Title: Report on NotMario

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*What is NotMario*

NotMario is a 3 level iOS platform game in the same vein of Super Mario and Mutant Mudds. The player must transverse a map before the timer runs out and avoiding hazards. The player starts off with a time, which isn’t long enough to “speed run” the map so they need to collect time from 3 boxes scattered throughout the map. The player has 3 lives and if they loss all lives then they must restart the game.

*Motivation for NotMario*

I have always wanted to develop video games. While in college I decided to pick the games development stream so it was natural for me to pick a game. This allowed me to use my 3 years experience to develop a game that would work well. I also took inspiration from my gaming experience, both on handheld devices and console and incorporate gaming do’s and don’t.

*Methodologies*

I used a style of agile development called scrum. Day one I had to decide on the style of game I wanted to develop. I went through several tutorials on various types of games and decided on developing a platformer.

Following this I set out a general development plan. Using the tutorial “[Sprite Kit Tutorial: How to Make a Platform Game Like Super Mario Brothers](http://www.raywenderlich.com/62049/sprite-kit-tutorial-make-platform-game-like-super-mario-brothers-part-1)” by Ray Wenderlich as a starting point, I picked a different feature to develop as part of each sprint. I would develop and test the feature (e.g. shooting) and analyse whether it works.

Once I got the basics covered and removed the features that would not be implemented I moved onto level design. I designed a level then tested it check if it was possible to defeat it (an undefeatable game is a gaming don’t). Then I tested all the levels together as a complete gaming, changing the layout as needed.

*Original Idea*

Originally I was going to develop a game based on the “Metal Slug” games. This included shooting enemies and jumping over objects. However this idea was soon discarded and a more Mario-esque game was developed.

*Difficulties*

One of the difficulties I had was with physicsBodies. Since I was developing a simple physics engine, in theory I could add a physicsBody to different objects (player, enemies, projectiles) to calculate when two objects collide. However once I attached the physicBody to any object, it would behave erratically so it couldn’t be used in the game. This lead to a major redesign of the game as well as changing the goal and style of game.

Another difficultly I had during development was the placing of objects not on the screen. This idea was then scraped.

*Future Development*

There are a number of features that if I had time (or in the future) I would like to implement:

* More levels which would get gradually more difficult as the game progresses.
* Having a difficulty setting which increases/decreases the starting time depending on how difficult the player wants it to be
* Checkpoints. In a game of only 3 levels having checkpoints did not make sense. However having many levels with increasing difficulties would require checkpoints.
* Integration with the Game Centre to share times.
* An iPad version.
* Enemies, shooting and collision detection. Expanding the game would appeal to me as a programmer/developer and as a gamer.
* Improve the GUI especially the labels. Make the label change when pressed.

*Technologies*

The game is developed using Apple’s own framework, SpriteKit. Sprite Kit is for making 2D games that comes built-in to iOS 7. It has sprite support, support videos, filters, and masking, and an integrated physics library.

I used an application called Tiled for creating the maps. It allows quick design of levels and you can use multiple sprite sheets/tile sets.

*SpriteKit vs Cocos2d*

I had to decide between using either SpriteKit or using cocos2d. I decided to use SpirteKit for a number of reasons. First I wanted to develop an application using Apple’s own framework. Second SpriteKit is a relatively new framework so it was interesting to see how the gaming scene is changing. Third Cocos2d is a new language so I want

*External Resources used*

**Sounds**

* Sarah Loh
* Stephen Walsh
* Freesounds.org
* Ray Wenderlich

**Sprite sheets, tile sets and images**

* Mario Fan Games Galaxy
* jDaster64
* Ray Wenderlich