



CS 319

Object-Oriented Software Engineering Design Report

Backgammon

Group 1-D

Mert Armağan Sarı
Doğukan Altay
Berkalp Yılmaz
Ömer Sakarya

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1. Introduction

1.1 Purpose of the system

Backgammon Game, all in all an implementation of traditional Backgammon game on the digital world. The game designed to achieve the old traditional feeling with the improvements of computers. The game offers, that two people can enjoy this traditional board game. Backgammon game consists of strategy and making move by predicting the future moves of your opponent, playing the game improves the decision making and making strategies of the player.

1.2 Design Goals

Before the composing the system it is crucial to identify the design goals of the system in order to clarify the qualities that our system should focus on. In this respect many of our design goals inherit from non-functional requirements of our system that are provided in analysis stage. Crucial design goals of our system are described below.

End User Criteria:

Ease of Use: The Backgammon Game ,as included in its name, is a game system. Our purpose is that, providing neat and useful design to the user in order to achieve ease of use in our System. The System consists of easy to use menus that users reach what they wanted to do in the System without lost. Also our System uses only Mouse to control. So this increases the ease of use in our System.

Ease of Learning: Although Backgammon is an old game, some young users or other users that had never seen the game before, can have troubles while playing the game. Since the game consist of bunch of rules. We offer users a “ How to Play” menu, in order to teach users how the Backgammon game proceeds. We offer visual materials to achive the best learning experience for the user in order to increase the enjoyment from the game.

Maintenance Criteria:

Extendibility: All in all, for a software, keeping it updated and adding new features and components is crucial. So we designed the Backgammon game for future updates and features. Such as new rules, new play modes, etc.

Portability: Now the world is on the Mobile Stage. So portability of a software is crucial for its sake. In order to achieve this, we are determined that the system will be implemented in Java, since its JVM provides platform independency, our system will satisfy the portability.

Modifiability: In our system it would be easy to modify the existing functionalities of the system. In order to achieve this we will minimize the coupling of the subsystems as much as possible, to avoid great impacts on system components by a desired change.

Performance Criteria:

Response Time: Since our game based on turns, response time of the System not the first issue of it. However, a slow software always bothers the user, so we are trying to achieve the lowest response time in order to achieve best experience of game for our users.

Trade Offs:

Ease Of Use and Ease of Learning vs. Functionality:

In our system we determined that player should be able to learn and use the system very easily. Therefore our design proposes that the priority of the usability is higher than functionality. In other words our system does not bother the user with complex functionalities or we do not make the user to be lost in many functionalities, in order to make our system easy to understand and use.

Performance vs. Memory:

In the Backgammon, the System consist bunch of different objects. Such as, Board, Checkers, Dice, etc. To achieve the best performance, we need to manage the usage of memory very well. Otherwise we overwhelm the memory and game performance will be dropped and in some cases game could crash.

1.3 Definitions, acronyms, and abbreviations

Abbreviations:

MVC: [2] Model View Controller

JDK: [1] Java Development Kit

JVM: [1] Java Virtual Machine

1.4. References

[1] [http://en.wikipedia.org/wiki/Java_\(programming_language\)](http://en.wikipedia.org/wiki/Java_(programming_language))

[2] *Object-Oriented Software Engineering, Using UML, Patterns, and Java, 3rd Edition*, by Bernd Bruegge and Allen H. Dutoit, Prentice-Hall, 2010, ISBN-10: 0136066836.

1.5. Overview

In this section, we represented purpose of the system, which is basically entertaining the player as much as possible, to achieve this purpose we defined our design goals in this part. Our design goals are determined according to provide the portability, ease of use, ease of learning, high performance, high maintainability.