Advanced Application Development

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**King of Tokyo**

**Software Requirement Specification**

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2. **Introduction**
   1. **Purpose**

The purpose of this Document is to present a collection of proposed ideas that have presented themselves during the development of the application. This document will also provide a detailed overview of the application’s hardware and software requirements, it will also go over the user interface and core features.

* 1. **Application Overview**

The application will be a digital version of the game King of Tokyo (Ritchard Garfield, 2010), a simple board game that features both competitive and co-operative elements and dice rolling. The application will feature simple 2D graphics taken from the physical game as well as the games main features. The plot of the game centres on taking control of a monster and trying to take over the city of Tokyo, similar the old Kaiju movies that are popular in Japan, unfortunately other monsters have arrived to state their claim but there can only be one King. The players take turns rolling 6 dice to determine what actions they can take each turn, if they roll and attack symbol they could go on the offensive, or if they roll a heart they can recover lost health. Another option would be rolling the energy symbol to gain currency to buy game changing cards, or they could just roll for victory points. Last monster standing or first to 20 Victory points wins the game.

**1.3 Platform**

The application will be developed in Microsoft Visual Studios 2010 for Personal Computers (PC), the players will have to take turns using the same system.

**1.4 References**

King of Tokyo. 2010. [Board] Iello, Richard Garfield.

Iello 2010. King of Tokyo Instruction Leaflet

Figure 1: http://www.boardgamebeast.com/images/king-of-tokyo-board-game-21683303.jpg

1. **Overall Description** 
   1. **Product perspective**

The King of Tokyo application is a completely standalone and self-contained for use on PC, all data, images and other resources will be included with the source code/executable and no network connection is required. Figure 1 shows a typical set up for the game for 4 players, the application will try to mimic this as much as possible by creating a window for the main game board and each players character board.



**Figure 1: Typical 4 player game Setup**

* 1. **Product functions**
     1. **Core Features**

1. Start screen / Main menu

* Appears when Application is run, after entering the number of players and clicking the start button the character windows will spawn.
* May include a background image of the game board.

1. Player windows

* Player windows may display the Monster image
* As well as their health, victory points and energy

1. Game Board

* The game board will feature in the centre of the main window
* There will be a text box displaying whose turn it is, and a button to end the turn after the dice have been rolled.
* There will also be a button to roll the dice as well as 6 buttons above that to display the results.

1. Dice

* The game features unique dice that have 1 of 6 different symbols on each side.
* Each symbol either performs a different action or awards the player victory points if a certain combination is rolled.
* Symbols include: claw, heart, energy, 1, 2, 3.
* The player has 1 roll and 2 re-rolls and can hold any number of dice before re-rolling.
* There will also be a resolve button to apply the rolled dices results effect.

1. Cards (optional)

* During their turn players can spend energy to acquire cards.
* These cards can do a variety of things to affect the game.
* 5 cards are drawn randomly from the deck and displayed to be purchased.
* Players can pay to re-shuffle and redraw the cards

1. Turn based Gameplay

* Each player will take their turns rolling dice, performing their actions and then passing to the next player until a winner is decided.

**2.3 Operating Environment**

King of Tokyo will require a computer running a modern version of Windows Operating system.

**2.4 Design and Implementation Constraints**

There are no design or implementation constraints at this time.

**2.5 Assumptions and Dependencies**

It’s assumed that the users of the application will be familiar with the Board game version of King of Tokyo.

1. **External Interface Requirements**

**3.1 User Interfaces**

If time constraints allow it, the user interface at the start screen will feature a simple drop down menu to select the amount of players and a large button to start the game, it should also feature artwork from the board game.

The main game screen should also contain the game board as well as, large easy to read buttons for the player to interact with, these will be positioned around the edge of the screen as to not interfere with the game board.

The Player screens should also feature the artwork from the game and 3 counters to track the health, victory points and energy of the player, these will be made as easy to read as possible to avoid confusion.

**3.2 Hardware Interfaces**

The Application will run on PC’s running modern versions of the Windows operating system, the users will be able to interact with application through the use of the mouse.

**3.3 Communications Interfaces**

The game will be local multiplayer only, running on a single device shared among multiple players, and there for will not require networking implementation.

**3.4 Software Interfaces**

The application will be developed using Microsoft Visual Studios 2010 and SFML (Simple and Fast Multimedia Libraries).

1. **System Features**
   1. **Game Board**

The game board for King of Tokyo is fairly simple, it consists of a background picture and 2 spaces for a player to put their monster piece to indicate their “In Tokyo”. The second spot is for use in 5-6 player games only and as such won’t be used in the application.

* + 1. **“Inside/Outside Tokyo”**

If a player attacks from outside Tokyo they deal damage to the monsters inside Tokyo. Vice versa monsters outside Tokyo attack the monster inside Tokyo.

The first monster to roll the Claw symbol moves into Tokyo.

If a monster in Tokyo is attacked by a monster outside Tokyo they can choose to surrender Tokyo to the attacker.

If you take Tokyo you are awarded 1 Victory Points and if you start your turn in Tokyo you gain 2 Victory Points. Though in Tokyo you cannot heal.

* 1. **Player stats and Priority**

Each player will be given a monster to play at the start of the game, there is no difference between these monsters except for aesthetics.

Each monster starts out with the following:

* 10 Health
* 0 Victory Points
* 0 Energy

The players will go in turn from player 1-4, and then repeat until a winner is declared.

* 1. **Dice**

The dice in King of Tokyo are all D6 and have the following symbols.

* Claw – Player Attacks once per result.
* Heart – Player recovers 1 health per result.
* Energy – Player gains 1 energy.
* 1VP – player gains 1 Victory Point for every 3 of this result rolled.
* 2VP – Player gains 2 Victory Points for every 3 of this result rolled.
* 3VP – Player gains 3 Victory Points for every 3 of this result rolled.
  1. **Cards**

**(Note these will only be added if time permits)**

Players can spend energy to purchase cards during their turn, these cards can have various effects that can change to course of a game.

During the game only 3 cards are available at a time, these are laid out next to the board for all players to see. If a player doesn’t like the cards available or doesn’t want his opponent to gain them he can play energy to clear the store and have new cards drawn.

* 1. **Turn of Play**
* **Rolling and Rerolling the dice**

The player rolls the 6 dice, then can decide whether to hold any of the results or try for better with up to 2 rerolls.

* **Resolving the Dice**

The results of the dice are carried out, energy, health and victory points are awarded, and attacks are made.

* **Buying cards (optional)**

The player can spend their energy to buy one of the 3 cards on display or pay to discard the current selection and draw 3 new ones.

* **End your turn**

Turn passes over to the next player.

* 1. **Victory conditions**

Victory is achieved by either being the first to gain 20 Victory points or if all other monsters are defeated.

1. **Other Non-Functional Requirements**
   1. **Performance Requirements**

The performance requirements for the project refers to the response time for the game. This needs to be fast enough to allow for smooth gameplay throughout the entire application. As the application will only be using simple graphics and maths it should be easy to run on basic systems without any loss to framerate or response time.

* 1. **Safety Requirements**

The application is being developed for entertainment purposes and therefor no safety requirements are required.

* 1. **Security Requirements**

There is no personal information gathered by the application and no networking is required, therefore no security requirements are necessary.

* 1. **Project Documentation**

The Complete project documentation consists of:

* Software Requirements Specifications
* Design documentation
* Test Results
* Reflective Essay
* User guide
  1. **Source Control**

The application will have at least 2 separate backups at all times at different locations.