

# The Case of the Steam Princess



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Report 14 on the work of Week 14

December 7, 2010

# *Application Development Section*

## **Project Concept Proposal**

### **Purpose:**

The purpose of this project is to be an enjoyable action adventure game for players of any age. An action adventure game is a game where a player plays a character that moves around a pre-set areas and does tasks related to the overall storyline, while at the same time fights enemies. The game will be engaging for the players and will provide a suitable storyline for the players to follow.

### **Context:**

The context that the project intends to address are the idea that there is a limited supply of games based in a steam-punk universe. A steam-punk themed universe is one in which technology evolved in a way that everything is steam powered. The amount of games set in a universe such as this is low so the opportunity of this game spreading the idea of this genre is increased.

### **Goals:**

The primary benefits and goals of the proposed project and how this project is intended to address the need/opportunity just described. The goals of this project are to become a completed game with a flowing storyline that goes in line with the overall setting of the story. The other goal is to spread the genre of steam-punk to different people and to increase the belief that it is a suitable setting for a story/game.

### **Audience:**

The attended audience for the project is people of any age able to play the game. The more specific audience is the fans of the steam-punk genre that have not seen many steam-punk based action adventure games.

### **Functionality:**

- A interactive game with a deep plot
- A combat system that deals with the player verses one or more enemies
- Attributes for the character which are the following. Strength, Health, Speed, Level and Endurance
- Multiple levels that is distinct from each other in style.

## Milieu

[Remnants of Skystone](#) – An action adventure steam punk online game. Some advantages this game has are that it is an online multiplayer game which could increase playability. The length of the game also is an advantage because it increases the replay ability. Disadvantages would be a lack of storyline. There is a small storyline which does not involve the player's character, so there is a lack of connection with the game. *(Updated 10/18/2010 to include hyperlink to games website)*

## Novelty

There are many Flash games on the internet, but not many are based in the genre of steam punk. The Project is set in this setting to be attributed in a genre that has an underground fan base but is not represented enough in the mainstream market.

## Resources: (updated 12/7/10 to update resources)

Adobe Flash CS4 - This is the main platform The case of the Steam Princess will be created on. I will be using the programming language ActionScript 3.0.

ActionScript 3.0 – A scripting language used in conjunction with Adobe Flash used to create interactive media.

Mappy – A tileset program used to generate xml files that contain an array of arrays that represent a specific level.

<http://www.8bitrocket.com/2008/7/2/Tutorial-AS3-The-basics-of-tile-sheet-animation-or-blitting/> - This tutorial helped the project by supplying source code, and a guide to animate tilesets.

<http://www.kongregate.com/games/Moly/shootorial-1-actionscript-3?acomplete=actionscri> – This site and tutorial supplied the code for the key class.

<http://www.kirupa.com/> - The helpful people of this site helped by supplying tips and suggestions.

<http://charas-project.net/resources.php?wa=0&lang=en&area=2&offset=5&howmany=10&fsearch=> - the tileset that the hero uses is from this site. Created by lonewolf, used by his permission.

<http://www.lostgarden.com/> - background tileset from this site. It is open source.

## Challenges:

The Challenges that is anticipated in the project's development is the ability to make the game as lengthy as it is needed to complete the attended storyline. The limits of the ability to code a new programming language in a limited amount of time will challenge the amount of goals. Having to program many different levels and events will make it difficult to do in the limited amount of time. The battle system will be difficult due to their needing to be slight artificial intelligence in the enemies.

## Measures:

- The game has graphics and the character is able to move around and interact with the map.
- The storyline covers every aspect of the plot and there are no known potholes.
- There are multiple levels with ability to move in-between them.
- There is a battle system that includes one or more enemies.

## Future Extensions:

- Possible extensions could include unique enemies such as boss battles.
- A longer and more in-depth storyline.

- An inventory system that deals with the user to be able to select different items to wear that would increase different attributes.

## Inspiration

### Motivation:

I selected this because I am a big video game player and would like to learn what it takes to make a successful game. I have played literally hundreds of games on the internet all flash based and I have not seen more than a handful that were steam punk and had a storyline.

### Profession:

My dream is to be a video game designer/programmer. I would hope this project would help me reach that dream. This project will help me learn the necessary logic that is needed to code a successful game. I hope when I get done with this project I am one step closer to being a successful programmer.

### Vision and Scope:

The genre of Steam punk is a growing sensation around the world and when “The Case of the Steam Princess” is released it is hoped to spread across the internet and increase the popularity of the Steam punk genre. It is hoped that “The Case of the Steam Princess” will become a sensation across the internet and become widely known to websites such as [Kongregate](#), and [Armor Games](#).

The concept of “The Case of the Steam Princess” will have the main character walking around a predetermined map. The character will do tasks relative to the storyline which will progress the character through the game. The major features of the will include battle between himself and other enemies, and multiple levels for the character to traverse throughout the game. There will be specific plot events that will occur throughout game play that will further develop the storyline. If time permits there will be character inventory that will allow the main character to hold items that will be vital to the storyline. There will be character stats which will allow him to do different things during battle, which may include dealing extra damage or receiving less damage.

## Software Requirements Specifications

**Functional Requirements:** *(updated as of 12/7/10 to update requirements.)*

**1. The Software must have a movable main character.**

- Evaluation Method: The main character will be movable with the keys ‘W, S, A, D’.
- Dependency: None
- Priority: essential

**2. The Software must have a complete storyline.**

- Evaluation Method: The storyline has a rising action, climax and falling action.
- Dependency: None
- Priority: essential

3. **The Software must have a visual environment.** *(Updated September 20<sup>th</sup> 2010 for clarity changed the word level to environment)*
  - Evaluation Method: The map will be shown when the game is started.
  - Dependency: None
  - Priority: essential
  
4. **The Software must have enemies on the environment.** *(Updated September 20<sup>th</sup> 2010 for clarity changed the word level to environment)*
  - Evaluation Method: When the game is loaded enemies are loaded upon the map
  - Dependency: FR3
  - Priority: essential
  
5. **The Software must have multiple environments for the user to traverse.** *(Updated September 20<sup>th</sup> 2010 for clarity changed the word level to environment)*
  - Evaluation Method: When the main character moves to the end of the environment it will load the next one.
  - Dependency: FR3
  - Priority: essential
  
6. **The Software must have Interaction between the main character and the enemy.**
  - Evaluation Method: When the character moves near the enemy, it will move towards the character and try to attack it.
  - Dependency: FD1, FD3, FD4
  - Priority: essential
  
7. **The Software must have interaction between the Character and the environment.** *(Updated September 20<sup>th</sup> 2010 for clarity Changed the word level to environment)*
  - Evaluation Method: The user may not move over specific places in the environment
  - Dependency: FD1, FD3
  - Priority: essential

## **Non-Functional Requirements**

1. **The Software must run on Windows XP**
  - Evaluation Method: The game will be able to run on a computer using Windows XP.
  - Dependency: None
  - Priority: essential
  
2. **The Software must run on Firefox**

- Evaluation Method: The game will load when a user loads it with Firefox.
- Dependency: None
- Priority: high

## System Design and Architecture

*(Revised 12/7/2010 to remove unnecessary information and to add information)*

**Game.fla:** The flash file which will be the working program. This will be broken down into the following classes.

**Game.as:** The SnowPrincess class. This class will use all the other classes and be the main shell of the entire program.

1. **Update** - calls all the collision detection, update functions. Also adds the enemies for the first time.
  2. **MoveCollision**- makes sure the hero stays in the middle of the stage.
  3. **CollisionD** - makes sure the hero can interact with the background.
  4. **GoingLeft** - makes sure the hero can go to a level on the left.
  5. **GoingRight** - makes sure the hero can go to a level on the right.
  6. **GoingUp** - makes sure the hero can go to a level above.
  7. **GoingDown** - makes sure the hero can go to a level below.
  8. **HeroEnemyD** - makes sure the enemy can chase the hero.
  9. **Battle** - this function kills the enemy if it is a certain distance from the hero.
  10. **addEnemies** - finds where the enemies go on the level and adds them there.
  11. **EnemiesGoLeft** - All the enemies call their goLeft functions.
  12. **EnemiesGoRight** - All the enemies call their goRight functions.
  13. **EnemiesGoUp** - All the enemies call their goUp functions.
  14. **EnemiesGoDown** - All the enemies call their goDown functions.
  15. **EnemyD** - this function is currently in progress. Makes the enemy detect the background.
- **Hero.as:** The Hero class. This class deals with all interaction with the Hero. This file also uses the Background.as file as well as the Key.as file.
    1. **Move** - Depending on what arrow you press the Hero will change the variables SpeedX, SpeedY, MoveDirection, which return during the update function will change the hero's X,Y coordinates and image.
    2. **GoLeft**- This function will change the SpeedX variable to -5, which return during the update function will change the hero's X,Y coordinates
    3. **GoRight**- This function will change the SpeedX variable to 5, which return during the update function will change the hero's X,Y coordinates
    4. **GoUp**- This function will change the SpeedY variable to -5, which return during the update function will change the hero's X,Y coordinates
    5. **GoDown**- This function will change the SpeedY variable to 5, which return during the update function will change the hero's X,Y coordinates
    6. **NotMoving** -This function will change the SpeedX and SpeedY variable to 0.
    7. **GetMoving** - returns if the hero is moving or not.
    8. **Update** - This changes the Hero's X and Y coordinates to that of the previous coordinates plus the values of Speed X and Y. It will also update the image,

and the Collision Variables, Then it resets the SpeedX and SpeedY for the next frame.

9. **SetEverything**- This function sets the X and Y coordinate for the hero.
  10. **Control**- This function checks to see if a certain button is pressed and if it is, the hero can no longer be controlled by the user.
  11. **DrawHero**- This draws the Hero onto the map, depending on what the moveDirection is will change the image.
- **Enemy.as**: The Enemy class. This class deals with all interaction with the Enemy.
    1. **Update**- this updates the Enemy, based on SpeedX and SpeedY then resets them. Used by the update function
    2. of the game class.
    3. **SetEverything**- sets X and Y.
    4. **MoveUp**- sets the Speed Y to -5
    5. **MoveDown** - sets the Speed Y to 5
    6. **MoveLeft** - sets the Speed X to -5
    7. **MoveRight**- sets the Speed X to 5
    8. **GoUp**- same as the move functions except that they can move a speed of any choice.
    9. **GoDown**- same as the move functions except that they can move a speed of any choice.
    10. **GoLeft** - same as the move functions except that they can move a speed of any choice.
    11. **GoRight** - same as the move functions except that they can move a speed of any choice.
    12. **DrawEnemy** - Draws the enemy to the screen and based on the different directions they are going will.
  - **Background.as**: The Background class. This file contains all the functions that will go into the creating and editing of the background.
    1. **Constructor**: This constructor loads the xml file that contains the tileset. This also checks to see when the function is done then calls the tilesLoadInit function.
    2. **tilesLoadInit**: This function sets the Bitmap variable to be the data from the tileset xml.
    3. **LoadMapXML (World)**: Depending on what the value of World is, will open up a corresponding xml document and calls the xmlLoadComplete function.
    4. **xmlLoadComplete**: This uses the data in the xml document loaded in the LoadMapXML function and the xml document of the tileset creates a bitmap of the level and adds it to the screen.
    5. **newMap (level)**: Sets World to equal level and loads the xml corresponding to it.
    6. **Movingup()** - moves the background up 5 pixels
    7. **Movingdown()** - moves the background down 5 pixels
    8. **Movingleft()** - moves the background left 5 pixels
    9. **Movingright()** - moves the background right 5 pixels
    10. **GetX** - returns the value of x.
    11. **GetY** - returns the value of y.
    12. **setX(newX)** -sets the new value of x
    13. **setY(newY)** -sets the new value of y
    14. **update** - this changes x and y to the value of what they were previously + speedY and speedX.



15. then resets those speeds.

- **Key.as:** The Key class. This file contains functions that will translate data from the keyboard input into usable data for the user to use.

## Implementation

*(Revised 12/7/2010 to remove unnecessary information and to add information)*

- **Readme.txt** - The file containing the basic information such as software requirements and instructions on usage of the game.
- **Game.swf** – The program itself. The compiled version of all .fla and .as files.
- **Game.fla** – The main flash file of the program. This uses Game.as to compile all the ActionScript files (.as) together to make the .swf file.
- **code folder**
  - **Game.as** - The main driver file of the program. This uses Game.as, Hero.as, Background.as, and Key.as to bring all the components together.
  - **Hero.as** – This file contains the hero class. It is used to do all the functions that deal with the main hero. It also calls upon the Background.as, and the Key.as.
  - **Background.as** – This file contains the background class. It is used to do all the functions that deal with the background.
  - **Key.as** – This file contains the Key class. It is used to take input from the keyboard and translates it into information used by the program.
  - **Enemy.as**- This file contains the Enemy class.
  - **Heli.png**- this is the file that contains the hero tileset.
  - **Heli2.png** – this is the file that contains the enemy tileset.
  - **TiledWorlds folder**
    - World1.FMP- This contains the backup World1 file that is used with Mappy.
    - World2.FMP- This contains the backup World2 file that is used with Mappy.
    - World3.FMP- This contains the backup World3 file that is used with Mappy.
    - World4.FMP- This contains the backup World4 file that is used with Mappy.
    - World5.FMP- This contains the backup World5 file that is used with Mappy.
    - World6.FMP- This contains the backup World6 file that is used with Mappy.
    - World7.FMP- This contains the backup World7 file that is used with Mappy.
    - World8.FMP- This contains the backup World8 file that is used with Mappy.
    - World9.FMP- This contains the backup World9 file that is used with Mappy.
  - **xml folder**
    - World1.xml- This contains the xml data that is used to generate World 1.
    - World2.xml- This contains the xml data that is used to generate World 2.
    - World3.xml- This contains the xml data that is used to generate World 3.

- World4.xml- This contains the xml data that is used to generate World 4.
- World5.xml- This contains the xml data that is used to generate World 5.
- World6.xml- This contains the xml data that is used to generate World 6.
- World7.xml- This contains the xml data that is used to generate World 7.
- World8.xml- This contains the xml data that is used to generate World 8.
- World9.xml- This contains the xml data that is used to generate World 9.
- Test.png- This is the png file that is used to generate the tileset for the levels.

## Story

### Characters

1. Armand – Private detective. Hired to search for the missing peasant girl. Soft at heart but has a strong exterior.
2. Ani – The daughter of Hovannes. Kidnapped in the middle of the night to be sold into slavery.
3. Simon- Leader of a gang of evil men who work the slave trade. He is very intelligent, but his emotions sometimes get the best of him.
4. Hovannes (god’s grace) – ho-van-ess. - Father of Ani, daughter kidnapped by gang.
5. Saphyr – Second in command of the evil gang. A ruthless cunning woman who will stop at nothing to get what she wants.
6. Goliath – The strongest member of the evil gang. Easily not the smartest of the gang.
7. Conan – The shortest member of the evil gang. Easily the most arrogant.

### Throughout the game

At the beginning Hovannes pleaded for Armand to find his daughter, moved Armand agrees to look around. Armand first heads towards the house south of town, where they Hovannes lived. There he meets one of the members of the gang, “The Coils”, named Conan. Before they fight Conan mentions a shipment of goods being shipped out of the area at that very moment. After Conan was defeated Armand heads north of town to investigate the mysterious shipment, which leads him straight into the heads of Goliath and his crew. The next gang member and Armand fight which Armand is once again the victor, after which Goliath mentions a cave past the cliffs. Armand adventures there and meets the second in command at the entrance, Saphyr who blocks his path. Once she is defeated he enters and meets Simon, the leader of the gang. Here is where the final showdown is, where Armand defeats Simon, saves Ani, and returns her to her father.

## Known Bugs and Other Issues – in *Case of the Steam Princess 0.4 beta* (updated as of 12/7/10)

- If Transitioning from one level to the next at an extremely fast pace then you could end up at a level that was not expected. IE moving from level 1 to level 7.
- A 2-3 pixel white line on the side of each level, this is probably due to the size of the levels being too big.

- Pressing the G key to stop the Hero from moving, will not always stop him due to the program reading it as multiple key presses.
- There is no collision detection between enemy and background.
- When moving there are slight pixels that appear that are unneeded.

## Test Plan and Test Cases

The test plan will be an incremental testing of every major part of the code. It will start with the smallest unit up to the integration testing. Each unit will be tested in ways that the unit would commonly use, and if a unit is only used in specifically other units then testing that unit will suffice with testing the smaller one.

- **Test Case – TC 1.**  
**Requirement to test** – The game must have a movable character.  
**Precondition-** The game is loaded.  
**Steps to test** - When the game is loaded, press the up key, down key, left key or right key. If when each button is pressed the hero moves in that direction then the requirement is working.  
**Desired results-** The character is able to move from the original spot in all four directions.
- **Test Case – TC 2.**  
**Requirement to test** – The game must have complete storyline.  
**Precondition-** none  
**Steps to test-** get test reviewers to look over the storyline and review it.  
**Desired results-** The storyline is complete and easy to understand.
- **Test Case – TC 3.**  
**Requirement to test** – The game must have a visual environment.  
**Precondition-** the game is loaded.  
**Steps to test** – When the game is on the user views the screen.  
**Desired results-** the user can see the background.
- **Test Case – TC 4.**  
**Requirement to test** – The game must have enemies on the environment.  
**Precondition-** the game is loaded.  
**Steps to test-** Move around each level.  
**Desired results-** there are many enemies on a specific map, which you can visually see.
- **Test Case – TC 5.**  
**Requirement to test** – The game must multiple environments for the user to traverse.  
**Precondition-** the Game is loaded, the hero is movable.  
**Steps to test-** go to every edge of every screen, or level that you are in.  
**Desired results-** Depending on what level you are on, or what edge of the screen you are on then you should be transported to a different environment.
- **Test Case – TC 6.**  
**Requirement to test** – The game must have interaction between the hero and the enemy.  
**Precondition-** The hero can move, the game is loaded, the enemy is loaded.

**Steps to test-** Move the hero towards many different enemies from many different positions.  
**Desired results-** When the hero gets close to the enemy, the enemy moves closer to the hero and when they collide they fight. Specific variables change and when one reaches zero that object (hero or enemy) disappears and is removed from the screen.

- **Test Case – TC 7.**  
**Requirement to test –** The game must have interaction between the hero and the environment.  
**Precondition-** The hero can move, there is a visual background.  
**Steps to test –** Move the character throughout the entire map, and many levels.  
**Desired results-** If the user tries to go over something he is not allowed to then he stops. Also when the hero is at the edge of a level, he is moved to a corresponding level that represents the next screen.

## Unit Testing

- **Test Case – UT 01**  
**Requirement to test –** Hero Class is working, and all of its functions.  
**Precondition-** The game is loaded.  
**Steps to test-** Testing each of the functions of the class one by one.  
**Desired results-** The Hero will change it's speedX and speedY depending on what arrow key is pressed when the move function is called. SpeedX and speedY will change depending on what function you call, goLeft/Right/Up/Down. Getmoving will return the correct state of the variable moving. The function setEverything will take in two parameters and set X and Y to that. Update will change x and y based on what speedX and speedY is, then reset them back to zero.
- **Test Case – UT 02**  
**Requirement to test –** Background Class is working, and all of its functions.  
**Precondition-** The game is loaded.  
**Steps to test-** Testing each of the functions of the class one by one.  
**Desired results-** When the background class is initiated it will load two different xml files and based on those will generate a bitmap background made up of tiles. Update will change X and Y based on the values of SpeedX and SpeedY and then reset them back to zero. Moving Left/Right/Up/Down will change the value of speedX and SpeedY.
- **Test Case – UT 03**  
**Requirement to test –** Enemy Class is working, and all of its functions.  
**Precondition-** The game is loaded.  
**Steps to test-** Testing each of the functions of the class one by one.  
**Desired results-** SpeedX and speedY will change depending on what function you call, moveLeft/Right/Up/Down, or GoLeft/up/down/right/. Getmoving will return the correct state of the variable moving. The function setEverything will take in two parameters and set X and Y to that. Update will change x and y based on what speedX and speedY is, and then reset them back to zero.

## Integration Testing

- **Test Case** – IT 01
- **Requirement to test** –Game Class is working, and all of its functions.
- **Precondition**- The game is loaded.
- **Steps to test**- Testing each of the functions of the class one by one.
- **Desired results**- Hero, background, and Enemy will each call their update functions when the Update function is called. When moveCollision is called depending on where a specific hero and enemy are at in the stage Hero, Background and Enemy variables will change. When collisionD is called depending where Hero is at on the stage Background and Hero values will change. When the functions goingLeft/Right/Up/Down is called, values for Background and Hero are changed depending on which one is called. Depending on where the Hero and Enemy is at on the stage when HeroEnemyD function is called variables from ourEnemy will be changed. If the battle function is called the Enemy will be removed from the stage, as long as it is actually on the stage. AddEnemies function will take variables from the background and create new Enemies based on them. Each function entitled EnemiesGoUp/Down/Left/Right will call the same function for each of the enemies on stage.

## Software demo(s)

Software demo testing the functionality of the software can be found at <http://www.youtube.com/watch?v=DRQqumwuCS8> . This demo briefly goes over all the major components of the software with as much clarity as possible.

## About the Author



Andrew Stansbury is a Computer Science major at Berea College. He arrived there from a small town called Bardstown, Kentucky. He believes himself stuck in the middle between his love for anime and his love for video games, never knowing which his favorite is. Being a avid gamer he longed for the chance to try to create a game of his own, and now he has jumped on the chance of making one and showing the world, or at least the internet what he can do. He would love to work as a programmer outside of college and possibly even in the video game industry.

## *Executive Section*



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The case of the Steam Princess  
**Date:** September 7<sup>th</sup> 2010

### **Accomplishments:**

Found an open source version of something similar to Adobe Flash called Flash Develop. It uses ActionScript 3.0 and with Adobe Flex it is able to create Flash files. With this program I was able to test various tutorial programs and create shockwave files, which are the file type that is associated with Flash.

### **Challenges:**

The challenges encountered were the ability to find a freeware version of Adobe Flash. They were hard to find so I researched until I found one. The Flash Develop software has the ability to program files in shockwave format but the overall coding it has a different environment than Flash and it has to take some getting used to. The problem is that Adobe Flash allowed you to see the images that you are manipulating during the coding while Flash Develop only allows you to view it during runtime.

**Time Spent:** 6 hours time spent overall. The research of Adobe Flash and current open source versions of the program took extensive research, total time 4 hours. The installation and testing of Flash Develop took a total of 2 hours overall.

### **Goals:**

The goals for the next work week will be the further improvement of the knowledge of Flash Develop and ActionScript code. I will begin to start with the level creation with Flash and hope to get a level to test. Another possible goal is to get a moving character on the screen on that level.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** September 13<sup>th</sup> 2010

### **Accomplishments:**

It was discovered that the school server had Adobe Creative Suite on the network, meaning that I was able to download Flash for free. I was able to download it after many errors during the download. I was then able to start with tutorials on how to create games using flash.

### **Challenges:**

The challenges encountered this week were the actual download of Adobe Flash CS5 from the Berea College Network. I was able to download it but I already had a demo installed, so it messed up the installation of the new program. So I went most of the week thinking it was installed until my trial ran out. I then tried to uninstall and reinstall it over and over again. It wasn't until I went to IS&S and had help from Sean Davis that I was able to get it properly installed.

**Time Spent:** 3.5 hours total time spend this week. 1 hour narrowing down the scope, 2 hours installing and uninstalling Flash multiple times, while looking for a fix for it online. .5 hours starting a tutorial online that goes with Adobe Flash. Total time overall – 9.5 hours.

### **Goals:**

The Goals of the next week will be to find documentation on ActionScript programming language and various tutorials on Video game design and structure. Another goal is to create a basic map and character movement on that map.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** September 20<sup>th</sup> 2010

### **Accomplishments:**

I was able to figure out a few more things that I did not normally think about when it comes to games. Sounds and music are extremely important function of any game. I found a few interesting tutorials that I am looking through that will be extremely helpful with designing my game.

### **Challenges:**

The challenges encountered this week were the ability to narrow down the scope. I really thought I had everything covered. It was not until I was actually playing a game to realize that I missed one of the most oblivious parts of the game; the noise! I have also found that it is easy find tutorials on the internet but not as easy to find specific tutorials that are to my genre, or up to my standards.

**Time Spent:** 2 hours total time spend this week. 1 was working on the paper, 1 hour was working on tutorials and searching for them on the internet. Total time overall – 11.5 hours.

### **Goals:**

The goals of next week are to start working on a basic storyline, with key plot points and setting. I will also start to look at tutorials that are more focused at my genre of game and start to experiment with them.





**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** September 28<sup>th</sup> 2010

### **Accomplishments:**

I was able to successfully make my Character move, and I was almost able to implement animation during this. I was able to find a key class online that will successfully translate keystrokes on the keyboard to usable data for my program. This makes my work quite a bit easier now that I figured out how to use the keyboard. I was also able to load a background image onto the screen, which was really not that difficult but I was able to move it also.

### **Challenges:**

The challenges encountered this week were the ability or lack of ability to use the keyboard. I started out using tutorials in ActionScript 2.0 which allowed the user to input things from the keyboard. When I transitioned onto ActionScript 3.0 that usability was changed for security reasons. So I had to look around for a guide on how to do this. Another challenge was the use of classes to interact with each other. I needed the background to move when the Hero close to the end of the screen, so the map will show more, but the classes did not let me interact with one another. I did not get that figured out this week, but will look into it more next week.

**Time Spent:** 8 hours total time spend this week. 1 was working on the paper; 4 hour was working on finding and using tutorials to try to get key binding working. 3 hours was working with character movement and background interaction with the user. I also looked up various tutorials for all of these examples to further my knowledge for the work ahead. Total time overall – 19.5 hours.

### **Goals:**

The goals of next week are to get the class interaction figured out, while also trying to get the tileset worked out for the loading of the background. If time permits I will try to get collision detection with bits of the background to represent hitting barrels/buildings.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** October 5<sup>th</sup> 2010

### **Accomplishments:**

I was able to make the background move based on the way the character is moving. If he is moving towards the side then it will check if the background can move, if it can it will move instead of the character. If the background is at the end then the character will move. This is a great improvement because it will seem like the character is moving much more than it is, which will be a way to make maps bigger than just the program height and width.

### **Challenges:**

The Challenges I have faced have been ever increasing. I was able to create a background that is up to my liking and everything seems great, but the problem comes when I try to implement collision detection. The map is completely one image so if I want the hero to detect collision on a specific point it will be hard. I tried to make different shapes on a different layer but that would work but only on one specific place. I would have to have a new object for every single thing and that would be quite costly. When I tried to implement the detection that I thought was working just froze my guy like I wanted but he could never move again.

**Time Spent:** 4 hours total time spend this week. 1 was working on the paper; .5 hours was working on finding and using tutorials to try to get collision detection to work. 2.5 hours was working with implementing background movement and collision detection. Total time overall – 23.5 hours.

### **Goals:**

The goals of this upcoming week are to get collision detection to work. To do that I am going to try to redo the way I am implementing the background. Instead of a full image I am going to use arrays of tiles. Each array will have a number representing the tile that will be at that spot. So the array will generate the map, and I will have another array with spots the Hero will not be able to enter. This will take quite a bit of time but I hope I can get it done.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** October 19<sup>th</sup> 2010

### **Accomplishments:**

I was able to totally remake the way I did the background. Before it was a static picture, now it's dynamically created during runtime. It uses tilesets I set beforehand and also depending on what tile the character is over the program does different things, the sole idea of collision detection! I was also able to detect when the user was trying to go over tiles I deemed as impassable, and when they tried I programmed it to not let you. I was so glad to get collision detection to work, so glad that I even went a step further. I then made it where if the user went to the edge of the screen, depending where you would change to a different map and be at the opposite side. So I also completed level navigation.

### **Challenges:**

The Challenges I have faced were not few and far between. I had to figure out how to generate tiles for the background; I found a good tutorial for it but it was hard to understand, and incomplete. After emailing the creator and getting additional information I was able to understand it. I also had trouble using the program Mappy. I had to use it to create the tilesets and turn them into xml, but it did not have support for xml documents, so I had to figure out ways to do that also, which I did. Then I had trouble with moving between levels, I had to figure out what the coordinates of the background and my Hero would be after the move, which was making errors. I figured out that I was doing it right, but my SetX function was not doing what it was suppose to, which still is not.

**Time Spent:** 15.5 hours total time spend these 2 weeks. 2 was working on the paper and comments; 9 hours working on collision detection between the Hero and the background tiles. 5 hours working on the movement between the levels and the condensing of bits of the code. Total time overall – 39 hours.

### **Goals:**

The goal of the upcoming week is to work on the Enemy class. I will try to get a firm start on the class and try to get it to interact with the Hero and level by the end of the week. Working upon that might also require for me to rework some of my previous code, so that will also play a factor on what I will get done. If time permits I will also start to expand upon the storyline for the game.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** October 26<sup>h</sup> 2010

### **Accomplishments:**

I was not able to make many accomplishments this week, due to the fact that I did not work on it an extreme amount. I tried to rework my code but feeling like it was not progressing smoothly I proceeded to go to a backup and started on my enemy class. Overall it started pretty good but I feel like it could use quite a bit more work.

### **Challenges:**

The major challenges this week hit me when I looked on how to add an enemy class to my program. I saw that the entire collision detection, really my entire code is all dependent on the Hero class. I then looked at the huge chunk of 100 lines of code that was my collision detection and wondered how the enemy will fit into all of this. I thought it would be better if I could structure my code better, so I started to rework it, which made me have to add quite a bit of code to certain parts. It was wondering if this was the right choice when I decided to go back to my previous model and start my enemy class, which did not make much progress. I had no clue what to do when the enemy so I ended up code monkeying around trying to get things to work, which they didn't.

**Time Spent:** 5 hours total time spent this week. 2 hours was spent on working on restructuring my code and the other 3 hours was spent on working on the enemy class. Total– 44 hours.

### **Goals:**

One of my major goals is to get the enemy class to work, I would love to finish it by the end of the week but my other goal might stop me from finishing that. I feel like my code is very chunky, and will not be able to interact with newer classes that I will add so I feel like a complete overhaul of my code will be needed. Not a complete rework but just a restructure, classes doing different things and mostly to allow the Hero class to do less. I hope I can figure it out over time.



**To:** Dr. Jan Pearce, Project Director

**From:** David Andrew Stansbury

**Subject:** The Case of the Steam Princess

**Date:** November 02<sup>nd</sup>, 2010

**Accomplishments:**

I started to rework my code, which seems to have made some success. I condensed the code for the hero and enemy to just one class for both. It amazes me how actionscript does not really care what variable is used in the parameter as long as you do not specifically define it. I ended up not completing it, but I did start on other things. I completed a tentative storyline for the game completed, and I hope that it will be refined in the future for more clarity. I also started a basic idea of how I will set my tiles up, for a complete map of the entire game.

**Challenges:**

The challenges of this week were mostly my creativity. I had to come up with a tentative storyline, which took a bit to complete and even now feels incomplete. I guess I am looking at it like a move more than a video game, especially a small video game. I also had some trouble with the tilesets, It is hard to create them, especially with my artistic talents, so I have to resort to looking up royalty free ones online, which are hard to find. I found a good one though, so that is solved but creating the actual maps is quite tedious and time consuming.

**Time Spent:** 8.5 hours total time spent this week. 5 hours was spent on working on restructuring my code and the other 3.5 hours was spent on working on the tilesets and the storyline. Total– 52.5 hours.

**Goals:**

One of my major goals is to get the enemy class to work, I would love to finish it by the end of the week but my other goal might stop me from finishing that. I feel like my code is very chunky, and will not be able to interact with newer classes that I will add so I feel like a complete overhaul of my code will be needed. Not a complete rework but just a restructure, classes doing different things and mostly to allow the Hero class to do less. I hope I can figure it out over time.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** November 16<sup>th</sup>, 2010

### **Accomplishments:**

I was able to make a decent amount of accomplishments these two weeks, and I am pretty happy about that. I totally reworked my entire code, basically starting from the ground up. New classes, new movement, new collision, everything was reworked. I did not do much new except get most of my enemy class completed but overall I think I did a lot these past two weeks.

### **Challenges:**

The major challenges that hit me was the restructuring of my code. I had no clue how to do this. I tried creating a whole new class that dealt with the collisions but after almost a week of using that I figured out that it did not work at all. After getting part of the way there with my classes, all the updates were out of wack so I had to figure out how to get all that working. Then with my enemy class I had to figure out how to add them all, remove them all, and how to move them correctly. I had quite a bit of work to do. In the end I basically restructured my code completely twice.

**Time Spent:** 22 total hours spent this week. 15 hours was spent on restructuring my code. 7 hours spent on adding enemy class. Total– 66 hours.

### **Goals:**

My goal for next week is to start to debug what I have and to start making it visually pleasing. I will update my levels with the basic visual background that I will want it to have at completion. I will also make my enemy have collision detection with the background and hopefully I can also have it have an animation playing at the same time.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** November 23<sup>rd</sup>, 2010

### **Accomplishments:**

I was able to make each level mostly complete to an extent. Each background in the levels is what I really want them to be when I am completed with the project. There is still a bit of work that I have to do on them, but overall I believe they are pretty good. I was also about to create the video demo for the game. I think it turned out ok, but I think it could have been better.

### **Challenges:**

The biggest challenge that faced me this week was that video demo. It took awhile for me to figure out how to record things on the computer. I had a piece of software downloaded but it was not compatible with flash so I had to research for more. I found one that seemed to work, but only five minutes of recording took up 200 megabytes, which I thought was way too much. After a while of picking at it I was able to get it down to only 16. Getting it down seemed to reduce the quality quite a bit, and it does not look that good because of it.

**Time Spent:** 10 total hours spent this week. 7 hours was spent on changing the tiles of the background. 2 hours spent on looking up things to do with the animation of the hero. The last hour was for the video demo. Total– 76 hours.

### **Goals:**

My goal for next week is to change the skin of the hero and the enemy, from just squares and circles into actual humanoid-like things. I will also be revising my video demo to make it much more professional looking.



**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** November 30th, 2010

### **Accomplishments:**

I have to admit that I had a very busy Thanksgiving break and due to that I was unable to accomplish much. I started looking up things on different ways to animate my character with attacking motions I feel like that will be a good starting point for me next week.

### **Challenges:**

The biggest challenge was the lack of the Key Server over the break. Due to that I was unable to access my code for quite some time, but was able to due to a workaround I found. It was a very busy break for me and due that that I was unable to get work done over break and then once entering college again more work piled upon me. Looking up tutorials came again and the stress weighed down on me, so working under stress was a big challenge.

**Time Spent:** 4 hours total spent this week. 1 hour was spent on the paper and 3 hours was spent looking up tutorials. Total– 80 hours.

### **Goals:**

My goal for next week is to finish the final draft of the video demo. Start and finish my poster board and then get to a good stopping point with my software. The stopping point I concluded was to finish all interactions with the enemies. They must have collision detection with the background. They as well as the hero must have health that will deplete as the battle goes on. It will be hard getting that much done in a week but I will try my hardest.





**To:** Dr. Jan Pearce, Project Director  
**From:** David Andrew Stansbury  
**Subject:** The Case of the Steam Princess  
**Date:** December 7th, 2010

### **Accomplishments:**

I finished a finalized version of the game! Makes me happy and sad at the same time.... I wish I had more time to make it more complete but I do not, so I will show you what I have done this week. I finished the poster, I hope it looks good. I finalized the demo also; I think it is better than the first by far. I was able to make the hero and enemy actually look like people instead of the blue blobs.

### **Challenges:**

The biggest challenge was the animation. It was really hard to figure out how to make the character look like he was moving instead of just sliding around. Thank the heavens that I found a tutorial online that really helped me. It had just what I was looking for. Another struggle was the collision detection between the enemy and the background, which due do the way I was moving the enemy made it where I could not complete it in time.

**Time Spent:** 10 hours total spent this week. 6 hours finishing up the enemies. 4 hours finishing video demo, poster, and paper. Total– 90 hours.

### **Goals:**

There are no more goals for the semester! I guess I will do the poster presentation for everyone on Tuesday, and then that would be all she wrote. I do plan on working on it more after this semester, and because of that I plan on doing a lot more. I will fix that collision detection, as well as adding a much better battle system.