Project Plan
for
Power Struggle in Paradise

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Revision History

Date	Version	Description	Author
9/26/19	.5	First rough draft.	Melissa Hazlewood
9/27/19	1.0	First official draft.	Melissa Hazlewood, Alex McBride, Richie Ear

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1 Overview

1.1 Management Summary

Power Struggle in Paradise (PSiP) is an online, everyone-for-themselves game modeled closely after the rules of the board game *King of Tokyo*, wherein up to 6 players play to gain control of Tokyo. In PSiP, the goal is to gain control of "The Island."

While PSiP will be very similar to *King of Tokyo* (KoT) and the variety of "King of the Hill"-type games available in board, video, and childhood physical format (e.g. capture the flag), PSiP will have an entirely different theme than those currently available. By using digital representations of boards and game pieces, we can avoid the possibility that they will degrade or go missing over time. Because the game will be free to anyone, it is more accessible than video games of the same concept, like certain styles of Call of Duty. And lastly, since the game is virtual and doesn't require players to move in physical space in potentially dangerous environments or situations, there's no chance for real injury.

PSiP is a game for families, friends, or really anyone ages 8 up (as recommended by the makers of *King of Tokyo*) who can work a computer and has access to the internet, regardless of browser, operating system, or other platform specifications.

The project will deliver (over a period of approximately 2.5-3 months, costing only person-hours of work and possibly up to $100 for server hosting and domain name access) a dynamic website in which a player can play against real people or computer players using just a web browser on their computer or tablet. The interface will be graphical, with every action represented as a clearly marked button, including in-game moves as well as meta-actions like viewing stats or accessing support materials.

1.2 Gameplay

At the beginning of the game, all players start on a raft in the ocean with 10 oysters (that are your only source of food during this battle!) [life points]. The game progresses through the use of single player turns. On each turn, the current player starts by rolling six dice. They can roll twice more, keeping or discarding as many as they would like. After the third roll, the player assesses the final result of all six dice and can choose how to use them.

Rolls:

1, 2, or 3   - Gain that number of victory points

○ (pearl) - Find a pearl in one of your oysters (can be traded with the local mermaids for favor cards or to call in certain favor cards already possessed)

🐟 (fish) - Catch a fish with your bare hands and throw it at another player to knock off one of their oysters [reduce their life points]

🐚 (oyster) - Find and oyster floating in the water [increase life points, up to a maximum of 10]

The player can also trade pearls for a favor from a mermaid or for calling in certain favor cards already possessed.

Favor Cards:
There are two types of mermaids to get favors from:
- The Very Busy Mermaid (needs you to call in the favor immediately) and
- The Loyal Mermaid (will become a new member of your mermaid army and do a specific type of favor for you anytime you want, unless the card says otherwise)

Information on Favor Cards:
- Name
- Cost [in number of pearls]
- Type [Very Busy Mermaid/Loyal Mermaid]
- And an effect

Miscellaneous:
- Doubloons - 4 types of ancient pirate coins to be used with certain favor cards
- Golden dice - Found in some other floating pile of pirate booty, these golden dice can also be used with certain favor cards and have the same faces as the regular dice

If a player snags a fish, they can throw it like a boomerang at every player in the location he is not in, knocking off an oyster (reducing their life points), i.e.:

🐟 (fish):

- If you are on The Island - all players in The Ocean lose a(n) oyster/life point
- If you are in The Ocean - all players who are on The Island (max of two, one on the sand and one on the pier) lose a(n) oyster/life point

0 🐚 Oysters/Life Points as a result of a fish throw:
- If a player loses all of their oysters, they float off into the horizon to be eventually picked up by a rescue helicopter
- In other words, they lose and can no longer participate in the game (but can still watch)

Taking control of The Island:
- If no player is on The Island, the current player must swim ashore to claim their title as Emperor of the Island (for now):
- On the first turn, since no player starts the game on The Island, thrown fish can't reach anybody's oysters (no life points can be lost from a fish throw)
- A player on The Island loses control when someone's fish knocks off one of their oysters (but not if they lose an oyster because of a favor card)
- Island perks:
  +1 Victory Point upon claiming The Island
  +2 VPs if you start your turn as Emperor of the Island
- Island disadvantages:
  Can't fish for oysters (can't gain LPs), but can receive oysters from a mermaid as a favor

Fishing for Oysters (Life Points/LPs):
- In The Ocean, players can find one oyster for every dice roll with the shell symbol on it
- On The Island, shell dice rolls do nothing for the player; oysters can only be gained through mermaid favor cards
- Your pockets only fit 10 oysters

To win:
- Earn 20 Victory Points
- Be the last survivor with oyster rations
- The winner is crowned as the permanent Emperor of the Island!

2 Goals and Scope

2.1 Project Goals

Functional Goals:
1. Obtain an easy-to-remember domain name to access the game.
2. Create an identifiable and visually interesting splash screen with game title and a logo, ushering in the user to the theme of the game.
3. Create a login page with link to new player registration form.
4. Develop a tutorial for new users.
5. Add a home screen that has the game title, an image of an island, and a giant PLAY button.
6. Include a tab on the home screen to open the menu/dashboard with the player's username ("Hi, `user562`!"), links to see current stats, purchase items (e.g. skins, card decks), and see game help and tech support information.
7. Stats page with win ratio, ranks (worldwide/among friends), inventory of characters, card decks, and skins purchased, and possibly rates of receiving certain cards/dice rolls/etc.
8. Shop page with options to purchase characters, skins, and card decks.
9. Help page with a summary of game rules, tech support, FAQ, and contact information of development team for feedback or questions.
10. After clicking PLAY on the home screen, a page with options to select local, online, or hybrid types of opponents.
    a. Local - play with people nearby; post a game code for each player to enter on their own browser window; if less than 6 players add the code, allow for computer players to fill in gaps; single players must play against at least one computer player.
    b. Online - Play against a random set of 5 players around the world; computer players fill in gaps if not enough real players are online.
    c. Hybrid - Team up with your nearby friend(s) to play against people from around the world; computer players fill in gaps if not enough real players are online; local/nearby players are not actually a team, gameplay is competitive (not collaborative) between everyone.
11. After choosing opponent number and types, there should be a character selection screen. Character opacity is lowered (they get grayed out) when another player has already selected that option.

12. Main gameplay screen:
    a. Menu tab with username, stats, shop, and help links.
    b. Victory Point counter
    c. Oyster/life point counter
    d. Pearl/mermaid currency counter
    e. Favor cards available for purchasing on your turn
    f. Your available favor cards
    g. Other player information like VP value, LP value, Loyal Mermaid favor cards in play, and whether they are on The Island or in The Ocean
13. Upon your turn, dice screen should pop up with button for clicking to roll the dice. You can discard a die from your roll by clicking on it, and keep a die by leaving it alone or clicking the discarded die again. Once you click to roll again, the dice you have chosen to discard or keep cannot be changed.
14. To use a favor card, the player should be able to click the card (on their turn) and click the opponent they want to affect (if necessary). Then they would click "use" on the card to solidify their choice.
15. The order of turns should be determined randomly at the start of the game.
16. Counters should be updated automatically, with no action needed on behalf of the player, other than what is required by the game rules.
17. Stats should update automatically after each game.
18. If game is left prematurely, other players can choose to continue or quit (unless only one person or all computer players are left, in which case the game would end). For games in which the player leaves early, the stats are only updated if "quitting games early" is decided to be a stats category (undecided as of now).

Business Goals:
1. Develop the entire game before Tuesday, December 24, 2019.
2. Minimize costs to $0.

Quality Goals:
1. No broken links.
2. All buttons do what is indicated.
3. User Interface is simple, visually appealing, and easy-to-use.
4. Rendering of pages is done as instantaneously as possible (less than a second ideally).

5. Computer players try to win but are not impossible to beat with savvy strategy.
6. User data is kept private and secure.
7. Support is reliable and useful.

Constraints:
- Person-hours - with only three members on the team who are involved in a variety of other projects and tasks, work hours are limited.
- Time - the project has a hard deadline of 12/24/19.
- Development technology - we will be using Unity (a cross-platform game engine), a high-level programming language for controlling the UI and data, and a server-side language for communicating with the database, server, and other backend utilities. Each of these has their own limitations, and communication between each type of program will present its own set of challenges.
- Knowledge - the project team will be utilizing many of the development tools for the first time to build the game, so capabilities may be bound by the confines of the engineer's knowledge, imagination, and research abilities.

2.2 Project Scope

PSiP is a game modeled similarly to KoT with a different theme and will be a port of a physical board game to an online platform in order to connect the greater player community and allow new and old players to engage in an exciting and fun game. Furthermore, bring the PSiP project to life online would ensure it's perpetuity as a spiritual successor to KoT.

PSiP will use Unity in order to ensure cross-browser compatibility. To create non-copyright-violating images for use in the game's interface, Adobe Illustrator in combination with GitHub (for publishing online) will likely be used. Though not a piece of software, the board game *King of Tokyo* was the inspiration and model for this product. It has the same rules and game pieces (with thematic differences).

2.2.1 Included

See section 8 for more details on deliverables and documentation for the project.

2.2.2 Excluded

At this time, no mobile or desktop app will be available as a way to play. Certain features common to an online community will not be included either, like chat.

3 Organization

3.1 Organizational Boundaries and Interfaces

The team behind the development of this game would love to see this product to completion and wish to see this game take life on a new platform. Furthermore, members of this game's community would look forward to seeing the game be brought online and made easier for them to connect.

3.1.1 Resource Owners

Resource Owners are defined in the Resource Plan in section 5.1.

3.1.2 Receivers

Receivers are defined in the Delivery Plan in section 8.

3.1.3 Sub-contractors

Undetermined at this time. See section 6.

3.1.4 Suppliers

A Supplier is an external organization contributing to the project with an existing product (COTS = Commercial Off The Shelf) that is incorporated into a project deliverable (e.g. a database system) or used for project support (e.g. tool, equipment). Identify all external suppliers and their deliverables. State any special arrangements or procedures that will be used in contacts with the suppliers. Name contacts, if applicable

3.1.5 Cross Functions

3.1.6 Other Projects

3.2 Project Organization

We are planning to have each part necessary to building PSiP split between team members. As mentioned in section 3.2.2, there are various internal functions needed in order to complete the building of this game, and we plan to designate each function to a team member. However, the documentation and testing processes of the game will be responsibilities shared by all members of the team.

3.2.1 Project Manager

Project Manager	Anthony Giacalone
Technical Project Manager	None at this time

3.2.2 Project-Internal Functions

Since the project manager has the overall project responsibility, he /she is also responsible for the project-internal functions. But he/she can delegate the management of these functions to project team members. In this case list the functions and individuals responsible for
- UI - what the user sees; Alex (Unity)
- Controller - code that operates under the hood of the UI, connecting logic and backend data with interface features; Melissa/Richie (C++/Python/some high level language)
- Backend - server-side code to manipulate data in database and handle communication with server/host; Melissa (PHP or other server-side language)
- QA/testing - bundled code that can be run to test the intended functional goals; Alex/Melissa/Richie
- Documentation - Alex/Melissa/Richie

3.2.3 Project Team

The team working on PSiP includes:
- Melissa Hazlewood
- Alex McBride
- Richie Ear

3.2.4 Steering Committee

Steering Committee members includes:
- Melissa Hazlewood
- Alex McBride
- Richie Ear

4 Schedule and Budget

4.1 Work Breakdown Structure

The Work Breakdown Structure (WBS) is documented in [1].

4.2 Schedules and Milestones

Milestone	Description	Milestone Criteria	Planned Date
M0	Start Project	Discussion of design and implementation for the project	9/13/19
M1	Vision Document Draft	Finish a draft of the Vision Document	9/20/19
M2	Project Plan Draft	Finish a draft of the Project Plan	9/27/19
M3	Design and Documentation	Finish work on most of the project documents as outlined by the Project Manager	Incremental ~12/24/19
M4	Fundamental	Layout gameplay	10/18/19

	Gameplay Design and Structure	mechanicals in pseudocode and start on construction	
M5	Main gameplay screen UI	Finish player turn screen UI	11/8/19
M6	Integrate dice control	Add dice controls and UI	11/13/19
M7	Integrate favor cards	Add favor card mechanics and UI	11/18/19
M8	Integrate LP, VP and special counters	Finish with adding counters to the gameplay	11/22/19
M9	Design the UI for game startup and website	Establish a domain name, splash screen and login UI	12/3/19

4.3 Budget

Considering the relatively small size of the project, the projected costs of the project are also determined to be relatively low. An estimated budget of around $3,000 is likely to budgeted in this way.

Categories	Budget in US Dollars ($)			
	M0-M3	M3-M5	M5-M8	M9
Human Resources (Internal)	$100	$150	$200	$0
Human Resources (External)	$0	$0	$0	$0
Equipment	$300	$900	$300	$150
Tools	$200	$50	$50	$0
Premises	$0	$0	$0	$0
Training	$0	$0	$0	$0
Review Activities	$0	$0	$0	$0
Other	$150	$150	$150	$150

Total	$750	$1,250	$700	$300
Total Accumulated	$750	$2,000	$2,700	$3,000

A separate spreadsheet will be provided with further details for resources needed to accomplish this project [4].

4.4 Development Process

Currently under review.

4.5 Development Environment

List of methods, tools, and languages to be employed for the project:
- Unity
- Calendar
- UML
- High-level programming language to be used for the controller
- Server-side language for the backend/database/host/server communication
- Google Docs

5 Risk Management

All identified risks are documented, assessed and prioritized in the Risk Management Plan [2] by the Project Manager. The Risk Management Plan details what to do in the event of a risk to the project, including communication and responsibilities, as well as the procedure to inform stakeholders in the project by the Project Manager. Any risk is reported in the Status Reports: see section 7 under internal communications.

6 Sub-contract Management

Likely inapplicable? Probably? Unless the database or server or w/e being used would be applicable as a sub-contract.

7 Communication and Reporting

Internal Communications:

Type of Meeting	Method/Tool	Frequency/ Schedule	Information	Participants
Project Meetings	- In-class - Google Documents	Once to twice a week	Discussion of schedule, project requirements and responsibilities	Project Team
Project Planning	- Google Documents	When available	Drafting and outline project	Project Team
Status Reports	- Text/Email	When available	Project status, risks, changes in requirements, new responsibilities or rollbacks	Project Team

External Communications:

Type of Meeting	Method/Tool	Frequency/ Schedule	Information	Participants
Project Report	- In-class	Once to twice a week	Discussion with lead consultant	Project Team, Lead consultant
Planning Report	- In-class	Once to twice a week	Drafting and outline project	Project Team, Lead consultant

8 Delivery Plan

ID	Deliverable	Planned Date	Receiver
D1	Vision Document	9/20/2019	Anthony Giacalone
D2	Project Plan	9/27/2019	Anthony Giacalone
D3			

D9	Final Iteration for PSiP	~12/24/19	Anthony Giacalone

9 Quality Assurance

Project meetings and communication will serve as quality assurance, alongside ample testing of the product, PSiP. Planned documentation of the strategic processes and requested designs and implementation of the project will be delivered on time. Each step of the project is being documented along with testing of the game platform for bugs and faults. Organization and design of the project is placed as a top priority in order to complete the project in a timely manner and in turn out a product that does not differ from its intended design.

10 Configuration and Change Management

PT will have full control over changes made in implementation of PSiP software, under the guidance of the lead consultant, Athony Giacalone. PSiP will not deviate too far from the standard play of KoT. If and when changes are made they will be unanimously passed by the PT or under decision of the Project Manager with the approval of the lead consultant.

11 Security Aspects

Project information is nominally available to PT and lead consultant. Game server security will be integrated into the platform to ensure player privacy and eliminate cheating and hacking. The PT will decide what information is available for release.

Any security issues should be reported to the PT in order to assure awareness of the security problem and allow for sufficient time to fix security. Such incidents will be resolved immediately.

12 Abbreviations and Definitions

PSiP	Power Struggle in Paradise
KoT	King of Tokyo
PT	Project Team
UI	User Interface; look, feel, and functionality of the user's screen
The Island	Location on the game board with an occupancy level of one; gives the player on it 1 VP upon claiming the location and 2 VPs each subsequent turn of theirs in which they still occupy The Island
The Ocean	Location on the game board with no maximum occupancy; every player starts here
EOTI	Emperor of the Island; the player who has current control of The Island; the winner will be the final EOTI
VP	Victory Point; first to get 20 VPs wins
Oyster/LP	Life Point; the health level of the player; maximum capacity is 10; after all 10 oysters are gone, that player loses and can only watch
Favor Card	Favor cards are cards given by mermaids in exchange for a certain amount of pearls; displays name, cost, type (VBM/LM), and effect
Pearl	Mermaid currency; can be traded for a favor card from a mermaid
VBM	Very Busy Mermaid; a favor card from a VBM must be called in (used) immediately
LM	Loyal Mermaid; a favor card from a LM will stay throughout the game; the LM then joins your mermaid army for use on future turns
Fish	Fish can be caught in The Ocean (that is, the dice that land fish-side up can only be used by players in The Ocean) and thrown at all players outside of the location of the player whose turn it is, knocking off one of each of their oysters/reducing their LPs by one
Doubloon	Four types of doubloons exist that can be used in conjunction with certain favor cards
Golden dice	Golden dice are also used in conjunction with certain favor cards

13 References

1. Work Breakdown Structure
2. Risk Management Plan
3. Image of a clam (used to represent the oyster) from the Noun Project
4. Resource Management Plan