLeaved | none | 離開房間成功 |
| onRoomChanged | 1. Room Info | 房間狀態改變 |
| onRoomJoined | 1. Room Info | 房間加入成功 |
| onRoomStarted | 1. Room Info | 遊戲開始 |

* **遊戲中事件**

|  |  |  |
| --- | --- | --- |
| **Event name** | **Parameter** | **Description** |
| onReceiveStep | 1. Instruction | 收到指令訊息 |
| onChangeTrun | 1. playerInfo | 輪到下一位玩家 |
| onCheckWin | 1. Player ID | 某玩家說他獲勝，要確認他是否真的獲勝，回覆給伺服器 |
| onAccomplishGame | 1. playerInfo | 玩家達成遊戲條件 |
| onGameFinish | 1. rank | 遊戲結束 |

***Player Info****【玩家資訊】: 包含 userId, userName。*

***Players Info****【玩家資訊】: Player Info Array*

***Room****【房間資訊】: 包含 max, min, title*

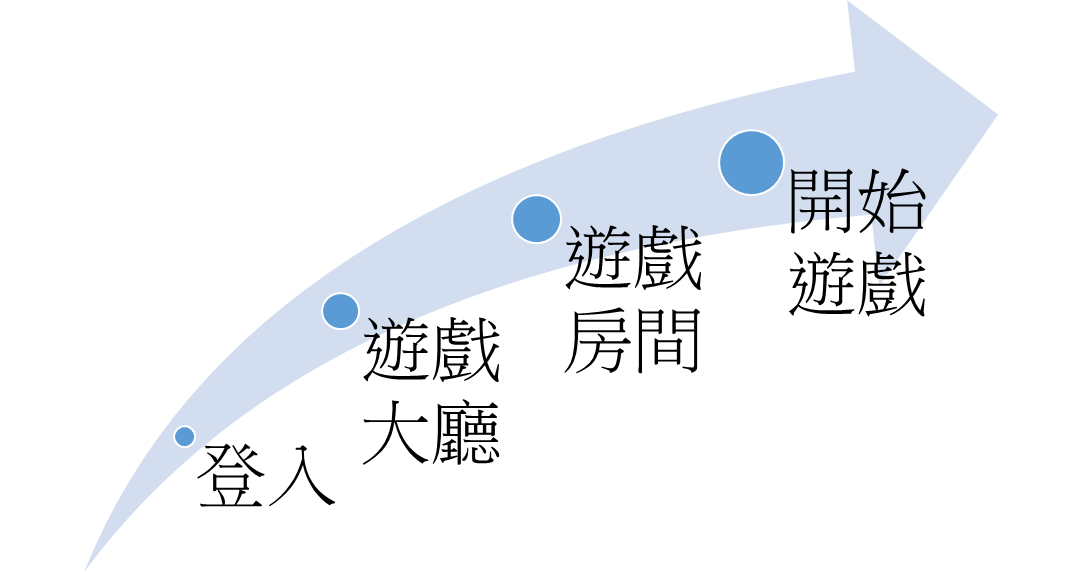
***Room Info****【房間資訊】: 包含 Room, Players Info*

***Room Infos****【房間資訊】: Room**Info Array*

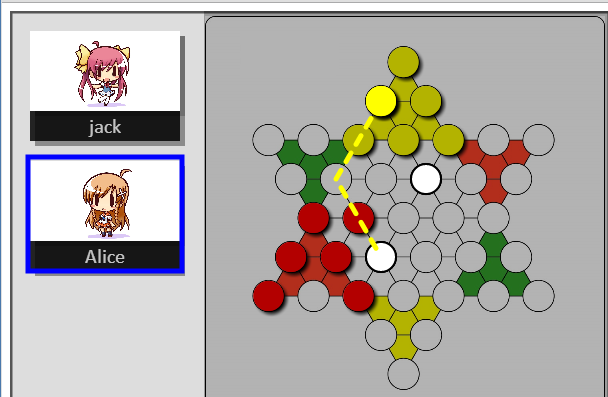
1. **Case Study : EzWebChecker**

* 摘要

EzWebChecker是一款簡易多人線上跳棋遊戲並擁有遊戲大廳、遊戲房間等機制。EzWebChecker使用EzWebGame Framework搭配KineticJS來加速遊戲的開發速度，使得開發遊戲可省去繁瑣的認證部分、回合控制器、房間系統與線上玩家互傳訊息功能。



遊戲流程



遊戲畫面

* 設計

遊戲初始階段，透過呼叫EzWebGame提供的API來實現登入認證、進入遊戲大廳、進入遊戲房間，並實做認證、大廳、房間事件來使遊戲能做相對的動作，且搭配KineticJS Layer的切換來完成整個遊戲。

遊戲進行階段，呼叫doStep來對所有房間內的玩家傳送移動指令字串，而本遊戲的指令設計以Json為格式，方便OnRecieveStep事件解析此字串能代表的動作與參數，再畫出該指令動畫或更改遊戲參數。finishStep及onChangeTurn事件，使得遊戲可以得知目前輪到的玩家已經結束該回合並得知下一位輪到誰。最後若玩家抵達終點，呼叫finishGame來通知EzWebGame自己已獲勝，而由系統指派一位玩家，來決定是否該玩家已達獲勝條件，若獲勝則由系統的回合控制器中排除，而onAccomplishGame事件來處理有玩家獲勝該執行之動作，onGameFinish事件告知所有玩家遊戲排名。



EzWebGame Lib使用示意圖

1. **結論**

往往遊戲開發者設計遊戲時，總希望能由系統告知目前觸發事件，如此即可專注於事件觸發後，程式所需之應對動作，與畫面如何安排與配置；許多煩瑣的登入流程、大廳系統、房間系統都不用操心，只要詢問某系統就能輕易得知這些資訊並操作。而EzWebGame成功的提供一個如此的系統，一個方便開發前端網頁的遊戲框架。

為了讓遊戲通訊上更有保障，EzWebGame增加cKey來對此做處理，此Key在登入後會得到，一個cKey只能呼叫EzWebGame API一次，而此API回傳的訊息中，會包含新的cKey來使遊戲程式可以繼續呼叫其他API。為何要設計使用此cKey來呼叫API？因為此cKey除拿來認證用外，裡頭包含玩家ID、房間ID、遊戲ID，來讓系統辨認是哪位玩家從哪個遊戲呼叫此API，而有相對應之回應。在後端底層API中，並不需要傳入任何玩家資訊，使得無法透過API來操作其他玩家之帳號。

而讓開發者能減少在後端心力的同時，也意味著大部分程式碼會暴露在前端上，如此可能使有心者，透過網頁瀏覽器的開發者模式，自行下指令使自己獲勝或作弊。而對此EzWebGame由於要適合所有遊戲，無法對個別遊戲進行客製化，故採用以詢問其他玩家的方式，來確認該玩家是否真已達獲勝條件，再通知所有玩家其結果，如此能有效防止單一玩家作弊的情況，但如一人分是兩角或多角同時作弊，則此方式則會出現漏洞。

EzWebGame尚有許多不盡人意之處，對如何確保系統對前後端安全性；用單一帳號能登入所有在此平台之遊戲，而此帳號是否能夠更多元，透過Google、FB…大型社群網站提供之帳號登入系統，是一個值得後續研究的議題。

1. **參考文獻**

[1] Comet Programing  
www.en.wikipedia.org/wiki/Comet\_(programming).

[2] CodeIgniter  
http://www.codeigniter.org.tw

[3] Bootstrap  
http://getbootstrap.com/

[4] HTML5 Canvas  
http://www.w3schools.com/tags/ref\_can vas.asp

[5] HTML5 Server Sent Events  
http://www.w3schools.com/html/html5\_serversentevents.asp

1. **附件**

* EzWebGame Model

class AuthModel extends CI\_Model

{

/\*\*

\* AuthModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* AuthModel::getNextCommuKey()

\*

\* 確認通訊 Key 並產生下一組通訊 Key 並儲存起來

\*

\* @param mixed $cKey

\* @param mixed $out

\* @return

\*/

public function getNextCommuKey($cKey, $out)

{

if ($this->checkCommuKey($cKey))

{

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$nextCKey = $this->commuKeygen($userId, $gameId, $roomId);

$this->saveCommuKey($userId, $gameId, $nextCKey);

$out->save("cKey", $nextCKey);

return $nextCKey;

}

$out->wrong("Communication Key Deny");

}

/\*\*

\* AuthModel::editCommuKey()

\*

\* 修改溝通Key中所帶房間資訊

\*

\* @param mixed $cKey

\* @param mixed $iRoomId

\* @param mixed $out

\* @return

\*/

public function editCommuKey($cKey, $iRoomId, $out)

{

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$nextCKey = $this->commuKeygen($userId, $gameId, $iRoomId);

$this->saveCommuKey($userId, $gameId, $nextCKey);

$out->save("cKey", $nextCKey);

return $nextCKey;

}

/\*\*

\* AuthModel::commuKeygen()

\*

\* 通訊 Key 產生器

\*

\* @param mixed $userId

\* @param mixed $gameId

\* @param mixed $roomId

\* @return

\*/

public function commuKeygen($userId, $gameId, $roomId)

{

$key = $this->keygen(10);

$cKey = sprintf("%s\_%d\_%d\_%d", $key, $userId, $gameId, $roomId);

return $cKey;

}

/\*\*

\* AuthModel::saveCommuKey()

\*

\* 儲存通訊 Key

\*

\* @param mixed $userId

\* @param mixed $gameId

\* @param mixed $key

\* @return void

\*/

public function saveCommuKey($userId, $gameId, $key)

{

$data = array('userId' => $userId, 'gameId' => $gameId, 'key' => $key);

$this->db->select("id");

$this->db->from('auth');

$this->db->where('userId', $userId);

$this->db->where('gameId', $gameId);

$result = $this->db->get()->result();

//echo count($result) > 0 ? "count > 0;" : "count <= 0";

if (count($result) > 0)

{

//echo $result[0]->id .";";

//print\_r($data);

$this->db->where('id', $result[0]->id);

$this->db->update('auth', $data);

//echo $this->db->last\_query();

}

else

{

$this->db->insert('auth', $data);

}

}

/\*\*

\* AuthModel::deleteCommuKey()

\*

\* 刪除通訊 Key

\*

\* @param mixed $cKey

\* @return void

\*/

public function deleteCommuKey($cKey)

{

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->db->where('userId', $userId);

$this->db->where('gameId', $gameId);

$this->db->delete('auth');

}

/\*\*

\* AuthModel::checkCommuKey()

\*

\* 檢查通訊 Key 是否存在

\*

\* @param mixed $cKey

\* @return

\*/

public function checkCommuKey($cKey)

{

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->db->select("key");

$this->db->from('auth');

$this->db->where('userId', $userId);

$this->db->where('gameId', $gameId);

$this->db->where('key', $cKey);

$result = $this->db->get()->result();

return count($result) > 0 ? true : false;

}

/\*\*

\* AuthModel::keygen()

\*

\* 金鑰產生器

\*

\* @param mixed $length

\* @return

\*/

public function keygen($length)

{

$key = '';

$microtime = microtime();

list($usec, $sec) = explode(' ', $microtime);

mt\_srand((float)$sec + ((float)$usec \* 100000));

$inputs = array\_merge(range('z', 'a'), range(0, 9), range('A', 'Z'));

for ($i = 0; $i < $length; $i++)

{

$key .= $inputs{mt\_rand(0, 61)};

}

return $key;

}

}

class ExecModel extends CI\_Model

{

/\*\*

\* ExecModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* ExecModel::start()

\*

\* 遊戲開始

\*

\* @param mixed $userId

\* @param mixed $roomId

\* @param mixed $out

\* @param mixed $rooms

\* @return void

\*/

public function start($userId, $roomId, $out, $roomInfo, $roomPlayers)

{

//$this->db->trans\_begin();

if (count($roomInfo) <= 0)

{ // 房間不存在

//$this->db->trans\_rollback();

$out->wrong("Room isn't Exist");

}

if ($roomInfo[0]["max"] >= count($roomPlayers) && $roomInfo[0]["min"] <= count($roomPlayers))

{ // 確認房間內玩家 人數是否符合

if ($roomPlayers[0]["userId"] != $userId)

{ // 確認是否為室長

//$this->db->trans\_rollback();

$out->wrong("Participants Cannot Open Room");

}

// 寫入開房資料

$data = array("status" => "start", "turn" => $roomPlayers[0]["userId"],

"playingList" => $this->roomPlayersToString($roomPlayers));

$this->db->where("id", $roomId);

$this->db->update("gameroom", $data);

/\*if ($this->db->trans\_status() === false)

$this->db->trans\_rollback();

else

$this->db->trans\_commit();\*/

return $roomPlayers[0];

}

else

{

//$this->db->trans\_rollback();

$out->wrong("Opening Room Standard is Not Satisfied");

}

}

public function end($roomId)

{

$this->db->where("id", $roomId);

$data = array("arriveId" => null, "winList" => null, "playingList" => null,

"status" => "wait");

$this->db->update("gameroom", $data);

}

/\*\*

\* ExecModel::roomPlayersToString()

\*

\* 把 RoomPlayer 轉成 String

\*

\* @param mixed $roomPlayers

\* @return

\*/

private function roomPlayersToString($roomPlayers)

{

$ids = array();

foreach ($roomPlayers as $roomPlayer)

{

array\_push($ids, $roomPlayer["userId"]);

}

return implode("-", $ids);

}

/\*\*

\* ExecModel::send()

\*

\* 送事件至房間中的其他玩家

\*

\* @param mixed $message

\* @param mixed $senderId

\* @param mixed $roomId

\* @param mixed $roomPlayers

\* @return void

\*/

public function send($type, $param, $senderId, $roomId, $roomPlayers, $isIncludeSelf = false)

{

$insertDatas = array();

$insertLogs = array();

foreach ($roomPlayers as $roomPlayer)

{

if ($roomPlayer["userId"] != $senderId || $isIncludeSelf)

{

$data = array();

$data["type"] = $type;

$data["receiverId"] = $roomPlayer["userId"];

$data["roomId"] = $roomId;

$data["param"] = $param;

array\_push($insertDatas, $data);

$log = array();

$log["value"] = json\_encode($data);

$log["time"] = date("Y-m-d H:i:s");

array\_push($insertLogs, $log);

}

}

if (count($insertDatas) > 0)

{

$this->db->insert\_batch("event", $insertDatas);

$this->db->insert\_batch("log", $insertLogs);

}

}

public function listen($userId, $roomId, $out, $roomModel)

{

$this->db->select("id, type, param");

$this->db->from("event");

//$this->db->where("type", $type);

$this->db->where("receiverId", $userId);

$this->db->where("roomId", $roomId);

$this->db->order\_by("id", "ASC");

$result = $this->db->get()->result();

$array = array();

$lastEventId = 0;

foreach ($result as $row)

{

switch ($row->type)

{

case 'start':

case 'roomChanged':

$param = array("Players" => $roomModel->playerInfo($roomId, $out));

break;

default:

$param = $row->param;

}

array\_push($array, $out->convertToEvent($row->type, $param));

$lastEventId = $row->id;

}

// 刪除已讀訊息

if ($lastEventId != 0)

{

$this->db->where("receiverId", $userId);

$this->db->where("id <=", $lastEventId);

$this->db->delete("event");

}

return $array;

}

/\*\*

\* ExecModel::checkRoomIsStart()

\*

\* 確保此房間是 遊戲中 且存在

\*

\* @param mixed $roomInfos

\* @param mixed $out

\* @return void

\*/

public function checkRoomIsStart($roomInfos, $out)

{

if (count($roomInfos) <= 0)

{

$out->wrong("Cannot Send Message To Room");

}

}

/\*\*

\* ExecModel::next()

\*

\* 把回合控制器中的 turn 轉到下一位玩家

\*

\* @param mixed $roomInfos

\* @param mixed $userId

\* @param mixed $out

\* @return

\*/

public function next($roomInfo, $userId, $out)

{

// 計算下一位玩家

$turn = $roomInfo["turn"];

$list = explode("-", $roomInfo["list"]);

for ($i = 0; $i < count($list); $i++)

{

if ($list[$i] == $userId)

{

$nextPlayer = $list[($i + 1) % count($list)];

break;

}

}

// 更新資料庫

$data = array("turn" => $nextPlayer);

$this->db->where("id", $roomInfo["id"]);

$this->db->update("gameroom", $data);

return $nextPlayer;

}

/\*\*

\* ExecModel::removeFromPlayingList()

\*

\* 把自己從回合控制器中移除

\*

\* @param mixed $userId

\* @param mixed $roomInfo

\* @return void

\*/

public function removeFromPlayingList($userId, $roomInfo)

{

$roomId = $roomInfo["id"];

$list = explode("-", $roomInfo["list"]);

for ($i = 0; $i < count($list); $i++)

{

if ($list[$i] == $userId)

{

unset($list[$i]);

break;

}

}

$data = array("playingList" => implode("-", $list));

$this->db->where("id", $roomId);

$this->db->update("gameroom", $data);

}

}

class GameModel extends CI\_Model

{

/\*\*

\* GameModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* GameModel::create()

\*

\* 創建遊戲

\*

\* @param mixed $name

\* @param mixed $gKey

\* @param mixed $password

\* @return

\*/

public function create($name, $gKey, $password)

{

$data = array('gameName' => $name, 'gKey' => $gKey, 'password' => $password);

$this->db->insert('gameinfo', $data);

return $gKey;

}

/\*\*

\* GameModel::exist()

\*

\* 確認某欄資料在 user資料表 中是否存在

\*

\* @param mixed $field

\* @param mixed $value

\* @return

\*/

public function exist($field, $value)

{

$this->db->select($field);

$this->db->from('gameinfo');

$this->db->where($field, $value);

return $this->db->count\_all\_results() > 0;

}

/\*\*

\* GameModel::getGameKey()

\*

\* 使用遊戲名稱 跟 開發者密碼 得到gKey

\*

\* @param mixed $name

\* @param mixed $password

\* @return

\*/

public function getGameKey($name, $password)

{

$this->db->select("gKey");

$this->db->from('gameinfo');

$this->db->where('gameName', $name);

$this->db->where('password', $password);

$result = $this->db->get()->result();

return count($result) > 0 ? $result[0]->gKey : 0;

}

/\*\*

\* GameModel::checkAuth()

\*

\* 確認 gKey

\*

\* @param mixed $gKey

\* @return

\*/

public function checkAuth($gKey)

{

$this->db->select("id, gameName");

$this->db->from('gameinfo');

$this->db->where('gKey', $gKey);

$result = $this->db->get()->result();

$isPermit = count($result) > 0;

return $isPermit ? array("id" => $result[0]->id, "name" => $result[0]->gameName) : false;

}

}

class GAuthModel extends CI\_Model

{

/\*\*

\* GAuthModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* GAuthModel::saveLoginKey()

\*

\* 儲存登入 Key

\*

\* @param mixed $loginKey

\* @return void

\*/

public function saveLoginKey($loginKey)

{

list($key, $gameId) = explode('\_', $loginKey);

$data = array('gameId' => $gameId, 'key' => $loginKey);

$this->db->insert('gauth', $data);

}

/\*\*

\* GAuthModel::checkLoginKey()

\*

\* 確認登入 Key

\*

\* @param mixed $loginKey

\* @return

\*/

public function checkLoginKey($loginKey)

{

list($key, $gameId) = explode('\_', $loginKey);

$this->db->select("id");

$this->db->from('gauth');

$this->db->where('key', $loginKey);

$this->db->where('gameId', $gameId);

$result = $this->db->get()->result();

return count($result) > 0 ? true : false;

}

/\*\*

\* GAuthModel::deleteLoginKey()

\*

\* 刪除登入 Key

\*

\* @param mixed $loginKey

\* @return void

\*/

public function deleteLoginKey($loginKey)

{

list($key, $gameId) = explode('\_', $loginKey);

$this->db->where('gameId', $gameId);

$this->db->where('key', $loginKey);

$this->db->delete('gauth');

}

}

class OutputModel extends CI\_Model

{

private $output = array();

/\*\*

\* OutputModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

}

/\*\*

\* OutputModel::delete()

\*

\* 刪除儲存中的 key

\*

\* @param mixed $key

\* @return void

\*/

public function delete($key)

{

if (isset($this->output[$key]))

{

unset($this->output[$key]);

}

}

/\*\*

\* OutputModel::save()

\*

\* 儲存VALUE與KEY

\*

\* @param mixed $key

\* @param mixed $value

\* @return void

\*/

public function save($key, $value)

{

if ($value === true || $value === false)

$this->output[$key] = $value ? "true" : "false";

else

$this->output[$key] = $value;

}

/\*\*

\* OutputModel::debug()

\*

\* 給DEBUG用，以DEBUG KEY一直去累加要輸出的資料

\*

\* @param mixed $value

\* @return void

\*/

public function debug($value)

{

$key = "DebugInfo";

if (isset($this->output[$key]))

$this->output[$key] .= " ; " . $value;

else

$this->output[$key] = $value;

}

/\*\*

\* OutputModel::wrong()

\*

\* 重大錯誤，且危害程式執行，故停止執行程式

\*

\* @param mixed $value

\* @return void

\*/

public function wrong($value)

{

$this->save("Wrong", $value);

$this->show();

exit;

}

/\*\*

\* OutputModel::show()

\*

\* 把暫存資料以JSON格式輸出

\*

\* @return void

\*/

public function show()

{

echo json\_encode($this->output);

}

/\*\*

\* OutputModel::flush()

\*

\* 把暫存資料以JSON格式，透過SSE輸出

\*

\* @return void

\*/

public function flush()

{

echo "data: ";

$this->out->show();

echo "\n\n";

$this->output = array();

flush();

}

/\*\*

\* OutputModel::convertToEvent()

\*

\* Event Format is "array("Type" => $key, "Param" => $value)"

\*

\* @param mixed $key

\* @param mixed $value

\* @return

\*/

public function convertToEvent($key, $value)

{

return array("Type" => $key, "Param" => $value);

}

}

class RoomModel extends CI\_Model

{

/\*\*

\* RoomModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* RoomModel::create()

\*

\* 創立房間

\*

\* @param mixed $gameId

\* @param mixed $title

\* @param mixed $minPlayer

\* @param mixed $maxPlayer

\* @return

\*/

public function create($gameId, $title, $minPlayer, $maxPlayer)

{

$data = array('gameId' => $gameId, 'title' => $title, 'min' => $minPlayer, 'max' =>

$maxPlayer, 'status' => 'wait');

$this->db->insert('gameroom', $data);

return $this->db->insert\_id();

}

/\*\*

\* RoomModel::join()

\*

\* 加入房間

\*

\* @param mixed $userId

\* @param mixed $roomId

\* @param mixed $out

\* @return

\*/

public function join($userId, $roomId, $out)

{

$this->checkUserNotInAnyRoom($userId, $out); // 確認玩家不要重複加入房間

$this->db->trans\_begin();

$this->checkRoomCanJoin($roomId, $out);

$data = array("roomId" => $roomId, "userId" => $userId);

$this->db->insert('room\_to\_user', $data);

if ($this->db->trans\_status() === false)

{

$this->db->trans\_rollback();

return false;

}

else

{

$this->db->trans\_commit();

return $roomId;

}

}

/\*\*

\* RoomModel::leave()

\*

\* 離開房間

\*

\* @param mixed $userId

\* @param mixed $roomId

\* @param mixed $out

\* @return void

\*/

public function leave($userId, $roomId, $out)

{

$this->db->where("roomId", $roomId);

$this->db->where("userId", $userId);

$this->db->delete('room\_to\_user');

$this->db->trans\_begin();

$plasyers = $this->getRoomPlayers($roomId);

if (count($plasyers) <= 0)

{

$this->db->where("id", $roomId);

$this->db->delete("gameroom");

}

if ($this->db->trans\_status() === false)

$this->db->trans\_rollback();

else

$this->db->trans\_commit();

}

/\*\*

\* RoomModel::roomInfo()

\*

\* 未開始房間資訊

\*

\* @param mixed $out

\* @param bool $roomId

\* @param string $status

\* @return

\*/

public function roomInfo($out, $roomId = false, $status = "wait")

{

$result = $this->getRooms($out, $roomId, $status);

$room = array();

foreach ($result as $row)

{

$array = array();

$array["id"] = $row->id;

$array["title"] = $row->title;

$array["max"] = $row->max;

$array["min"] = $row->min;

$array["now"] = $row->now == null ? 0 : $row->now;

$array["turn"] = $row->turn;

$array["list"] = $row->playingList;

if ($row->id != null)

array\_push($room, $array);

}

$out->save("Room", $room);

return $room;

}

/\*\*

\* RoomModel::playerInfo()

\*

\* 房間中玩家資訊

\*

\* @param mixed $roomId

\* @param mixed $out

\* @return

\*/

public function playerInfo($roomId, $out)

{

$result = $this->getRoomPlayers($roomId);

$players = array();

foreach ($result as $row)

{

$array = array();

$array["userId"] = $row->id;

$array["userName"] = $row->userName;

array\_push($players, $array);

}

$out->save("Players", $players);

return $players;

}

/\*\*

\* RoomModel::getRooms()

\*

\* 得到未開始房間(未處理成array物件)

\*

\* @param mixed $out

\* @param mixed $roomId

\* @param mixed $status

\* @return

\*/

private function getRooms($out, $roomId, $status)

{

// 各房間中有多少人的 Table(RoomId, NowPlayers)

$RoomPlayerCountTable =

"(SELECT roomId, count(userId) AS now from room\_to\_user GROUP BY roomId) AS RPCT";

$this->db->select("gameroom.id, title, min, max, turn, now, playingList");

$this->db->from("gameroom");

if ($roomId != false)

$this->db->where("gameroom.id", $roomId);

$this->db->where("status", $status);

$this->db->join($RoomPlayerCountTable, "gameroom.id = RPCT.roomId", "left");

return $this->db->get()->result();

}

/\*\*

\* RoomModel::getRoomPlayers()

\*

\* 得到房間中玩家資訊(未處理成array物件)

\*

\* @param mixed $roomId

\* @return

\*/

private function getRoomPlayers($roomId)

{

$this->db->select("user.id, user.userName");

$this->db->from("room\_to\_user");

$this->db->where("room\_to\_user.roomId", $roomId);

$this->db->join("user", "user.id = room\_to\_user.userId", "left");

$this->db->order\_by("room\_to\_user.id", "ASC");

return $this->db->get()->result();

}

/\*\*

\* RoomModel::modify()

\*

\* 修改房間資訊

\*

\* @param mixed $roomId

\* @param mixed $data

\* @return void

\*/

public function modify($roomId, $data)

{

$this->db->where("id", $roomId);

$this->db->update('gameroom', $data);

}

/\*\*

\* RoomModel::deleteSelfFromAnyRoom()

\*

\* 刪除所有自己所在之任何房間

\*

\* @param mixed $userId

\* @return void

\*/

public function deleteSelfFromAnyRoom($userId)

{

$this->db->where("userId", $userId);

$this->db->delete("room\_to\_user");

}

/\*\*

\* RoomModel::checkRoomCanJoin()

\*

\* 確認此房間是否能加入

\*

\* @param mixed $roomId

\* @param mixed $out

\* @return void

\*/

public function checkRoomCanJoin($roomId, $out)

{

$this->db->select("max");

$this->db->from('gameroom');

$this->db->where('id', $roomId);

$this->db->where('status', 'wait');

$result = $this->db->get()->result();

if (count($result) <= 0)

{

$this->db->trans\_rollback();

$out->wrong("No This Room or Status isn't Wait");

}

$max = $result[0]->max;

$this->db->select("roomId");

$this->db->from('room\_to\_user');

$this->db->where('roomId', $roomId);

$result = $this->db->get()->result();

if (count($result) + 1 > $max)

{

$this->db->trans\_rollback();

$out->wrong("This Room is Full");

}

}

/\*\*

\* RoomModel::checkUserNotInAnyRoom()

\*

\* 確認玩家有無在其他房間內

\*

\* @param mixed $userId

\* @param mixed $out

\* @return void

\*/

public function checkUserNotInAnyRoom($userId, $out)

{

$this->db->select("roomId");

$this->db->from('room\_to\_user');

$this->db->where('userId', $userId);

$result = $this->db->get()->result();

if (count($result) > 0)

{

$out->wrong(sprintf("User In %d Room", $result[0]->roomId));

}

}

public function waitCheckWin($roomId, $userId)

{

$this->db->where("id", $roomId);

$data = array("arriveId" => $userId);

$this->db->update("gameroom", $data);

}

public function getWaitCheckWinUserId($roomId)

{

$this->db->select("arriveId");

$this->db->from("gameroom");

$this->db->where("id", $roomId);

$result = $this->db->get()->result();

return $result[0]->arriveId;

}

public function saveToWinList($roomId, $userId)

{

$this->db->select("winList");

$this->db->from("gameroom");

$this->db->where("id", $roomId);

$result = $this->db->get()->result();

$winList = $result[0]->winList == null ? $userId : $result[0]->winList . "-" . $userId;

$this->db->where("id", $roomId);

$data = array("arriveId" => null, "winList" => $winList);

$this->db->update("gameroom", $data);

return $winList;

}

}

class UserModel extends CI\_Model

{

/\*\*

\* UserModel::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->database();

}

/\*\*

\* UserModel::create()

\*

\* 創建使用者

\*

\* @param mixed $name

\* @param mixed $account

\* @param mixed $password

\* @return

\*/

public function create($name, $account, $password)

{

$data = array('userName' => $name, 'account' => $account, 'password' => $password);

$this->db->insert('user', $data);

return $this->db->insert\_id();

}

/\*\*

\* UserModel::exist()

\*

\* 確認某欄資料在 user資料表 中是否存在

\*

\* @param mixed $field

\* @param mixed $value

\* @return

\*/

public function exist($field, $value)

{

$this->db->select($field);

$this->db->from('user');

$this->db->where($field, $value);

return $this->db->count\_all\_results() > 0;

}

/\*\*

\* UserModel::checkAuth()

\*

\* 確認使用者帳號密碼

\*

\* @param mixed $account

\* @param mixed $password

\* @return

\*/

public function checkAuth($account, $password)

{

$this->db->select("id, userName");

$this->db->from('user');

$this->db->where('account', $account);

$this->db->where('password', $password);

$result = $this->db->get()->result();

$isPermit = count($result) > 0;

return $isPermit ? array("id" => $result[0]->id, "name" => $result[0]->userName) : false;

}

}

* EzWebGame Controller

class Developers extends CI\_Controller

{

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("GameModel");

}

public function index()

{

$this->load->view('header');

$this->load->view('developers');

$this->load->view('footer');

}

}

class Event extends CI\_Controller

{

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("OutputModel", "out");

$this->load->model("ExecModel");

$this->load->model("AuthModel");

}

public function request($cKey)

{

$this->checkIsPermit($cKey);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->load->model("RoomModel", "room");

header("Content-Type: text/event-stream");

header('Cache-Control: no-cache');

if (ob\_get\_level())

ob\_end\_flush();

$this->out->save("Events", $this->out->convertToEvent("Debug", "Hello Request"));

$this->out->flush();

$count = 0;

while (true)

{

if ($count++ >= 3)

{// 過一陣子 要回傳一些訊息給 SSE

$this->out->save("Events",$this->out->convertToEvent("Debug", "Test Request"));

$this->out->flush();

$count = 0;

}

if ($roomId != 0)

{

$events = $this->ExecModel->listen($userId, $roomId, $this->out, $this->room);

if (count($events) > 0)

{

$this->out->save("Events", $events);

$this->out->flush();

$count = 0;

}

}

else

{

$rooms = $this->room->roomInfo($this->out);

$this->out->save("Events", array($this->out->convertToEvent("RefreshRoomList", $rooms)));

$this->out->flush();

$count = 0;

}

sleep(3);

}

}

private function checkIsPermit($cKey)

{

$isPermit = $this->AuthModel->checkCommuKey($cKey);

if (!$isPermit)

{ // 通訊Key 認證失敗

$this->out->wrong("No Auth Can Request");

}

}

}

class Exec extends CI\_Controller

{

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("OutputModel", "out");

$this->load->model("ExecModel");

$this->load->model("AuthModel");

}

/\*\*

\* Exec::start()

\*

\* 開始遊戲

\*

\* @param mixed $cKey

\* @return void

\*/

public function start($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

// 獲取房間資料

$this->load->model("RoomModel", "room");

$roomInfo = $this->room->roomInfo($this->out, $roomId);

$this->out->delete("Room");

$roomPlayers = $this->room->playerInfo($roomId, $this->out);

$turnPlayer = $this->ExecModel->start($userId, $roomId, $this->out, $roomInfo, $roomPlayers);

// 告知其他玩家 遊戲開始

$message = sprintf("Room[%d] Start Game", $roomId);

$this->ExecModel->send("start", $message, $userId, $roomId, $roomPlayers);

// 告知所有玩家 現在換誰

$message = json\_encode($turnPlayer);

$this->ExecModel->send("turn", $message, $userId, $roomId, $roomPlayers, true);

$this->out->save("Start", true);

$this->out->show();

}

/\*\*

\* Exec::SendMessage()

\*

\* 遊戲中 傳送指令給其他玩家

\*

\* @param mixed $message

\* @param mixed $cKey

\* @return void

\*/

public function SendMessage($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$message = $this->input->post('message');

$roomInfo = $this->checkRoomExistAndIsTurnMe($userId, $roomId);

$roomPlayers = $this->room->playerInfo($roomId, $this->out);

$this->ExecModel->send("message", $message, $userId, $roomId, $roomPlayers);

$this->out->save("Message", $message);

$this->out->show();

}

/\*\*

\* Exec::nextRound()

\*

\* @param mixed $cKey

\* @return void

\*/

public function nextRound($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$roomInfo = $this->checkRoomExistAndIsTurnMe($userId, $roomId);

$playerId = $this->ExecModel->next($roomInfo, $userId, $roomId);

$roomPlayers = $this->room->playerInfo($roomId, $this->out);

foreach ($roomPlayers as $player)

{

if ($player["userId"] == $playerId)

{

$this->out->save("NextRound", $player);

// 告知其他玩家 現在換誰

$message = json\_encode($player);

$this->ExecModel->send("turn", $message, $userId, $roomId, $roomPlayers);

break;

}

}

$this->out->show();

}

/\*\*

\* Exec::ArriveFinalStep()

\*

\* 找個玩家 說你已經獲勝 看他同不同意

\*

\* @param mixed $cKey

\* @return void

\*/

public function ArriveFinalStep($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$roomInfo = $this->checkRoomExistAndIsTurnMe($userId, $roomId);

//尋找適合的玩家 去確認是否此人完成遊戲

$askPlayer = array();

$roomPlayers = $this->room->playerInfo($roomId, $this->out);

foreach($roomPlayers as $player)

{

if($player["userId"] != $userId)

{

array\_push($askPlayer, $player);

break;

}

}

$this->room->waitCheckWin($roomId, $userId);

$message = json\_encode(array("WinnerId" => $userId));

$this->ExecModel->send("checkWin", $message, $userId, $roomId, $askPlayer);

$this->out->show();

}

/\*\*

\* Exec::Replay()

\*

\* 回復 剛剛說WIN的玩家是否獲勝

\*

\* @param mixed $isWin

\* @param mixed $cKey

\* @return void

\*/

public function Reply($isWin, $cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->load->model("RoomModel", "room");

$roomPlayers = $this->room->playerInfo($roomId, $this->out);

$winUserId = $this->room->getWaitCheckWinUserId($roomId);

if($isWin == "true")

{

$roomInfos = $this->room->roomInfo($this->out, $roomId, "start");

$roomInfo = $roomInfos[0];

$playerId = $this->ExecModel->next($roomInfo, $winUserId, $roomId);

$this->ExecModel->removeFromPlayingList($winUserId, $roomInfo);

foreach ($roomPlayers as $player)

{

if ($player["userId"] == $playerId)

{

$turnWhoMessage = json\_encode($player);

}

if($player["userId"] == $winUserId)

{

$whoArrived = json\_encode($player);

}

}

// 把玩家存入 winList

$winList = $this->room->saveToWinList($roomId, $winUserId);

// 確認此房間是否已經結束

$roomInfos = $this->room->roomInfo($this->out, $roomId, "start");

$roomInfo = $roomInfos[0];

if(count(explode("-", $roomInfo["list"])) == 1)

{

$rank = explode("-", $winList."-".$roomInfo["list"]);

foreach ($rank as &$Id)

{

foreach ($roomPlayers as $player)

{

if ($player["userId"] == $Id)

{

$Id = $player;

break;

}

}

}

// 把房間改成wait

$this->ExecModel->end($roomId);

// 告知所有人 Rank And GameOver

$this->ExecModel->send("rank", json\_encode($rank), $userId, $roomId, $roomPlayers, true);

}

else

{

// 告知有玩家抵達終點

$this->ExecModel->send("arrived", $whoArrived, $userId, $roomId, $roomPlayers, true);

// 告知所有玩家 現在換誰

$this->ExecModel->send("turn", $turnWhoMessage, $userId, $roomId, $roomPlayers, true);

}

}

else

{

$message = "Cheat";

$this->ExecModel->send("arrived", $message, $userId, $roomId, $roomPlayers, true);

}

$this->out->show();

}

/\*\*

\* Exec::checkRoomExistAndIsTurnMe()

\*

\* @param mixed $userId

\* @param mixed $roomId

\* @return 傳回目前房間資訊

\*/

private function checkRoomExistAndIsTurnMe($userId, $roomId)

{

// 確認房間

$this->load->model("RoomModel", "room");

$roomInfos = $this->room->roomInfo($this->out, $roomId, "start");

$this->out->delete("Room"); // 刪除儲存在out中的Room Key

$this->ExecModel->checkRoomIsStart($roomInfos, $this->out);

// 確認現在是輪到自己送訊息

if ($roomInfos[0]["turn"] == $userId)

{

return $roomInfos[0];

}

else

{

$this->out->wrong("Game isn't turn me");

}

}

}

class Game extends CI\_Controller

{

/\*\*

\* Game::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("GameModel");

}

/\*\*

\* Game::create()

\*

\* 創建遊戲

\*

\* @param mixed $name

\* @param mixed $password

\* @return void

\*/

public function create($name, $password)

{

if (!$this->isNameExist($name))

{

$this->load->model("AuthModel");

$gKey = $this->AuthModel->keygen(18);

echo 'Your Key is<br>' . $this->GameModel->create($name, $gKey, $password);

}

else

{

echo "Name has been used!";

}

}

/\*\*

\* Game::isNameExist()

\*

\* 此遊戲名稱是否存在

\*

\* @param mixed $name

\* @return

\*/

public function isNameExist($name)

{

return $this->GameModel->exist("gameName", $name);

}

/\*\*

\* Game::getGameKey()

\*

\* 得到 gKey

\*

\* @param mixed $name

\* @param mixed $password

\* @return void

\*/

public function getGameKey($name, $password)

{

$gKey = $this->GameModel->getGameKey($name, $password);

if ($gKey == '0')

echo 'Incorrect Name or Password';

else

echo 'Your Key is<br>' . $gKey;

}

/\*\*

\* Game::loadEzWebGameLib()

\*

\* 下載 EzWebGameLib

\*

\* @param mixed $gKey

\* @return void

\*/

public function loadEzWebGameLib($gKey)

{

$auth = $this->GameModel->checkAuth($gKey);

//print\_r($auth);

if ($auth != false)

{

$this->load->model("AuthModel");

$this->load->model("GAuthModel");

$loginKey = sprintf("%s\_%d", $this->AuthModel->keygen(12), $auth["id"]);

$this->GAuthModel->saveLoginKey($loginKey);

echo $loginKey;

}

else

{

echo "404 Error";

}

}

}

class Member extends CI\_Controller

{

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("GameModel");

}

public function index()

{

$this->signUP();

}

public function signUP()

{

$this->load->view('header');

$this->load->view('Member/signup');

$this->load->view('footer');

}

public function login($lKey = null)

{

$this->load->library('user\_agent');

$data["lKey"] = $lKey;

$this->load->view('header');

if ($this->agent->is\_referral())

{

$this->load->view('Member/login', $data);

}

$this->load->view('footer');

}

}

class Room extends CI\_Controller

{

/\*\*

\* Room::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("OutputModel", "out");

$this->load->model("RoomModel");

$this->load->model("AuthModel");

}

/\*\*

\* Room::create()

\*

\* 創建房間

\*

\* @param mixed $title

\* @param mixed $minPlayer

\* @param mixed $maxPlayer

\* @param mixed $cKey

\* @return void

\*/

public function create($title, $minPlayer, $maxPlayer, $cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

$this->checkPlayerNumber($minPlayer, $maxPlayer);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->RoomModel->checkUserNotInAnyRoom($userId, $this->out); //檢查玩家是否有在任何房間中

$roomId = $this->RoomModel->create($gameId, $title, $minPlayer, $maxPlayer);

$this->out->save("Create", $roomId);

$this->join($roomId, $nextCKey); //自動加入剛創建的房間

}

/\*\*

\* Room::join()

\*

\* 加入房間

\*

\* @param mixed $iRoomId

\* @param mixed $cKey

\* @return void

\*/

public function join($iRoomId, $cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$roomId = $this->RoomModel->join($userId, $iRoomId, $this->out);

if ($roomId != false)

{

$this->RoomModel->roomInfo($this->out, $roomId);

$roomPlayers = $this->RoomModel->playerInfo($roomId, $this->out);

// 告知其他玩家 自己加入房間

$this->load->model("ExecModel", "Exec");

$message = sprintf("User[%d] Join Room[%d]", $userId, $roomId);

$this->Exec->send("roomChanged", $message, $userId, $roomId, $roomPlayers);

}

$this->AuthModel->editCommuKey($nextCKey, $iRoomId, $this->out);

$this->out->save("Join", $roomId);

$this->out->show();

}

/\*\*

\* Room::leave()

\*

\* 離開房間

\*

\* @param mixed $cKey

\* @return void

\*/

public function leave($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->RoomModel->leave($userId, $roomId, $this->out);

$this->AuthModel->editCommuKey($nextCKey, 0, $this->out);

// 告知其他玩家 自己離開房間

$this->load->model("ExecModel", "Exec");

$roomPlayers = $this->RoomModel->playerInfo($roomId, $this->out);

$this->out->delete("Players");

$message = sprintf("User[%d] Leave Room[%d]", $userId, $roomId);

$this->Exec->send("roomChanged", $message, $userId, $roomId, $roomPlayers);

$this->out->save("Leave", true);

$this->out->show();

}

/\*\*

\* Room::ListRoomInfos()

\*

\* 查詢所有未開始房間

\*

\* @param mixed $cKey

\* @return void

\*/

public function ListRoomInfos($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->RoomModel->roomInfo($this->out);

$this->out->show();

}

/\*\*

\* Room::ListRoomPlayers()

\*

\* 查詢某房間的所有玩家

\*

\* @param mixed $cKey

\* @return void

\*/

public function ListRoomPlayers($cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$this->RoomModel->playerInfo($roomId, $this->out);

$this->out->show();

}

/\*\*

\* Room::modifyTitle()

\*

\* 修改房間名稱

\*

\* @param mixed $iTitle

\* @param mixed $cKey

\* @return void

\*/

public function modifyTitle($iTitle, $cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

$data = array("title" => $iTitle);

$this->RoomModel->modify($roomId, $data);

$this->out->save("ModifyTitle", true);

}

/\*\*

\* Room::ModifyMinMaxPlayer()

\*

\* 修改房間 玩家人數上下限

\*

\* @param mixed $minPlayer

\* @param mixed $maxPlayer

\* @param mixed $cKey

\* @return void

\*/

public function ModifyMinMaxPlayer($minPlayer, $maxPlayer, $cKey)

{

$nextCKey = $this->AuthModel->getNextCommuKey($cKey, $this->out);

list($key, $userId, $gameId, $roomId) = explode('\_', $cKey);

checkPlayerNumber($minPlayer, $maxPlayer);

$data = array("min" => $minPlayer, "max" => $maxPlayer);

$this->RoomModel->modify($roomId, $data);

$this->out->save("ModifyTitle", true);

}

/\*\*

\* Room::checkPlayerNumber()

\*

\* 遊戲設定玩家人數上下限 防呆機制

\*

\* @param mixed $minPlayer

\* @param mixed $maxPlayer

\* @return void

\*/

private function checkPlayerNumber($minPlayer, $maxPlayer)

{

if (!($minPlayer >= 1 && $minPlayer <= $maxPlayer && $maxPlayer <= 10))

{

$this->out->wrong("MaxPlayer = 2~20, MinPlayer <= 2 <=MaxPlayer");

}

}

}

class User extends CI\_Controller

{

/\*\*

\* User::\_\_construct()

\*

\* @return void

\*/

public function \_\_construct()

{

parent::\_\_construct();

$this->load->model("OutputModel", "out");

$this->load->model("UserModel");

}

/\*\*

\* User::signup()

\*

\* 創建使用者帳號密碼

\*

\* @param mixed $name

\* @param mixed $account

\* @param mixed $password

\* @return void

\*/

public function signup($name, $account, $password)

{

if (!$this->UserModel->exist("account", $account) && !$this->UserModel->exist("userName",

$name))

{

$userId = $this->UserModel->create($name, $account, $password);

$this->out->save("userId", $userId);

}

else

{

$this->out->wrong("Account or UserName Repeat");

}

$this->out->show();

}

/\*\*

\* User::isNameExist()

\*

\* 確認名字是否存在

\*

\* @param mixed $name

\* @return void

\*/

public function isNameExist($name)

{

$isExist = $this->UserModel->exist("userName", $name);

$this->out->save("NameExist", $isExist);

$this->out->show();

}

/\*\*

\* User::isAccountExist()

\*

\* 確認此帳號是否存在

\*

\* @param mixed $account

\* @return void

\*/

public function isAccountExist($account)

{

$isExist = $this->UserModel->exist("account", $account);

$this->out->save("AccountExist", $isExist);

$this->out->show();

}

/\*\*

\* User::login()

\*

\* 登入

\*

\* @param mixed $lKey

\* @param mixed $account

\* @param mixed $password

\* @return void

\*/

public function login($lKey, $account, $password)

{

$this->load->model("GAuthModel");

$gAuth = $this->GAuthModel->checkLoginKey($lKey); // 確認此key可以用來登入此遊戲

$auth = $this->UserModel->checkAuth($account, $password);

if ($gAuth && $auth != false)

{

$this->load->model("AuthModel");

$this->GAuthModel->deleteLoginKey($lKey); // 刪除登入時使用的Key

list($key, $gameId) = explode('\_', $lKey);

$nextCKey = $this->AuthModel->commuKeygen($auth["id"], $gameId, 0); // 產生 溝通key

$this->AuthModel->saveCommuKey($auth["id"], $gameId, $nextCKey); // 儲存溝通key

$this->out->save("cKey", $nextCKey);

// 刪除之前所在之房間

$this->load->model("RoomModel", "room");

$this->room->deleteSelfFromAnyRoom($auth["id"]);

}

else

{

$this->out->wrong("Authentication failed");

}

$this->out->show();

}

/\*\*

\* User::cancelLogin()

\*

\* 取消此 登入Key

\*

\* @param mixed $lKey

\* @return void

\*/

public function cancelLogin($lKey)

{

$this->load->model("GAuthModel");

$this->GAuthModel->deleteLoginKey($lKey);

}

/\*\*

\* User::logout()

\*

\* 登出

\*

\* @param mixed $ckey

\* @return void

\*/

public function logout($ckey)

{

$this->load->model("AuthModel");

$this->AuthModel->deleteCommuKey($ckey);

$this->out->save("Logout", true);

$this->out->show();

}

}

* EzWebGame View

header.php

<!DOCTYPE html>

<html lang="en">

<head>

<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<meta name="viewport" content="width=device-width, initial-scale=1.0" />

<meta name="description" content="" />

<meta name="author" content="keming&ZhongTing" />

<link rel="shortcut icon" href="<?=base\_url("assets/icon/favicon.ico")?>" />

<title>EzWebGames</title>

<!-- Bootstrap core CSS -->

<link href="<?=base\_url("assets/css/bootstrap.css")?>" rel="stylesheet" />

<!-- Custom styles for this template -->

<link href="<?=base\_url("assets/css/jumbotron-narrow.css")?>" rel="stylesheet" />

<!-- HTML5 shim and Respond.js IE8 support of HTML5 elements and media queries -->

<!--[if lt IE 9]>

<script src="../../assets/js/html5shiv.js"></script>

<script src="../../assets/js/respond.min.js"></script>

<![endif]-->

<script src="//ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js"></script>

</head>

<body>

<div class="container">

<div class="header">

<ul class="nav nav-pills pull-right">

<li class="active"><a href="<?=base\_url("")?>">Home</a></li>

<li><a href="<?=base\_url("Developers")?>">Developers</a></li>

<li><a href="<?=base\_url("Member")?>">Member</a></li>

</ul>

<h3 class="text-muted">EzWebGame</h3>

</div>

<div class="modal fade" id="myModal" tabindex="-1" role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">

<div class="modal-dialog">

<div class="modal-content">

<div class="modal-header">

<button type="button" class="close" data-dismiss="modal" aria-hidden="true">&times;</button>

<h4 class="modal-title">Modal title</h4>

</div>

<div class="modal-body">

...

</div>

<div class="modal-footer">

<button type="button" class="btn btn-default" data-dismiss="modal">OK</button>

</div>

</div><!-- /.modal-content -->

</div><!-- /.modal-dialog -->

</div>

index.php

<div class="jumbotron">

<h1>EzWebGame</h1>

<p class="lead">Enjoy Games in EzWebGame</p>

<p><a class="btn btn-lg btn-success" href="<?=base\_url('member/signup')?>">Sign up today</a></p>

</div>

<div class="row marketing">

<div class="col-lg-6">

<h4>Developer</h4>

<p>Register your game and get EzWebGameLib for free!</p>

</div>

<div class="col-lg-6">

<h4>Member</h4>

<p>Become a member and play games on EzWebGames!</p>

</div>

</div>

developers.php

<input type="button" class="btn btn-primary" value="Register Game"/>

<div id="dataInputDIV">

<br />

<form role="form">

<div class="form-group">

<label for="exampleInputEmail1">Game Name</label>

<input id="gameName" type="text" class="form-control" placeholder="Enter your game name">

</div>

<div class="form-group">

<label for="exampleInputPassword1">Password</label>

<input id="password" type="password" class="form-control" placeholder="Password">

</div>

<input type="button" class="btn btn-default" value="Register"/>

<input type="button" class="btn btn-default" value="Query Key"/>

</form>

</div>

<br />

<br />

<input type="button" class="btn btn-primary" value="Query GameKey"/>

<br />

<br />

<input type="button" class="btn btn-primary" value="Download Library"/>

<br />

<br />

<script type="text/javascript">

$(".header ul li").each(function(){$(this).removeClass('active')});

$(".header ul li:eq(1)").addClass('active');

$("#dataInputDIV").hide();

$("input[value='Register Game']").on('click',function(){

if($(dataInputDIV).css('display')=='none')

$("#dataInputDIV").slideToggle();

else if($("#gameName").val().trim()!="")

sendNameAndPasswordTo('./game/create','Register Result');

$("#dataInputDIV input[value='Register']").show();

$("#dataInputDIV input[value='Query Key']").hide();

});

$("input[value='Query GameKey']").on('click',function(){

if($(dataInputDIV).css('display')=='none')

$("#dataInputDIV").slideToggle();

else if($("#gameName").val().trim()!="")

sendNameAndPasswordTo('./game/getGameKey','Query Result');

$("#dataInputDIV input[value='Register']").hide();

$("#dataInputDIV input[value='Query Key']").show();

});

$("input[value='Download Library']").on('click',function(){

window.open("http://140.124.181.7:1221/GameRound/EzWebGameLib.rar");

});

$("#dataInputDIV input[value='Register']").on('click',function(){

sendNameAndPasswordTo('./game/create','Register Result');

});

$("#dataInputDIV input[value='Query Key']").on('click',function(){

sendNameAndPasswordTo('./game/getGameKey','Query Result');

});

function sendNameAndPasswordTo(baseURL,resultModalTitle)

{

var name = $("#gameName").val().trim();

var password = $("#password").val().trim();

if(name==""||password=="")

{

$('#myModal .modal-title').text('Error');

$('#myModal .modal-body').html("Please complete game name and password");

$('#myModal').modal();

}

else

{

$.ajax({

url: baseURL+'/'+name+'/'+password

}).done(function(data) {

$('#myModal .modal-title').text(resultModalTitle);

$('#myModal .modal-body').html(data);

$('#myModal').modal();

});

}

}

</script>

Member/login.php

<span class="label label-primary">&nbsp Account&nbsp</span>

<input type="text" id="account" class="form-control" placeholder="Enter your account">

<br />

<span class="label label-primary">Password</span>

<input type="password" id="password" class="form-control" placeholder="Enter your password">

<br />

<input id="login" type="button" class="btn btn-primary" value="Login"/>

<script>

window.onblur = window.close;

window.onbeforeunload = function(){$.ajax({url: "<?=base\_url('/user/cancelLogin/'.$lKey)?>",})};

(function(){

$("#account").focus();

if(opener != null && opener.EzWebGame!=null)

{

$("#login").click(function(){

var account = $("#account").val();

var password = $("#password").val();

if(account==""||password=="")

{

alert("account or password empty");

return false;

}

$.ajax({

url: "<?=base\_url('/user/login/')?>"+"/<?php echo $lKey?>"+'/'+account+'/'+password,

}).done(function(data) {

window.close();

data = JSON.parse(data);

opener.EzWebGame.cKey(data);

});

});

}

else

{

$("#login").click(function(){

alert('coming soon');

});

}

})()

</script>

Member/signup.php

<span class="label label-primary">&nbsp&nbsp&nbsp Name&nbsp&nbsp&nbsp</span>

<input type="text" id="name" class="form-control" placeholder="Enter your name">

<br />

<span class="label label-primary">&nbsp Account&nbsp</span>

<input type="text" id="account" class="form-control" placeholder="Enter your account">

<br />

<span class="label label-primary">Password</span>

<input type="password" id="password" class="form-control" placeholder="Enter your password">

<br />

<input type="button" class="btn btn-primary" value="Sign UP!"/>

<br />

<br />

<script>

$(".header ul li").each(function(){$(this).removeClass('active')});

$(".header ul li:eq(2)").addClass('active');

$("input[value='Sign UP!']").click(function(){

var name = $("#name").val().trim();

var account = $("#account").val().trim();

var password = $("#password").val().trim();

if(name==""||account==""||password=="")

{

$('#myModal .modal-title').text('Error');

$('#myModal .modal-body').html("Please complete game name, account, and password");

$('#myModal').modal();

}

else

{

$.ajax({

url: '../user/signup'+'/'+name+'/'+account+'/'+password

}).done(function(data) {

$('#myModal .modal-title').text('SignUp Result');

$('#myModal .modal-body').html(data);

$('#myModal').modal();

});

}

});

</script>

* EzWebChecker Script

script/canvas.js

turnToLoginLayer();

//turnToRoomLayer();

//turnToGameLayer();

function turnToLoginLayer()

{

initLayer();

loginLayer.show().draw();

}

function initLayer()

{

stage.getLayers().each(function(layer){layer.hide()});

backgroundLayer.show();

}

function turnToLobbyLayer()

{

initLayer();

lobbyLayer.show().draw();

}

function turnToRoomLayer()

{

initLayer();

roomLayer.show().draw();

}

function turnToGameLayer()

{

initLayer();

chessBoardLayer.show().draw();

gameLayer.show().draw();

gameEffectLayer.show().draw();

}

function refreshRoomInfoLayer(room)

{

roomInfoLayer.removeChildren();

roomInfoLayer.add(newLabel(0,10,room.title,stage.getWidth()-10,30));

roomInfoLayer.add(newLabel(stage.getWidth()-210,60,'MaxPlayer: '+room.max,200,20));

roomInfoLayer.show().draw();

}

function refreshPlayersInRoomInfoLayer(players)

{

var posX = [100,260,420];

var pics = ['./red.jpg','./yellow.jpg','green.jpg'];

if(roomPlayerLayer)roomPlayerLayer.clear();

roomPlayerLayer = new Kinetic.Layer();

for(var i=0; i < players.length; i++)

{

newPlayerZone(posX[i],150,150,150,players[i].userName,pics[i],roomPlayerLayer);

}

//roomPlayerLayer.show().draw();

stage.add(roomPlayerLayer);

}

function refreshLobbyRooms(roomInfos)

{

var x = 100,y=100,width=stage.getWidth()-y-10,height=30;

if(lobbyRoomsLayer)lobbyRoomsLayer.clear();

lobbyRoomsLayer = new Kinetic.Layer();

for(var i =0;i<roomInfos.length;i++)

{

newLobbyRoomZone(x,y,width,height,roomInfos[i],lobbyRoomsLayer);

y+=50;

}

stage.add(lobbyRoomsLayer);

}

function clickChecker(point)

{

if(point.player>=0 && EzWebGame.isTurnSelf() && EzWebGame.getUserTurnOrder() == point.player)

{

EzWebGame.doStep(JSON.stringify({"Method":"Select", "Point":{x:point.x,y:point.y}}));

selectedChecker = point;

displaySelectCheckerEffect(point);

displayPlaceToMove(point);

}

}

function displayPlaceToMove(point)

{

findAndRecordOnBoard(point);

showPlaceToMoveEffect();

}

function showPlaceToMoveEffect()

{

var moveDirection = getMoveDirection();

for(var i in chessPoints)

{

if(!chessPoints[i].computed)continue;

var p = gridXyToXy(chessPoints[i]);

var c = new Kinetic.Circle({

x: p.x,

y: p.y,

radius: 15,

fill: 'white',

stroke: 'black',

//strokeWidth: 1,

});

c.attrs.point = chessPoints[i];

c.on('mouseover',function(evt){

showPreviewPath(selectedChecker,evt.targetNode.attrs.point);

});

c.on('mouseout',function(){

gameEffectLayer.find('#previewLine').remove();

gameEffectLayer.clear().draw();

})

if(EzWebGame.isTurnSelf())

{

c.on('click',function(evt){

var point = evt.targetNode.attrs.point;

EzWebGame.doStep(JSON.stringify({"Method":"MoveTo", "Point":{x:point.x,y:point.y}}));

moveCheckerTo(point,function(){

//判定獲勝

if(isWin(EzWebGame.getUserTurnOrder(EzWebGame.getUserId())))

{//告知其他人 自己獲勝遊戲

EzWebGame.finishGame();

}

else

{//結束回合

EzWebGame.finishStep();

}

});

});

}

gameEffectLayer.add(c);

delete chessPoints[i].computed;

}

gameEffectLayer.clear();

gameEffectLayer.draw();

}

function showPreviewPath(startPoint,finalPoint)

{

var path = findPath(startPoint,finalPoint);

var points = getLinePointsArray(path);

var line = new Kinetic.Line({

points: points,

stroke: userCheckerColors[EzWebGame.getNowTurnUserOrder()],

strokeWidth: 5,

lineCap: 'round',

lineJoin: 'round',

dashArray: [10, 10],

id:'previewLine'

});

gameEffectLayer.find('#previewLine').remove();

gameEffectLayer.add(line);

gameEffectLayer.clear().draw();

}

function getLinePointsArray(arrayPoint)

{

var points = [];

for(var i =0;i<arrayPoint.length;i++)

{

var p = gridXyToXy(arrayPoint[i]);

points.push(p.x);

points.push(p.y);

}

return points;

}

function displaySelectCheckerEffect(point)

{

function cancel(){

EzWebGame.doStep(JSON.stringify({"Method":"CancelSelect", "Point":{x:point.x,y:point.y}}));

}

greyBackgroundEffect(gameEffectLayer,cancel,194);

gameEffectLayer.add(new Kinetic.Circle(point.circle));

gameEffectLayer.clear().draw();

}

function moveCheckerTo(point,callBack)

{

gameEffectLayer.removeChildren();

var path = findPath(selectedChecker,point);

var points = getLinePointsArray(path);

var line = new Kinetic.Line({

points: points,

//stroke: userCheckerColors[selectedChecker.player],

stroke:'black',

strokeWidth: 5,

lineCap: 'round',

lineJoin: 'round',

id:'pathLine'

});

gameEffectLayer.add(line);

var anim = new Kinetic.Animation(function(frame) {

var period = 2000;

if(frame.time>period)

{

anim.stop();

point.player = selectedChecker.player;

point.circle.setFill(selectedChecker.circle.attrs.fill);

selectedChecker.player = -1;

selectedChecker.circle.attrs.fill='';

selectedChecker = null;

gameLayer.clear().draw();

if(callBack)callBack();

}

}, gameEffectLayer);

anim.start();

gameEffectLayer.clear().draw();

}

function moveCheckerTo2(point)

{

gameEffectLayer.removeChildren();

var path = findPath(selectedChecker,point);

var points = getLinePointsArray(path);

points.shift();

points.shift();

var p = gridXyToXy(selectedChecker);

var c = new Kinetic.Circle({

x: p.x,

y: p.y,

radius: 15,

fill: userCheckerColors[selectedChecker.player],

stroke: 'black',

//strokeWidth: 1,

});

gameEffectLayer.add(c);

var anim = new Kinetic.Animation(function(frame) {

var period = 5000;

if(points.length<=1)

{

anim.stop();

point.player = selectedChecker.player;

point.circle.setFill(selectedChecker.circle.attrs.fill);

selectedChecker.player = -1;

selectedChecker.circle.attrs.fill='';

selectedChecker = null;

gameLayer.clear().draw();

gameEffectLayer.clear().draw();

if(callBack)callBack();

}

else

{

var cx = c.getX();

var cy = c.getY();

var x = points[0];

var y = points[1];

var m = (y-cy)/(x-cx);

var rate = frame /5000 \* (y>cy?1:-1);

var type = x>cx?"right":"left";

c.setX(cx+rate);

c.setY(cy+m\*rate);

if(type=="right" && cx>x || type=="left" && cx<=x)

{

x = points.shift();

y = points.shift();

}

}

}, gameEffectLayer);

gameEffectLayer.clear().draw();

anim.start();

}

function initGame(player)

{

var pics = ['./red.jpg','./yellow.jpg','green.jpg'];

var y = 20;

gameLayer.removeChildren();

for(var i=0;i<player.length;i++)

{

newPlayerZone(20,y,150,80,player[i].userName,pics[i],gameLayer);

gameLayer.add(newNowPlayerEffect(20-2,y-4,150+4,110+4,'blue',player[i].userId));

y+=130;

}

stage.find('.playerZoneEffect').each(function(a){a.hide()});

chessPoints = getInitChessPoint();

test();

}

function displayTurns(player)

{

showMessage(player.userName+"' turn.");

stage.find('.playerZoneEffect').each(function(a){a.hide()});

stage.find('#'+player.userId)[0].show();

gameLayer.clear().draw();

}

function showMessage(message)

{

var labelWidth = stage.getWidth();

var turnLabel = newLabel(-labelWidth,stage.getHeight()/2,message,labelWidth,50);

gameEffectLayer.add(turnLabel);

gameEffectLayer.clear().draw();

var anim = new Kinetic.Animation(function(frame) {

var period = 5000;

var scale = Math.cos(frame.time \* 2 \* Math.PI / period) \* 10+1;

var x = turnLabel.getX()+scale;

if(turnLabel.getX()+turnLabel.getWidth()<=10&&frame.time>period/2||frame.time>period/3\*4)

{

this.stop();

gameEffectLayer.removeChildren();

gameEffectLayer.clear();

}

turnLabel.setX(x);

}, gameEffectLayer);

anim.start();

}

function greyBackgroundEffect(layer,callBack,x)

{

var selectEffectLayer = new Kinetic.Rect({

x: x,

y: 0,

fill: 'black',

width: stage.getWidth(),

height: stage.getHeight(),

opacity :0.3

});

selectEffectLayer.on('click',function(){

layer.removeChildren();

layer.clear().draw();

if(callBack)callBack();

});

gameEffectLayer.add(selectEffectLayer);

}

function showCheckMessage(message,callBack)

{

var textField = newButton(0,stage.getHeight()/2,message,stage.getWidth(),30);

textField.on('click',function(){

gameEffectLayer.removeChildren();

gameEffectLayer.clear().draw();

if(callBack)callBack();

})

greyBackgroundEffect(gameEffectLayer,callBack);

gameEffectLayer.add(textField);

gameEffectLayer.clear().draw();

}

function isWin(playerNumber)

{

var defineWin = [];

//定義紅色領地0, TipPoint{2,2} move down & leftup

defineWin[0] = {TipPoint:{x:2,y:2}, dLeft:"down", dRight:"leftup"};

//defineWin[0] = {TipPoint:{x:-2,y:-2}, dLeft:"up", dRight:"rightdown"};

//定義黃色領地1, TipPoint{2,-4} move leftup & right

defineWin[1] = {TipPoint:{x:2,y:-4}, dLeft:"leftup", dRight:"right"};

//defineWin[1] = {TipPoint:{x:-2,y:4}, dLeft:"rightdown", dRight:"left"};

//定義綠色領地2, TipPoint{-4,-2} move right & down

defineWin[2] = {TipPoint:{x:-4,y:2}, dLeft:"right", dRight:"down"};

//defineWin[2] = {TipPoint:{x:4,y:-2}, dLeft:"left", dRight:"up"};

var check = defineWin[playerNumber];

return checkPlayer(check.TipPoint, check.dLeft, check.dRight, playerNumber);

function checkPlayer(TipPoint, leftDirection, rightDirection, playerNumber)

{

for(var i=0; i<3; i++)

{

for(var j=0; j<=i; j++)

{

var tempPoint = {x:TipPoint.x, y:TipPoint.y};

//move leftDirection

for(var k=0; k<i; k++)

{

tempPoint = getMovePoint(leftDirection, tempPoint);

}

//move rightDirection

for(var k=0; k<j; k++)

{

tempPoint = getMovePoint(rightDirection, tempPoint);

}

tempPoint = getPoint(tempPoint, chessPoints);

if(tempPoint.player != playerNumber)

return false;

}

}

return true;

}

}

script/chessBoard.js

var chessBoardCenter = {x:393.5,y:207};

var chessBoardGridEdge = 45;

var chessPoints;

var userCheckerColors = ["red","yellow","green"];

var selectedChecker;

function getInitChessPoint(number)

{

console.log("PlayerNum: " + number);

var point = {};

var moveDirection = getMoveDirection();

//定義紅色領地0 & player 0 所在之地, TipPoint{-2,-2} move up & rightdown

setPlayerAndDomain({x:-2,y:-2},"up","rightdown",0,0);

//定義綠色領地2, TipPoint{-4,-2} move right & down

setPlayerAndDomain({x:-4,y:2}, "right","down",-1,2);

//定義黃色領地1 & player 1 所在之地, TipPoint{-2,4} move rightdown & left

setPlayerAndDomain({x:-2,y:4}, "rightdown","left",1,1);

//定義紅色領地0, TipPoint{2,2} move down & leftup

setPlayerAndDomain({x:2,y:2}, "down","leftup",-1,0);

//定義綠色領地2 & player 2 所在之地, TipPoint{4,-2} move left & up

setPlayerAndDomain({x:4,y:-2}, "left","up",number==3?2:-1,2);

//定義黃色領地1, TipPoint{2,-4} move leftup & right

setPlayerAndDomain({x:2,y:-4}, "leftup","right",-1,1);

//定義中間無人區塊

var CenterPoint = {x:0,y:0};

for(var i=0; i<6; i++)

{

tempPoint = getMovePoint(moveDirection[i],CenterPoint);

tempPoint.player=-1;

tempPoint.domain=[-1];

point[tempPoint.x+","+tempPoint.y] = tempPoint;

}

CenterPoint.player=-1;

CenterPoint.domain=[-1];

point[CenterPoint.x+","+CenterPoint.y] = CenterPoint;

return point;

function setPlayerAndDomain(TipPoint, leftDirection, rightDirection, playerNumber, domain)

{

for(var i=0; i<3; i++)

{

for(var j=0; j<=i; j++)

{

var tempPoint = {x:TipPoint.x, y:TipPoint.y};

//move leftDirection

for(var k=0; k<i; k++)

{

tempPoint = getMovePoint(leftDirection, tempPoint);

}

//move rightDirection

for(var k=0; k<j; k++)

{

tempPoint = getMovePoint(rightDirection, tempPoint);

}

tempPoint = point[tempPoint.x+","+tempPoint.y] == undefined ? tempPoint : point[tempPoint.x+","+tempPoint.y];

tempPoint.player = tempPoint.player == undefined || tempPoint.player == -1 ? playerNumber : tempPoint.player;

//tempPoint.domain = tempPoint.domain == undefined ? {x:domain} : {x:tempPoint.domain.x,y:domain};

if(tempPoint.domain)

tempPoint.domain.push(domain);

else

tempPoint.domain = [domain];

//console.log(i + ", " + j + ": ");console.log(tempPoint);

point[tempPoint.x+","+tempPoint.y] = tempPoint;

}

}

}

}

function getPoint(point, points)

{

return points[point.x+","+point.y];

}

function gridXyToXy(point)

{

var x = (point.x+(point.y)/2) \*chessBoardGridEdge + chessBoardCenter.x;;

var y = -(point.y\*Math.sqrt(3)/2)\*chessBoardGridEdge + chessBoardCenter.y;

return {x:x,y:y};

}

function findAndRecordOnBoard(point)

{

var jumpStack = [];

var sureStack = [];

var moveDirection = getMoveDirection();

var tChessPoints = cloneChessPoint(chessPoints, ["x", "y", "player", "domain"]);

var selectedPoint = getPoint(point, chessPoints);

//console.log(tChessPoints);

var chessPoint;

for(var i=0; i<6; i++)

{// 對選到的點 往六個方向探詢 是否可以走

chessPoint = getPoint(getMovePoint(moveDirection[i], point), tChessPoints);

if(!chessPoint)

{

continue;

}

else if(chessPoint.player < 0)

{

sureStack.push(chessPoint);

}

}

jumpStack.push(getPoint(point, tChessPoints));

//console.log(jumpStack);

jump\_recursive(jumpStack, sureStack, moveDirection, tChessPoints);

//console.log(sureStack);

for(var i in sureStack)

{

tPoint = sureStack[i];

chessPoint = getPoint(tPoint, chessPoints);

if(isPointDomainBelongPlayer(chessPoint, selectedPoint.player))

{

chessPoint.computed = true;

}

}

}

function jump\_recursive(jumpStack, sureStack, moveDirection, tChessPoints)

{

if(jumpStack.length == 0)

{// 不用繼續遞迴

return;

}

//console.log("Start jump\_recursive");

var nextJumpStack = [];

var chessPoint;

for(var i in jumpStack)

{

tPoint = jumpStack[i];

for(var j in moveDirection)

{

var thisRoundMoveDirection = moveDirection[j];

if(tPoint[thisRoundMoveDirection] == true)

{// 此點此方向已經跳過

continue;

}

chessPoint = getPoint(getMovePoint(thisRoundMoveDirection, tPoint), tChessPoints);

if(!(chessPoint && chessPoint.player >= 0))

{// 確認此方向是否可以跳躍

continue;

}

chessPoint = getPoint(getMovePoint(thisRoundMoveDirection, tPoint, true), tChessPoints);

//console.log(chessPoint);

if(!chessPoint)

{

continue;

}

else if(chessPoint.player < 0)

{

tPoint[thisRoundMoveDirection] = true;

nextJumpStack.push(chessPoint);

sureStack.push(chessPoint);

}

}

}

//console.log("Next Round Jump");

//console.log(nextJumpStack);

jump\_recursive(nextJumpStack, sureStack, moveDirection, tChessPoints);

}

function findPath(startPoint,finalPoint)

{

var jumpStack = [];

var path = [];

var moveDirection = getMoveDirection();

var tChessPoints = cloneChessPoint(chessPoints, ["x", "y", "player", "domain"]);

var chessPoint;

startPoint = cloneOnePoint(startPoint);

finalPoint = cloneOnePoint(finalPoint);

for(var i=0; i<6; i++)

{

chessPoint = getPoint(getMovePoint(moveDirection[i], startPoint), tChessPoints);

if(!chessPoint)

{

continue;

}

else if(chessPoint.x==finalPoint.x&&chessPoint.y==finalPoint.y)

{

path.push(startPoint);

path.push(finalPoint);

return path;

}

chessPoint.mark = true;

}

return findPath\_recursive(startPoint,finalPoint,path,tChessPoints);

}

function findPath\_recursive(startPoint,finalPoint,path,tChessPoints)

{

var result = null;

var moveDirection = getMoveDirection();

path = clonePointsArray(path);

path.push(startPoint);

getPoint(startPoint,tChessPoints).mark = true;

for(var i=0; i<6; i++)

{

var middleChecker = getPoint(getMovePoint(moveDirection[i], startPoint),tChessPoints);

if(!middleChecker||middleChecker.player<0)continue;

var moveP = getMovePoint(moveDirection[i], startPoint,true)

chessPoint = getPoint(moveP, tChessPoints);

if(!chessPoint || chessPoint.mark || chessPoint.player >=0)

{

continue;

}

else if(chessPoint.x==finalPoint.x&&chessPoint.y==finalPoint.y)

{

path.push(finalPoint);

return path;

}

else

{

chessPoint.mark = true;

result = findPath\_recursive(chessPoint,finalPoint,path,tChessPoints);

if(result!=null)return result;

}

}

return result;

}

function isPointDomainBelongPlayer(point, playerNumber)

{

if(point.domain[0] == -1)

return true;

for(var i in point.domain)

if(point.domain[i] == playerNumber)

return true;

return false;

}

function getMovePoint(direction, point, isJump)

{

move = isJump == true ? 2 : 1;

switch(direction)

{

case 'up'://0

return {x:point.x,y:point.y+move};

break;

case 'down'://3

return {x:point.x,y:point.y-move};

break;

case 'left'://3

return {x:point.x-move,y:point.y};

break;

case 'right'://1

return {x:point.x+move,y:point.y};

break;

case 'leftup'://5

return {x:point.x-move,y:point.y+move};

break;

case 'rightdown'://2

return {x:point.x+move,y:point.y-move};

break;

}

}

function getMoveDirection()

{

return ["up", "right", "rightdown", "down", "left", "leftup"];

}

function clonePointsArray(array)

{

for(var i=0;i<array.length;i++)

{

delete array[i].circle;

}

return JSON.parse(JSON.stringify(array));

}

function cloneOnePoint(point)

{

var temp = point.circle;

point.circle='';

var obj = JSON.parse(JSON.stringify(point));

point.circle = temp;

return obj;

}

function cloneChessPoint(source, tag)

{

var destination = {};

for(var i in source)

{

destination[i] = {};

for (var property in tag)

{

destination[i][tag[property]] = deepCopy(source[i][tag[property]]);

}

}

return destination;

}

function deepCopy(obj)

{

if(obj == null || typeof(obj) !== 'object'){

return obj;

}

//make sure the returned object has the same prototype as the original

var ret = obj.constructor();

for(var key in obj)

{

ret[key] = deepCopy(obj[key]);

}

return ret;

}

script/ezWebChecker.js

var EzWebEvent = (function(){

function loginSuccessEvent()

{

turnToLobbyLayer();

EzWebGame.listRoomInfos();

}

function loginFailEvent(errorMsg)

{

alert(errorMsg);

}

function logoutEvent()

{

turnToLoginLayer();

}

function listRoomDoneEvent(roomInfos)

{

//console.log(JSON.stringify(roomInfos));

refreshLobbyRooms(roomInfos);

}

function createdRoomEvent(roomInfo)

{

turnToRoomLayer();

refreshRoomInfoLayer(roomInfo.Room);

refreshPlayersInRoomInfoLayer(roomInfo.Players);

}

function leavedRoomEvent()

{

turnToLobbyLayer();

EzWebGame.listRoomInfos();

}

function getRoomChangedEvent(roomInfo)

{

//refreshRoomInfoLayer(roomInfo.Room);

//console.log(roomInfo);

refreshPlayersInRoomInfoLayer(roomInfo.Players);

}

function roomJoinedEvent(roomInfo)

{

turnToRoomLayer();

refreshRoomInfoLayer(roomInfo.Room);

refreshPlayersInRoomInfoLayer(roomInfo.Players);

}

function roomStartdEvent(roomInfo)

{

turnToGameLayer();

initGame(roomInfo.Players);

}

function changeTurnEvent(player)

{

console.log(player.userName + "[" + player.userId + "]");

displayTurns(player);

}

function receiveStepEvent(instruction)

{

var step = JSON.parse(instruction.replace("\\\"","\""));

switch(step.Method)

{

case 'Select':

selectedChecker = getPoint(step.Point, chessPoints);

displaySelectCheckerEffect(selectedChecker);

displayPlaceToMove(selectedChecker);

break;

case 'MoveTo':

moveCheckerTo(getPoint(step.Point, chessPoints));

break;

case 'CancelSelect':

gameEffectLayer.removeChildren();

gameEffectLayer.clear().draw();

break;

}

}

function receiveCheckWinEvent(arriveId)

{

EzWebGame.replyCheck(isWin(EzWebGame.getUserTurnOrder(arriveId)));

}

function someoneFinishGameEvent(user)

{

showMessage(user.userName + " Finish Game");

}

function gameFinishEvent(rank)

{

console.debug(rank);

var messages = [];

var maxLength = 0;

for(var i=0;i<rank.length;i++)

{

var message = "#" + (i+1) + "\t\t" + rank[i].userName;

messages.push(message);

if(message.length > maxLength)

maxLength = message.length;

}

// 讓所有訊息等長

for(var i=0; i<messages.length;i++)

{

var message = messages[i];

for(var j=0;j<maxLength-message.length;j++)

{

messages[i] += " ";

}

}

showCheckMessage(messages.join("\n"), backToRoom);

function backToRoom()

{

turnToRoomLayer();

roomInfoLayer.show();

roomPlayerLayer.show();

}

}

return {

// 登入遊戲

onLoginSuccess: loginSuccessEvent,

onLoginFail: loginFailEvent,

onLogout: logoutEvent,

// 大廳中

onListRoomDone: listRoomDoneEvent,

onRoomCreated: createdRoomEvent,

// 房間中

onRoomLeaved: leavedRoomEvent,

onRoomChanged: getRoomChangedEvent,

onRoomJoined: roomJoinedEvent,

onRoomStarted: roomStartdEvent,

// 遊戲中

onChangeTrun: changeTurnEvent,

onReceiveStep: receiveStepEvent,

onCheckWin: receiveCheckWinEvent,

onAccomplishGame: someoneFinishGameEvent,

onGameFinish: gameFinishEvent

}

})();

function c\_createGameRoom()

{

var title = prompt('enter room title','Welcome');

var maxPlayer = prompt('enter maxPlayer','3');

if(isNaN(maxPlayer))maxPlayer=3;

EzWebGame.createGameRoom(title,2,maxPlayer);

}

script/ezWebGame.js

var EzWebGame = (function(){

var EzWebGameURL = "http://127.0.0.1/GameRound/";

var LocalLoginURL = "./login.php";

var TurnId = 0;

var gamePlayers = [];//遊戲開始的玩家

var request = (function(){

var queue = [];

var Key = '';

var LastKey = '';

var eventSSE;

function receiveKey(key)

{

if(queue.length > 0)

{

var node = queue.shift();

node.requestObject.url += key;

$.ajax(node.requestObject).done(node.doneRequest);

}

else

{

LastKey = key;

Key = key;

}

}

function send(requestObject, doneRequest)

{

if(Key != '')

{

requestObject.url += Key;

Key = '';

$.ajax(requestObject).done(doneRequest);

}

else

{

queue.push({"requestObject":requestObject, "doneRequest":doneRequest});

}

}

function clean()

{

Key = '';

LastKey = '';

}

function openSSE()

{

eventSSE = new EventSource(EzWebGameURL + 'Event/Request/' + LastKey);

console.log('openRequest()');

eventSSE.onmessage = function (event) {

console.debug(event.data);

events = JSON.parse(event.data).Events;

//console.log(new Date() + ": " + event.data);

for(var i=0; i<events.length ; i++)

{

switch(events[i]["Type"])

{

case 'RefreshRoomList':

EzWebEventCalls(EzWebEvent.onListRoomDone, events[i]["Param"]);

break;

case 'roomChanged':

EzWebEventCalls(EzWebEvent.onRoomChanged, events[i]["Param"]);

break;

case 'start':

gamePlayers = events[i]["Param"].Players;

EzWebEventCalls(EzWebEvent.onRoomStarted, events[i]["Param"]);

break;

case 'turn':

var param = JSON.parse(events[i]["Param"].replace("\\\"","\""));

TurnId = param.userId;

EzWebEventCalls(EzWebEvent.onChangeTrun, param);

break;

case 'message':

EzWebEventCalls(EzWebEvent.onReceiveStep, events[i]["Param"]);

break;

case 'checkWin':

var param = JSON.parse(events[i]["Param"].replace("\\\"","\""));

EzWebEventCalls(EzWebEvent.onCheckWin, param.WinnerId);

break;

case 'arrived':

console.debug(events[i]["Param"]);

if(events[i]["Param"]!="Cheat")

{

var param = JSON.parse(events[i]["Param"].replace("\\\"","\""));

EzWebEventCalls(EzWebEvent.onAccomplishGame, param);

}

break;

case 'rank':

var param = JSON.parse(events[i]["Param"].replace("\\\"","\""));

EzWebEventCalls(EzWebEvent.onGameFinish, param);

break;

default:

console.log(new Date() + "=> " + events[i]["Type"] + ':' + events[i]["Param"]);

}

}

};

eventSSE.onerror = function (event) {

console.log('eventSSE Error');

event.target.close();

openRequest();

}

}

function closeSSE()

{

eventSSE.close();

console.log('User Close Request');

}

function getId()

{

var infos = LastKey.split("\_");

return infos[1];

}

return {

receiveKey: receiveKey,

send: send,

clean: clean,

openSSE: openSSE,

closeSSE: closeSSE,

getUserId: getId

}

})();

function login()

{

$.ajax({

url: LocalLoginURL

}).done(function(data) {

console.log(data);

eval(data);

});

}

function logout()

{

var requestObject = {

url: EzWebGameURL + "user/logout/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

request.clean();

closeRequest()

EzWebEventCalls(EzWebEvent.onLogout);

}

}

function listRooms()

{

var requestObject = {

url: EzWebGameURL + "Room/ListRoomInfos/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

data = JSON.parse(data);

request.receiveKey(data.cKey);

EzWebEventCalls(EzWebEvent.onListRoomDone, data.Room);

}

}

function createRoom(title,minPlayer,maxPlayer)

{

var requestObject = {

url: EzWebGameURL + "Room/Create/" + title + "/" + minPlayer + "/" + maxPlayer + "/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

TurnId = 0;

if(data.Wrong)alert(data.Wrong);

else

{

closeRequest();

openRequest();

var object = new Array();

EzWebEventCalls(EzWebEvent.onRoomCreated, {"Room":data.Room[0], "Players":data.Players});

}

}

}

function leaveRoom()

{

var requestObject = {

url: EzWebGameURL + "Room/Leave/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

closeRequest();

openRequest();

EzWebEventCalls(EzWebEvent.onRoomLeaved);

}

}

}

function joinRoom(roomId)

{

var requestObject = {

url: EzWebGameURL + "Room/join/" +roomId+"/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

TurnId = 0;

if(data.Wrong)alert(data.Wrong);

else

{

closeRequest();

openRequest();

EzWebEventCalls(EzWebEvent.onRoomJoined,{"Room":data.Room[0], "Players":data.Players});

}

}

}

function onReceiveFirstCKey(data)

{

if(data.Wrong!=null)

{

EzWebEventCalls(EzWebEvent.onLoginFail, data.Wrong)

}

else

{

request.receiveKey(data.cKey);

EzWebGame.openSSE();

EzWebEventCalls(EzWebEvent.onLoginSuccess)

}

}

function openRequest()

{

request.openSSE();

}

function closeRequest()

{

request.closeSSE();

}

function startRoom()

{

var requestObject = {

url: EzWebGameURL + "Exec/Start/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

EzWebEventCalls(EzWebEvent.onRoomStarted, {"Players":data.Players});

gamePlayers = data.Players;

}

}

}

function getUserId()

{

return request.getUserId();

}

function getUserTurnOrder(userId)

{

userId = userId || request.getUserId();

for(var order in gamePlayers)

if(gamePlayers[order].userId == userId)

return order;

}

function getNowTurnUserOrder()

{

for(var order in gamePlayers)

if(gamePlayers[order].userId == TurnId)

return order;

}

function isTurnSelf()

{

return TurnId == getUserId();

}

function EzWebEventCalls(onEzWebEvent, data)

{

if(onEzWebEvent)

{

console.log(onEzWebEvent.name + ": " + JSON.stringify(data));

onEzWebEvent(data);

}

else

{

console.log("Not Found This Event: " + onEzWebEvent.toString());

}

}

function nextRound()

{

var requestObject = {

url: EzWebGameURL + "Exec/NextRound/"

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

TurnId = data.NextRound.userId;

EzWebEventCalls(EzWebEvent.onChangeTrun, data.NextRound);

}

}

}

function sendMessage(instruction)

{

var requestObject = {

url: EzWebGameURL + "Exec/SendMessage/",

type: "POST",

data: {message: instruction}

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

console.log("Send: " + instruction);

}

}

}

function arriveFinalStep()

{

var requestObject = {

url: EzWebGameURL + "Exec/ArriveFinalStep/",

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

console.log("Inform the Player, I Won");

}

}

}

function replyCheck(isWin)

{

var requestObject = {

url: EzWebGameURL + "Exec/Reply/" + isWin + "/",

};

request.send(requestObject, doneRequest);

function doneRequest(data)

{

console.debug(data);

data = JSON.parse(data);

request.receiveKey(data.cKey);

if(data.Wrong)alert(data.Wrong);

else

{

console.log("Reply The Player is or isn't Win");

}

}

}

return {

// Prototype

cKey: onReceiveFirstCKey,

openSSE: openRequest,

isTurnSelf: isTurnSelf,

getNowTurnUserOrder:getNowTurnUserOrder,

getUserTurnOrder:getUserTurnOrder,

getUserId:getUserId,

// User

login: login,

logout: logout,

// Game

listRoomInfos: listRooms,

// Room

createGameRoom: createRoom,

leaveGameRoom: leaveRoom,

joinGameRoom: joinRoom,

startGameRoom: startRoom,

// Exec

doStep: sendMessage,

finishStep: nextRound,

finishGame: arriveFinalStep,

replyCheck: replyCheck

}

})();

script/uiComponent.js

function newLabel(px,py,Text,Width,labelFontSize)

{

if(!labelFontSize)labelFontSize=20;

var label = new Kinetic.Label({

x: px,

y: py,

opacity: 0.75,

});

label.add(new Kinetic.Tag({

fill: 'black',

lineJoin: 'round',

shadowColor: 'black',

shadowBlur: 0,

shadowOffset: 5,

shadowOpacity: 0.5,

width:Width,

}));

label.add(new Kinetic.Text({

text: Text,

fontSize: labelFontSize,

padding: 5,

fill: 'white',

align:'center',

width:Width,

}));

return label;

}

function newButton(px,py,buttonText,Width,labelFontSize)

{

if(!labelFontSize)labelFontSize=20;

var label = newLabel(px,py,buttonText,Width,labelFontSize);

label.on('mouseover',function(){

this.getTag().setFill('rgb(100,100,100)');

this.getLayer().draw();

})

label.on('mouseout',function(){

this.getTag().setFill('black');

this.getLayer().draw();

})

return label;

}

function newText(px,py,Text,FontSize,color)

{

if(!FontSize)FontSize=20;

if(!color)color='rgb(60,60,60)';

var simpleText = new Kinetic.Text({

x: px,

y: py,

text: Text,

fontSize: FontSize,

fill: color

});

return simpleText;

}

function newNowPlayerEffect(px,py,Width,Height,color,id)

{

return new Kinetic.Tag({

x:px,

y:py,

stroke: color,

strokeWidth: 5,

width:Width,

height:Height,

id:id,

name:'playerZoneEffect'

});

}

function newImage(X,Y,Width,Height,Src,layer,onLoadFunc)

{

var imageObj = new Image();

imageObj.onload = function() {

var image = new Kinetic.Image({

x: X,

y: Y,

image: imageObj,

width: Width,

height: Height

});

layer.add(image);

layer.draw();

if(onLoadFunc)onLoadFunc(image);

}

imageObj.src = Src;

}

function newPlayerZone(X,Y,Width,Height,PlayerName,Src,layer)

{

var shortSide = Width>Height?Height:Width;

var label = new Kinetic.Label({

x: X,

y: Y,

});

label.add(new Kinetic.Tag({

fill: 'white',

lineJoin: 'round',

shadowColor: 'black',

shadowBlur: 0,

shadowOffset: 5,

shadowOpacity: 0.5,

width:Width,

height:Height

}));

layer.add(label).add(newLabel(X,Y+shortSide,PlayerName,Width,20));

newImage(X+(Width-shortSide)/2,Y,shortSide,shortSide,Src,layer);

}

function newLobbyRoomZone(X,Y,Width,Height,RoomInfo,layer)

{

var labelFontSize = 20;

var group = new Kinetic.Group({

x: X,

y: Y,

opacity: 0.75,

});

var tag = new Kinetic.Tag({

fill: 'black',

lineJoin: 'round',

shadowColor: 'black',

shadowBlur: 0,

shadowOffset: 5,

shadowOpacity: 0.5,

width:Width-Height,

height:Height,

pointerDirection: 'right',

pointerWidth: Height/2,

pointerHeight: Height,

x:Height/2,

});

var triangle = new Kinetic.Shape({

drawFunc: function(context) {

context.beginPath();

context.moveTo(0, 0);

context.lineTo(Height/2, Height/2);

context.lineTo(0, Height);

context.lineTo(Height/2, Height);

context.lineTo(Height/2, 0);

context.closePath();

context.fillStrokeShape(this);

},

fill: 'black',

shadowColor: 'black',

shadowBlur: 0,

shadowOffset: 5,

shadowOpacity: 0.5,

});

group.add(tag).add(triangle);

group.add(new Kinetic.Text({

text: RoomInfo.title,

fontSize: labelFontSize,

fill: 'white',

align:'center',

width:Width,

y:(Height-labelFontSize)/2

}));

group.add(new Kinetic.Text({

text: RoomInfo.id,

fontSize: labelFontSize,

fill: 'white',

x:Height/2+15,

y:(Height-labelFontSize)/2

}));

group.add(new Kinetic.Text({

text: RoomInfo.now+'/'+RoomInfo.max,

fontSize: labelFontSize,

fill: 'white',

align:'left',

x:Width-Height/2-50,

y:(Height-labelFontSize)/2

}));

group.on('mouseover',function(){

tag.setFill('rgb(100,100,100)');

triangle.setFill('rgb(100,100,100)');

this.getLayer().draw();

})

group.on('mouseout',function(){

tag.setFill('black');

triangle.setFill('black');

this.getLayer().draw();

})

group.on('click',function(){EzWebGame.joinGameRoom(RoomInfo.id)});

layer.add(group);

}

script/uiLayer.js

var stage = new Kinetic.Stage({

container: 'container',

width: 600,

height: 410

});

var backgroundLayer = new Kinetic.Layer();

var loginLayer = new Kinetic.Layer();

var lobbyLayer = new Kinetic.Layer();

var roomLayer = new Kinetic.Layer();

var roomInfoLayer = new Kinetic.Layer();

var roomPlayerLayer = new Kinetic.Layer();

var gameLayer = new Kinetic.Layer();

var gameEffectLayer = new Kinetic.Layer();

var chessBoardLayer = new Kinetic.Layer();

var lobbyRoomsLayer;

//BcakgroundLayer

backgroundLayer.add(new Kinetic.Rect({

x: 0,

y: 0,

stroke: '#555',

strokeWidth: 5,

fill: '#ddd',

width: stage.getWidth(),

height: stage.getHeight(),

}));

//Login Layer

var loginLabel = newButton(200,stage.getHeight()/2+25,'login',200);

var registerLabel = newButton(200,stage.getHeight()/2+75,'register',200);

var ezWebCheckerLabel = newText(160,100,'EzWebChecker',50);

loginLabel.on('click',function(){EzWebGame.login()});

registerLabel.on('click',function(){window.open('http://127.0.0.1/GameRound/Member')})

loginLayer.add(loginLabel).add(ezWebCheckerLabel).add(registerLabel);

//LobbyLayer

var logoutLabel = newButton(0,100,'logout',80).on('click',function(){EzWebGame.logout();});

var createRoomLabel = newButton(0,150,'Create',80).on('click',function(){c\_createGameRoom();});

var refreshRoomListLabel = newButton(0,200,'refresh',80).on('click',function(){EzWebGame.listRoomInfos();});

lobbyLayer.add(newLabel(0,10,'Lobby',stage.getWidth()-10,45));

//roomInfoLayer.add(newLabel(stage.getWidth()-210,60,'MaxPlayer: '+room.max,200,20));

lobbyLayer.add(logoutLabel).add(refreshRoomListLabel).add(createRoomLabel);

//RoomLayer

var leaveRoomLabel = newButton(0,100,'Leave',80).on('click',function(){EzWebGame.leaveGameRoom();});

var startLabel = newButton(0,150,'Start',80).on('click',function(){EzWebGame.startGameRoom();});

roomLayer.add(leaveRoomLabel).add(startLabel);

//GameLayer

var text = newText(20,0,'');

var text2 = newText(320,50,'');

gameLayer.add(text).add(text2);

newImage(195,5,400,400,'./chess.jpg',chessBoardLayer,function(image){

image.on('mousemove', function(evt) {

//var mousePos = getMousePos(canvas, evt);

var message = 'Mouse pos: ' + evt.x + ',' + evt.y;

text.setText(message);

gameLayer.draw();

});

});

test();

function test()

{

for(var i in chessPoints)

{

var p = gridXyToXy(chessPoints[i]);

var c = new Kinetic.Circle({

x: p.x,

y: p.y,

radius: 15,

fill: userCheckerColors[chessPoints[i].player],

//stroke: chessPoints[i].player>=0?'black':'',

shadowColor:'black',

shadowOffset:3,

//strokeWidth: chessPoints[i].player>=0?2:''

});

c.attrs.point = chessPoints[i];

c.on('mousemove',function(event){

var point = event.targetNode.attrs.point;

var message = point.x+','+point.y;

text2.setText(message);

gameLayer.draw();

});

c.on('click',function(event){

clickChecker(event.targetNode.attrs.point);

})

chessPoints[i].circle = c;

gameLayer.add(c);

}

}

//Add layer to stage

stage.add(backgroundLayer).add(loginLayer).add(lobbyLayer).add(roomLayer).add(chessBoardLayer).add(gameLayer);

stage.add(roomInfoLayer).add(roomPlayerLayer).add(gameEffectLayer);

login.php

$gKey = "KlfQcRgxmNzzrjZRtH";

$EzWebGameURL = "http://127.0.0.1/GameRound/";

$getLKeyURL = $EzWebGameURL.'game/loadEzWebGameLib/'.$gKey;

$lKey = file\_get\_contents($getLKeyURL);

$loginURL = $EzWebGameURL.'member/login/'.$lKey;

echo "window.open('".$loginURL."', '', 'width=500, height=350')";

|  |  |  |
| --- | --- | --- |
| 台北科技大學資訊工程系一０二學年度實務專題 | (EzWebGame) | 學生： 陳科銘 、 謝宗廷 |