

SOFTWARE PROJECT MANAGEMENT PLAN
FOR
Games with Eye Movements

Project Name	Version	Changed By	Date	Change
Games with Eye Movements	v.1.00	Gökhan Sobay	05.12.2013	Created

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1. DESIGN STRATEGY & PRINCIPLES

Games with Eye Movements system of Team 11 is consist of three different components which are at the highest level of the software architecture. These systems are; Mobile Application, Desktop Application and Unity Games. Although Team 11 is not responsible from the algorithms which are running in the background of the controller device, controller device can also be seen as a sub-system in this system.

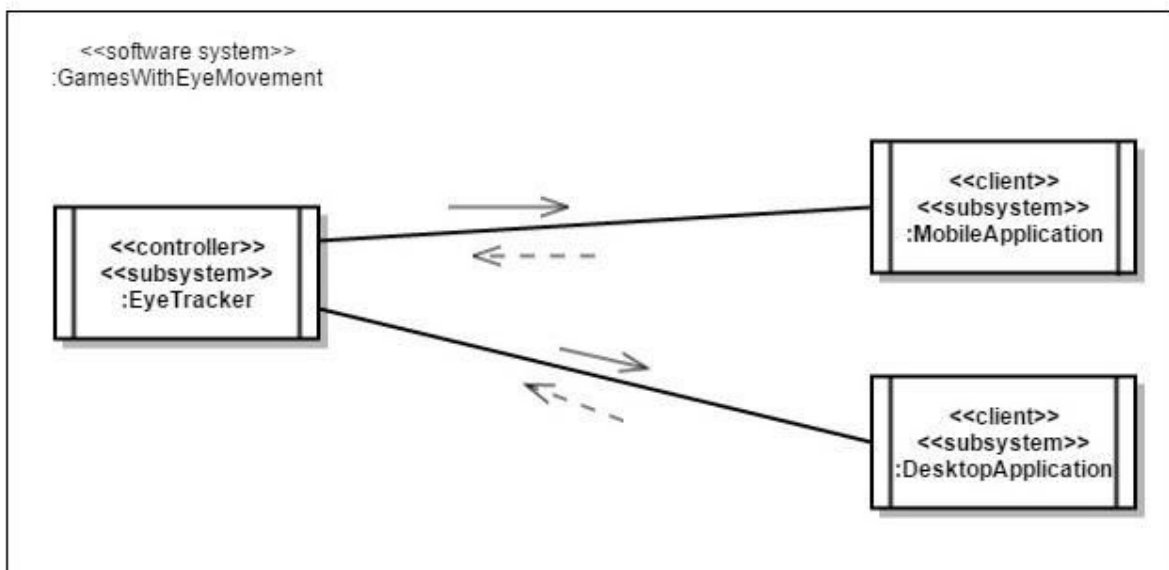


Figure 1: Software Design

- **Mobile Application:** This sub-system consists of Android version of the Games with Eye Movements system.
- **Desktop Application:** This sub-system consists of Windows Desktop Application version of the Games with Eye Movements system.
- **Unity Games:** This sub-system consists of a few games which are written in the Unity Game Engine.

When the system is investigated more deeply, these components will be handled by object-oriented decomposition to form the structure of the sub-systems. All sub-systems will be dissociated into different objects.

2. PROCESSING & CONTROL

Games with the Eye Movements system's processing model is concurrent because our sub-systems are communicating with each other actively. The System will be developed at the basis of data which are coming from the controller device (Eye Tracker). Also, the controller device will work as a checker which checks whether the user is keen on the game or not. If the user is not looking at the identified area of the screen (game screen) or the user went out of the range of the controller device, the System will automatically pause the game until the user comes back and/or looks at the identified area of the game screen. When this occurs, the System will count back from three and unpause the game.

3. COTS IMPLEMENTATION

Tool	Version
Unity	4.5
Eclipse Android Developer Tools	23.0.4
Microsoft Visual Studio	2013
Asana	N/A
GitHub	N/A
Slack	N/A
Android SDK	24.0.1
Tobii EyeX SDK	0.32
Applause	N/A
Ranorex	5.0.3
Git	1.9.4
Windows OS	8.1
MySQL	5.6.21
MonoDevelop	5.5.4
Java	8.25
TeamGantt	N/A

Figure 2: Tools and Versions

The COTS products that will affect the design process of the system are listed below:

- **Tobii Eye Tracker Engine:** It will play a key role in interaction between controller device (eye tracker) and the whole system.
- **Unity Game Engine:** Unity Game Engine is a platform which is not well known by any of Team 11 members. Learning Unity could be a serious time consuming task for the members.
- **Tobii EyeX SDK:** Tobii firm is still publishing the beta version of the EyeX SDK. These publishing are happening very often and each published beta version of the SDK is including dramatical changes. This could force Team 11 to change and test the source code more than expected.
- **MonoDevelop:** It is a customized open source integrated development environment in Unity game engine. It combines the operations of a text editor with different debugging options. It provides development build and script debugging options for your target platform.

4. NON-FUNCTIONAL & QUALITY REQUIREMENTS

- **Usability**

Due to our survey topic is “usability in games”, usability is very vital for our project. Usability improves and eases human computer interaction. It increases learnability. Because of these reasons, we will attach great importance to making a more user friendly interface while designing and implementing our project.

- **Platform Compatibility**

Games with Eye Movements system will be compatible with Windows 7/8 OS and Android (depends on the devices).

- **Performance**

The main issue of the performance case for our project is controller device's inside performance which Team 11 could not handle with.

5. SOFTWARE ARCHITECTURE DESIGN (HIGH-LEVEL)

Games with Eye Movements system is structured both as Mobile and Windows games and these games use eye movements or eye gaze of the player as input with the help of the controller device (eye tracker).

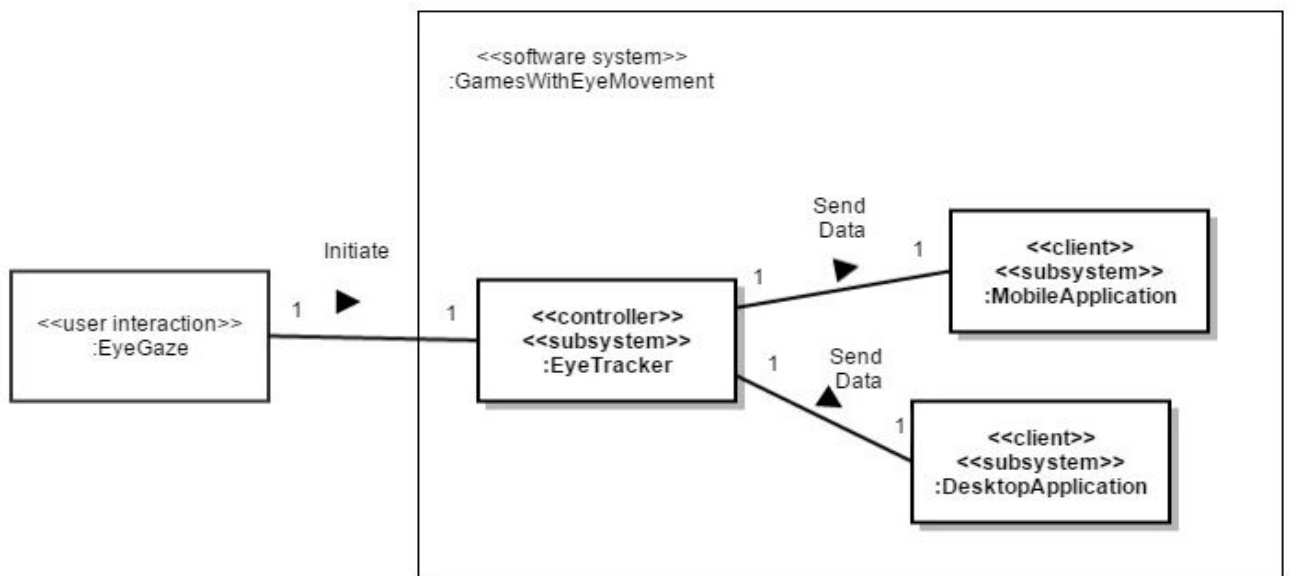


Figure 3: High-level Class Diagram

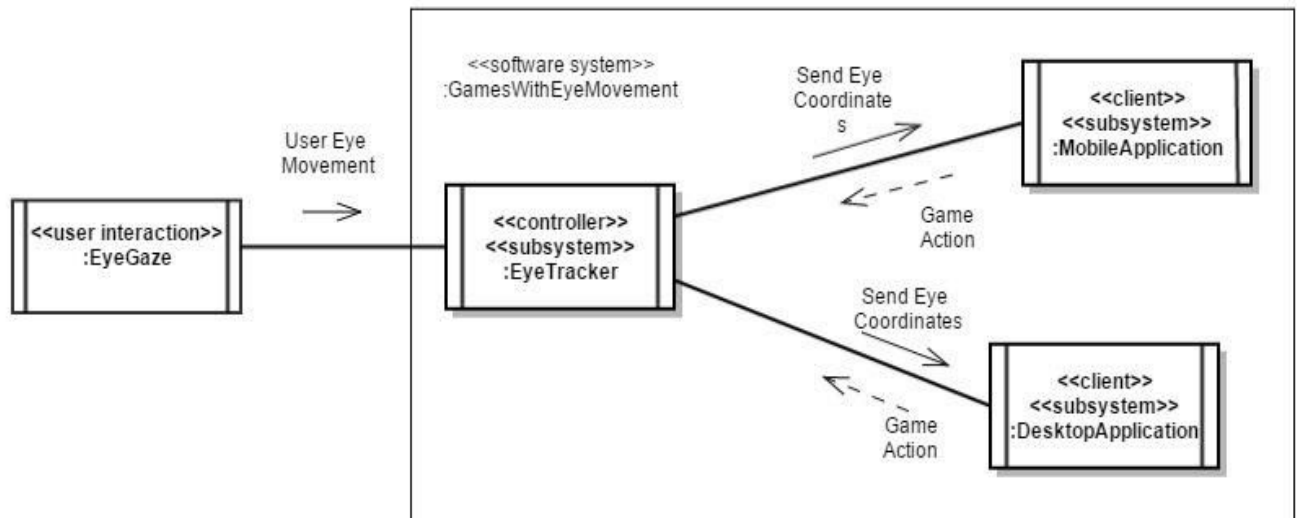


Figure 4: High-level Communication Diagram

6. SUBSYSTEM INTERFACE DESIGN

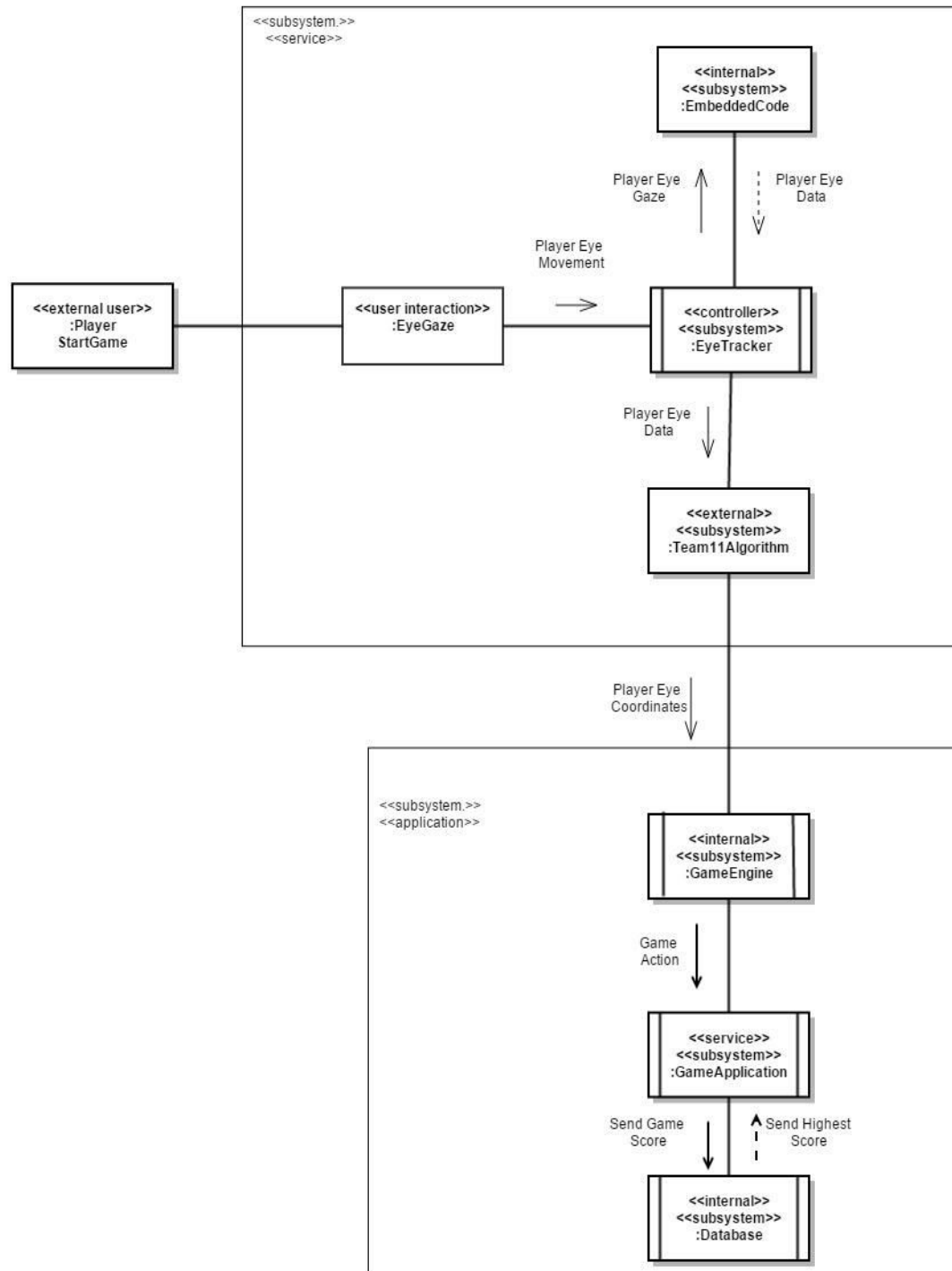


Figure 5: Sub-system Interface Design

7. PHYSICAL DESIGN

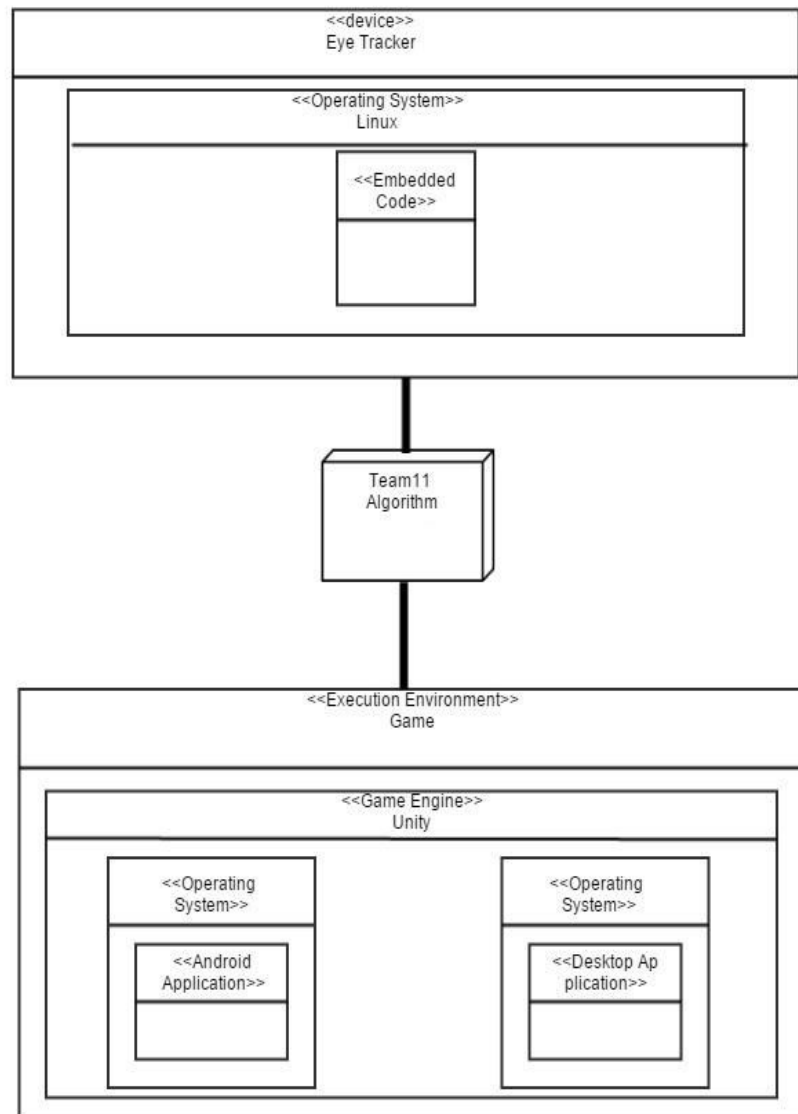


Figure 6: Physical Design