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System Design Report  
  
  
Donkey Kong  
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# **Introduction**

## **Purpose of the system.**

Donkey Kong is 2-D arcade game to entertain users by trying to reach finish with avoiding obstacles. Donkey Kong is very challenging game which increases pleasure of the game. On the other hand game is also very user friendly because user do not have to use many controls in other words buttons to control the player. Although, old fashioned Donkey Kong was very difficult, we reduced difficulty for first levels, and game gets more difficult in the upcoming rounds which keeps player focused on the game.

## **Design Goals**

#### Usability:

Difficult controls in software, especially in games is a big burden for a user. Therefore, usability is a big factor in software to keep user interested.

##### Ease of Use:

Our game will be designed for the user to be as user-friendly as possible. We are not going to use complicated controls, or any type of joystick to play our game. Additionally, system will provide user-friendly menu interfaces, by which player will navigate wherever he/she wants easily. We are planning to use arrows and space bar as controls.

##### Ease of Learning:

Although, Donkey Kong is well-known game, player should learn information about controls, power-ups which is vital for having the best experience from the game. If the player wants to learn all information, he/she will be able to learn from the instructions page.

#### Portability:

Portability is an important topic for any software. Therefore, for providing cross-platform portability Java® is the one of the best programming languages. Additionally, using Java® Programming language provides us wide range of users. That’s why, our software will have no problem about portability.

#### Reliability:

Our game will work without crashing and having any bugs. In addition, player will not have any unexpected inputs through the game. Reliability of the system will be tested through the development of the system to not have any bugs and crashes at the end.

#### Extendibility:

For any type of game software, adding new components, features to game as the enough time passes. Therefore, we will add some new features to the game, in other words we are going to update our game with some features. Although, our game is old-fashioned arcade game, we have some ideas to add to the game in the upcoming updates.

#### Reusability:

We are not planning to integrate any of our classes or system with other game or similar system. Therefore, we are not planning to think about reusability in the design process of the game.

#### Performance-Memory

One of our main concerns is to make our game as smooth possible in animations, effects, transitions. In other words, we are going to try keep Fps as high as possible so our player will have the best gaming experience because sudden Fps drops and freezes in games are very user-disturbing facts. Additionally, we will have few collision effects which helps us to keep memory low as possible.

### **1.3 Definitions, acronyms, and abbreviations**

#### **Abbreviations**

**FPS:** Frame per second. This abbreviation represents number of graphical frames has been prepared in 1 second.

**Cross-Platforms:** Getting same performance from the different Operating Systems including Windows, Linux, and MAC OS X.

### **References**

[1] C. Horstmann, Big java. [Place of publication not identified]: John Wiley, 2016.

[2] T. Wright, *Fundamental 2D game programming with Java*, 4th ed. Boston, MA: Cengage Learning PTR, 2015.

### **1.5 Overview**

In this section, we are tried to imply our main goals and concerns on different topics. It was clear from this section that our main goal is to make user-friendly game, and entertain player. In addition, as it is designated in this sections, we are going to focus on ease of use, efficiency, performance in the most reliable way.