To: Dr. Alfano, Tech Comm Instructor
Dr. Hildinger, Tech Comm Instructor
Dr. Chesney, Lead Instructor
From: Claire Rehfuss, Engineering 100 Student
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Subject: Switching it Up: A Maze Game
Dist: Lauren Kennedy, Teaching Assistant
Noah Dunchan, Teaching Assistant
William Farmer, Teaching Assistant

Foreword
Thousands of children all over the world are diagnosed with an Autism Spectrum Disorder (ASD) every year, but there are very few exciting resources to help them deal with their condition. In response the Gaming for the Greater Good class was challenged to develop a game to help children with ASD. This electronic game had to be appropriate and address a specific characteristic of ASD. It must be developed in a small team and the final product is due at the end of the semester. The purpose of this proposal is to explain my game, Switch it Up, which is intended to help mildly autistic children become more accustomed to change.

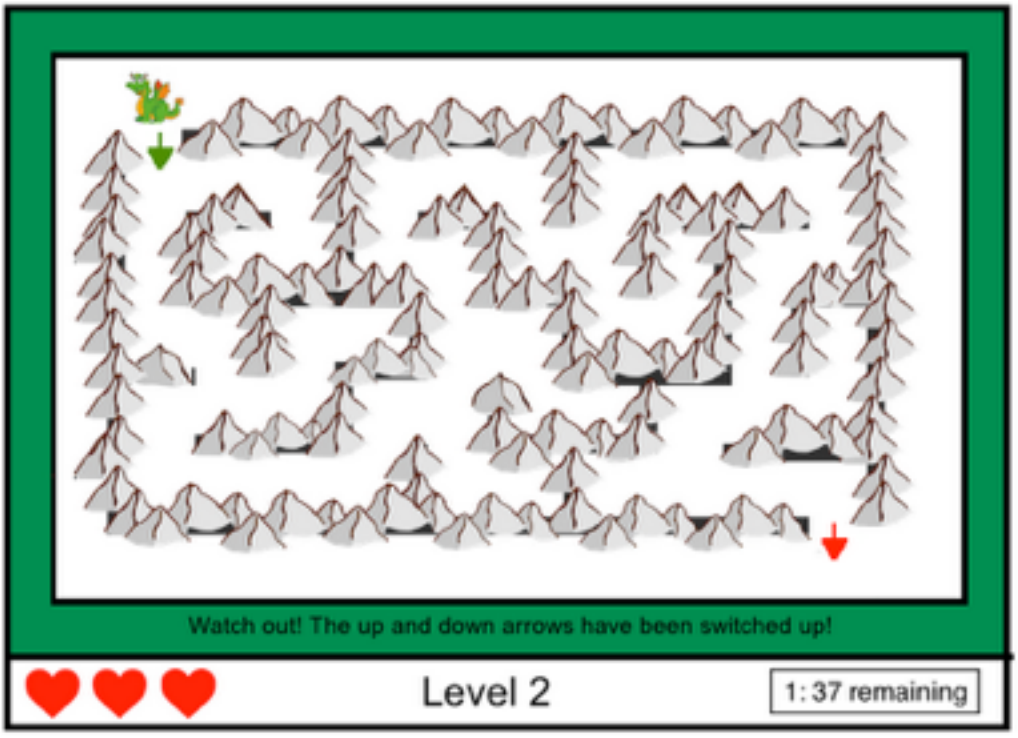
Summary
I discovered that even though, ASD is so prevalent in our society there are not nearly enough interesting games to help children and teens deal with their symptoms. After researching ASD and the characteristics normally associated with it, I concluded that one major difficulty for these children is dealing with change. For instance, a change in their bus route or daily routine can result in major distress. This distress can lead to a breakdown and stress out the parents and teachers. However, change is unavoidable. So it is important to get children with ASD exposed to it as often as possible.

Discussion
Introduction
Our class was challenged to develop an age-appropriate game to help children suffering from ASD. However, every child with autism experiences different symptoms, ranging from horrible verbal communication skills to obsessive compulsive disorder. This can make developing a game difficult as no one game could cover every symptom ever recorder. So, the electronic game should more specifically focus on only one specific characteristic of ASD. This proposal describes a video game intended to encourage an autistic child to become more comfortable adjusting to change.

Object of the Game
Switch it Up is a game I propose for children over the age of 12 who have been diagnosed with mild autism. The object of the game is to move through a maze to get a dragon to its home (a cave) before time runs out. There are six levels to the game, and the player must reach the cave before moving to the next level. If the time runs out then the player must start back over from the start of the maze. If they fail to complete the maze in three tries they will be moved back a level.

However, as the name of the game suggests the game will switch it up each level. The controls will switch for each level. On the first level the controls would be what one would expect, i.e. the up arrow moves the dragon up, the left arrow moves the dragon left, etc. However, once they reach the second level the game will change and now the up arrow will move the player down and the down arrow will move the player up. It will continue to change on the player each level to keep them on their toes and prevent them from getting too comfortable with the controls.

The mazes will also get more difficult as the levels increase, but the time the player has to complete the maze will also increase according to the difficulty.



Game Play

The player will play as a dragon trying to make its way home to its cave through a bouldery, mountainous maze. The mazes will change every level and grow increasingly more difficult. The dragon will give the impression that it is flying, with the flapping of wings when it moves. A motivational, upbeat soundtrack will play in the background. Then, when the dragon runs into a wall it will roar in frustration, mirroring how the child might feel. There will also be a clock that is counting down in the corner to zero to show how much time there is remaining. The level number and what arrow keys have been switched will also display on the bottom of the screen. Three hearts icons will also be displayed to let the player know how many more attempts they have.

Controls

The controls are the key to the game. On the first level, the controls will simply be the arrow keys at face value: the up arrow will move the dragon up, the left will move left, the right will

move right, and the down will move down. On the second level the up and down arrow control will switch, so the up arrow moves the dragon down and the down arrow will move the dragon up. On the third level the left and right arrow will switch similarly. On the fourth level both the up and down, and left and right arrows will switch. On the fifth level, the controls will all rotate so the up arrow moves the dragon to the right, the right will move the dragon down, the down arrow will move the dragon to the left, etc. On the sixth level the controls will just randomly be assigned.

		Which Way the Dragon Moves (According to Level)					
		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
USER INPUT	Up Arrow	Up	Down	Up	Down	Right	Random!
	Down Arrow	Down	Up	Down	Up	Left	Random!
	Left Arrow	Left	Left	Right	Right	Down	Random!
	Right Arrow	Right	Right	Left	Left	Up	Random!

Customization
Switch it Up will let the player switch up a few things. From the home screen the player will be able to choose whether the dragon is brown, green, purple, blue, or white. They will also have the ability to turn off the sound, in case it distracts or annoys the player too much. An input for name will be given as well, so at the end of each maze there can be a customized congratulatory message.

Development
This game will be programmed using Python. It will have to be developed in stages. Every level will have to display a different maze and rely on different controls. This is a reasonable expectation and the main function of the game. The dragon should be animated, there should be sounds/background music, a functioning countdown timer, and a display to see the number of lives left. Before release, it's important that we frequently test and debug the code.

How Switch it Up Could Help with Autism
Switch it Up helps children with mild autism become more accustomed to change. It gets rid of any pre-constructed ideas of controls and works against what they're used to. It is unnatural for anyone to think that pushing the up arrow will make the character move down, so it will help them deal with unprecedented situations. It also encourages patience and diligence. This game should help desensitize these children to change, which will help them in their everyday lives.

Evaluation
If Switch it Up runs correctly, on any platform, then the technical aspect of the game can be considered successful. To run successfully the controls would have to switch at every level. The dragon's animated flying would have to run smoothly, in any direction it faces and the mazes

have to be reasonable for the level and intended audience. There would need to be no bugs in the system and not be too difficult.

However, in order for the game to also be successful, it is important to note if the game would actually help a child with ASD. If the game proved to decrease the amount of distress and irritation a mildly autistic child felt when it came to change, then the game is truly successful. Although, the game itself might create some distress as long as the child felt more prepared to face stress in the real world, this would imply a good game.

Materials and Equipment
To develop Switch it Up, every team member will have to have a personal computer that can run python. They will also have to have a graphics based editor, like paint or photoshop, to help create the background elements and the dragon animations. However, no other special equipment is needed. This game should not cost any money to develop.

Personnel
The team should be a small group of programmers. It is important that they have had some computer skills and the ability to problem solve and think outside the box. They should be willing to work hard and like the game promotes be willing to deal with change. The team members should also be excited and passionate about helping kids suffering from ASD, as this will lead to the best environment to develop the game.

Knowledge
I have sufficient knowledge to take on this task. I have previously developed a game in Python , in this class. I have taken four classes dealing with computer science: two in high school (AP Computer Science and Honors Data Structures) and two in college (Advanced Intro to Computer Science and Data Structures). This has given me a deep background and understanding in the subject. I also interacted with my target age group on a daily basis this past summer, babysitting two 12 year old boys, so I understand what attracts them to a game. This will help me make a video game that is not only helpful, but interesting and challenging to play. I have always been passionate about helping others, and will apply my passion to this game.

Conclusion
The proposed video game will help children over the age of 12 suffering from mild autism to deal with major and minor changes in their lives. Should it help decrease their distress, then Switch it Up can be considered a successful game.