KONTRPİYE

REQUIREMENTS ANALYSIS REPORT

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2. INTRODUCTION

Linux users have been suffering from the undeniable fact that there is no such a tolerable football game, actually any tolerable game running on linux operating systems for years.

It is also a fact that there are so many linux users expecting a game to be developed for them to be able to run on their linux operating systems. What we are on our way to do is to supply this demand of this community. The market research we have conducted proved this very distinctly, actually proved what we already knew for ourselves.

Big companies producing games do not intend to do this for several reasons. We imagine they would not want to just pass their highly-sophisticated, invested of huge-budget plus open source games to linux users in peace.

3. TEAM ORGANIZATION

3.1 Member Roles

Berker:	Leader
	Initiator
	Contact Point
Ufuk:	Process Guide
	Summarizer
Uğur:	Timekeeper
	Recorder
Hakan:	Gatekeeper
	Devil's Advocate

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3.2 Process Model

During our development of the project we will be using Throw-Away / Rapid Prototyping Model and we will give you our reasons.

We will be able to obtain feedback after releasing our first prototype from the users. What is to be pointed out here is that feedback analysis will be available for us from the first prototype till the last one. We think that feedback from the users, football game players are referred, is a big deal in our project since we will be comparing the needs of the user and our software specifications. Eventually, what they think of our game and what they would like to be in it are supposed to be in our vision. Obviously the user would know the problems better than any of us does if any, and we hope to end up with happy users at the end.

The changes cost exponentially more difficult to implement during the development. We will be trying to keep our specifications tentative during the development, so we agreed 'Throw Away Model' rather than other process models would be the most suitable in our case.

4. PROJECT DESCRIPTION

Our project is a football game that can be played only on linux operating systems. We are planning to develop a real time football game like Pro Evolution Soccer (PES) or Sensible World of Soccer. One of the main goals of our project is keeping “playing for fun” idea in front of playing with high reality and high graphics.

We have five modules that we will develop and integrate with each other during devepolment process of our project. These modules are graphics module, sound module, I/O module (keyboard and joypad), network module, and A/I module.

In the graphics module we planned to find a library that will handle creation of 3d objects (e.g ball, players, pitch and etc) and also it should handle movements of these objects. One developer of our project will work on this module.

The sound module is a simple one and we get to find a suitable library that can handle simple sound stuff will be enough for our project.

In the AI module we will design a finite state machine which can also be named as the match engine. There will be a simple rule-based AI deciding each player what to do in next step and also calculating ball movement physics and referee calls will be handled according due to the AI. Since there is a finite state machine, players, ball, referee are

constantly provided what to do in next step in a constant time. In game engine each one of field players, referee and ball will be a different thread and according to I/O and the AI their states will be updated in every 1/24 seconds.(24 frames/second) Then we will pass necessary states to graphical module and render the objects to the screen with the corresponding state info.

Possible users of our final product are it goes without saying linux users who have been expecting a prevailing game for a considerable time from all over the world. Football games are the most popular games that computer users prefer to play and our aim is to offer a fun and playable football game to Linux users. It will be an open source project and we have no expectations in terms of money and also the game can be carried on to become a more sophisticated football game by Linux community.

Our final product will be a football game that Linux users can download from internet for free and easily setup on their computers. The game could be put in repositories of Linux distributions and also could be downloaded from there.

5. USER INTERFACE

5.1 Startup Menu

This screen is the main menu that user of the game will see when he/she starts the game.

The main functionalities of this menu are as follows:

- Create or Load Profile
- Select Game Mode
- Select Team
- Select Tactics
- Select Lineup Players
- Configure Game Settings
- Play Game

5.2 Create or Load Profile

Users can create new profiles or load previously saved profiles in this menu. The properties 'Save Profile' has will be discussed later.

5.3 Select Game Mode

5.3.1 Single Player

This menu corresponds to single player mode. When user select Single Player menu, below menus are shown up immediately.

5.3.2 Multiplayer

This menu corresponds to multiplayer mode. When user select Multi Player menu, screen will break up 2 and for each player these menus will be shown in left and right part of the screen.

5.3.3 Online Multi Player

When user select Online Multi Player menu, it will be same as single player menu.

5.4 Select Team

Users could select national teams and club teams from this menu.

5.5 Select Formation

Users could select previously designed tactics from this menu for their teams.

5.6 Select Line Players

Users will select their first eleven players that will play in match from this menu. They can also do substitions during the game.

5.7 Configure Game Settings

5.7.1 Configure Sound

5.7.2 Configure Controller 1

5.7.3 Configure Controller 2

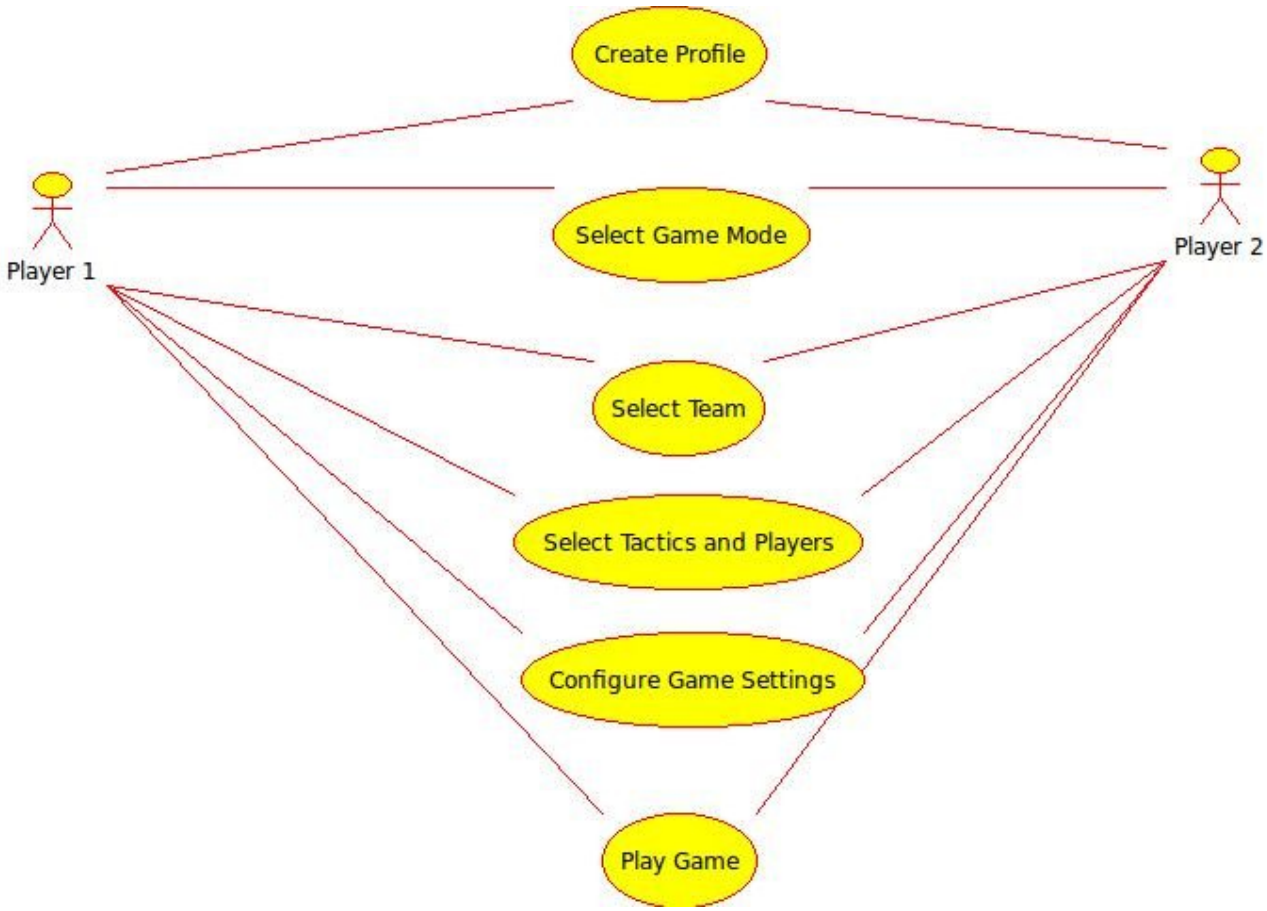
5.7.4 Select Weather

5.7.5 Select Difficulty

5.8 Play Game

After users are done with their settings, they will select play game and the match will begin immediately.

6. USE CASE DIAGRAM



7. TECHNICAL REQUIREMENTS

7.1 Software Requirements

7.1.0 Ubuntu 9.10 Operating System

Every developer of our project must have an unproblematic Ubuntu 9.10 Operating system on their personal computers as installed. We will develop our game for Linux OS's and we must have a troubleless operating system in development process.

7.1.1 3D Graphics Engine

For our project, we need a 3D graphics engine. It must be an open source library. We are trying to find appropriate library for our project nowadays cause this graphics engine must be compatible with the rest of the software.

7.1.2 Sound Library

We will most probably be using SDL_sound library in our project. It is an open source library, it is quite popular and we think it will be enough and coherent for our game.

7.1.3 Joystick Driver / Library

We will use a joystick driver or joystick wrapper library for our project. Most of gamepads do not have driver for Linux OS by default and we must use one of the libraries above to integrate gamped module with our project.

7.1.4 Development IDE

We need a development IDE like Eclipse or NetBeans. Also with these IDE, we will need an SVN server and client.

7.2 Hardware Requirements

7.2.1 Personal Computer

To develop our project, project developers must have at least 1.6 Core2 Duo CPU, 512 Mb DDR2 Ram, and Linux based PC. 40 Gb hard-drive and at least 256 Mb Graphics Card will be sufficient.

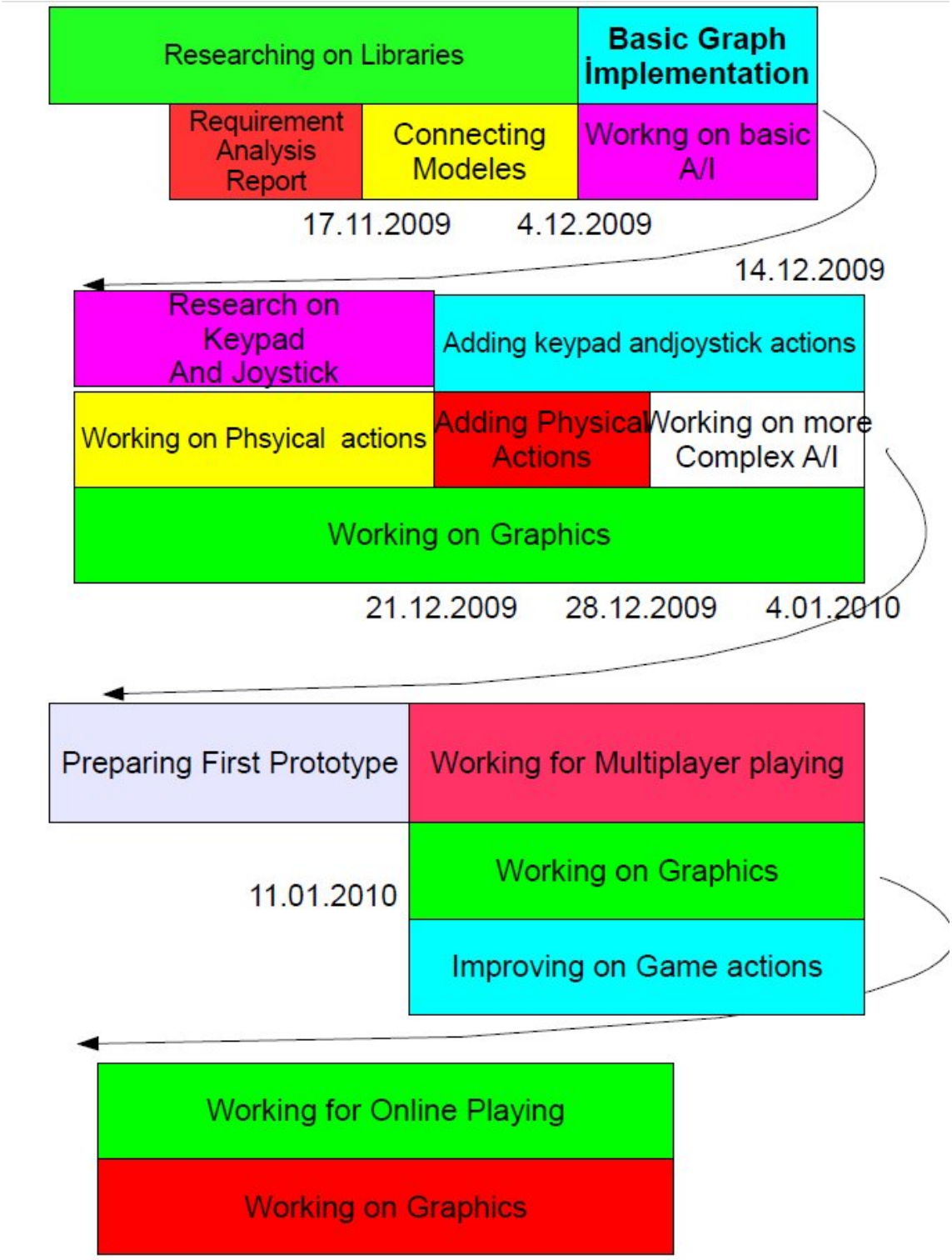
7.2.2 Sound System

To test our sound module every developer must have a sound system that will work on Linux OS unproblematic.

7.2.3 Joypad

To develop joypad module, developers of this module must have a gamepad that will work on Linux OS. Also a gamepad with analog buttons on it will do good.

8. SCHEDULE


Researching on Libraries
Basic Graph İmplementation
Requirement Analysis Report
Connecting Modeles
Workng on basic A/I
17.11.2009
4.12.2009
14.12.2009
Research on Keypad And Joystick
Adding keypad andjoystick actions
Working on Phsyical actions
Adding Physical Actions
Working on more Complex A/I
Working on Graphics
21.12.2009
28.12.2009
4.01.2010
Preparing First Prototype
Working for Multiplayer playing
11.01.2010
Working on Graphics
Improving on Game actions
Working for Online Playing
Working on Graphics

9. APPENDIX

9.1 References

AI Libraries:

http://connect.creativelabs.com/openal/default.aspx
http://icculus.org/SDL_sound/
http://www.gamedev.net/reference/list.asp?categoryid=18
Programming Game AI by Example, Mat Buckland

Graphics Libraries:

http://www.ogre3d.org/
http://irrlicht.sourceforge.net/
http://www.crystalspace3d.org/main/Main_Page
http://www.panda3d.org/
http://www.grinninglizard.com/kyra/
http://alleg.sourceforge.net/
http://www.clanlib.org/

Joystick Libraries:

http://javajoystick.sourceforge.net/
http://goldenstudios.or.id/forum/showthread.php?tid=1377

Keypad Libraries:

www.ericsbinaryworld.com/GPL_code/

Sound Libraries:

http://icculus.org/SDL_sound/