Multiplayer Platform Game

Group 19

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Project Overview Document

The aim of this project is to create a multiplayer platform game. Traditionally, platform games like the Super Mario or Mega Man series are singleplayer experiences. Our aim is to introduce an element of competition to the traditional platform game formula, letting up to four players race to the end of a level. The game will have the classic 2D gameplay of old platform games, but the graphics will be in 3D. The graphical style of the game will be colorful with cartoony characters and environments.

Who are the users and what problem does the system solve for them?

Our intended user base consists of male and female users in the age range 12-26. One might argue against the possibility of targeting both a male and a female audience, but our approach is not to exclusively cater to men or women—rather, our aim is not to alienate either gender. Nintendo has succeeded in doing this in numerous titles, with characters and settings that are neither aimed directly at males nor females and can be appreciated by both. In the game Mario Kart, for example, players can choose to play as a princess or a hulking gorilla— characters possesing overtly feminine and masculine traits respectively—or more gender neutral characters like a mushroom or a cute dinosaur.

The game should be easy to pick up and play so that inexperienced players can enjoy it. At the same time the game should also be enjoyable in the long term, making it attractive to more experienced players.

The main uses of the system

The main uses of the system is to entertain the user. The game is supposed to be easy to pick up and enjoyable for both beginners and frequent users. The game is meant to be played with friends in a living room setting, with a typical session lasting for about 60 minutes.

Usage narratives:

> Kalle is hosting a party at his house. His friend Bob suggest they play our game and invites Alice to join. Kalle and Bob play the game frequently. Alice has never played the game before and is not an experienced video game player, but the concept and controls are simple so she picks it up relatively quickly. Kalle wins and Bob comes in second. Even though Alice lost she is eager to play again since she enjoyed the game and thinks she could perform a lot better next time. During the game the excited participants attracted the attention of the other guests who are now eager to try the game as well.

> Christoffer has invited some of his friends over to watch a movie he's rented, but the movie turns out to be lackluster and they decide to stop watching and play our game instead. Christoffer and his friends play the game regularly and use advanced tactics and techniques. Even though they've played the game for a long time they still enjoy it because they feel they're still learning new things.

The context/environment in which the system is to be used

The game is going to be playable on a consumer Xbox 360 using the functionality granted by joining the XNA Creators' Club, or on a Windows XP machine, with Xbox 360 gamepads. This is possible since XNA projects, with some minor modifications, will run on both Xbox 360 and Windows XP. It is reasonable to assume that the Xbox 360 version will be played on both high- and low definition televisions.

The scope of the system

Topic:	In:	Out:
Local multiplayer	X	
Network multiplayer		X
Level editor	X	
User-friendly level editor		X
AI opponents		X
Cross-platform compatability		X
3D graphics	X	
Balance testing		X
Original music	X	

We decided to focus on implementing only local multiplayer for two reasons: First, network multiplayer does not fit the purpose of the game. Second, as of now XNA does not support networking of any kind. It would be possible to use other networking libraries to implement network multiplayer on Windows XP, but since the only library we can use on the Xbox 360 is XNA we would not be able to provide this service on both platforms.

To be able to work efficently we plan to make a rudimentary level editor for use within the team. Some games come with easy-to-use level editors intended for the users, but we decided that implementing such an editor would be beyond the scope of this project.

We decided against including AI opponents for solitaire play, since the aim of the project is to provide an enjoyable multiplayer experience.

The game will not be playable on any other platforms other than Windows XP and Xbox 360, so Linux and OSX users are out of luck.

We will use 3D graphics since we decided that drawing and animating characters in a high enough level of detail to be suffcent for high-definition displays would be far too time-consuming. The cartoon-style characters do not need to be highly detailed and thus will not be as time consuming to model as characters in more realistic games.

Many developers of multiplayer games go to great lengths trying to ensure that no single strategy or technique is superior to other alternatives. We decided against this kind of extensive balance testing since it would be a very time-consuming task.

We would also like to have our own music in the game, but if time becomes too much of an issue we have the option of using Creative Commons*-licensed music instead.

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The main factors that need to be taken in to account when designing and building the system

As previously stated, the game needs to be easy to pick up and play, even if the user is not an experienced console or PC gamer. Thus the controls need to be kept simple and the basic gameplay concept must be easy to grasp.

Since we don't want to alienate more competetive players, luck should not be a major factor in the outcome of a match. By the same token, even though we have decided not to perform extensive balance testing, we should try to make the game balanced.

The Xbox 360 outputs at a native resolution of 1280 x 720, something that needs to be considered when designing graphics routines and making graphical content.

Since up to four players share the same screen we need to devise a method for making the onscreen action readable while at the same time keeping all of the player characters visible.

Our only input device is the Xbox 360 gamepad, and its advantages and limitations need to be taken into account. For example, the directional pad on the Xbox 360 is notorious for its lack of responsiveness.

We must keep in mind that the performance we get on our Windows XP machines will not necessarily reflect the performance we will get on the Xbox 360. This is due to the fact that the Xbox 360 is not as well suited to running managed code as a Windows XP machine. Out of all the machines we will use in development, the code will probably run slowest on the Xbox 360.

Technologies and Risks

XNA, C# – Both Oskar and Christoffer have experience with using XNA and C#, having worked on several XNA projects. Martin and Misael have experience in C#, but no previous XNA experience. However, using the comprehensive documentation bundled with XNA they should be able to pick it up quickly.

Xbox 360 gamepads will be used for development, however, we only have guaranteed access to the two gamepads owned by Martin. We know of several people that would probably be willing to lend us gamepads for testing the game with three or four players, so this will hopefully not present a problem.

We plan on using the Farseer physics engine, a simple engine for rudimentary physics simulations in a 2D plane. However, the goal is not to have realistic physics throughout the game; our assumption, and reason for using the engine, is that integrating Farseer will save us time. However, none of the team members have previous experience using Farseer, but there are a number of tutorials on the Internet which should smooth out the learning curve.

No one in the group is experienced in the field of 3D modeling, which might present a problem since we've decided to use 3D graphics. However, we hope to sidestep this issue somewhat by using cartoony graphics, which need not be as detailed as those in a more realistic game.

This will probably be the most ambitious software project—games or otherwise—that any of the group members have ever worked on. This will undoubtedly present both a huge organizational and structural challenge for the group.

We will use a concurrent versioning system to store and synchronize the code base. None of us have ever used a CVS before.