Scratch Project Design Notebook

PLTW | Computer Science

Invasion of the Triangles

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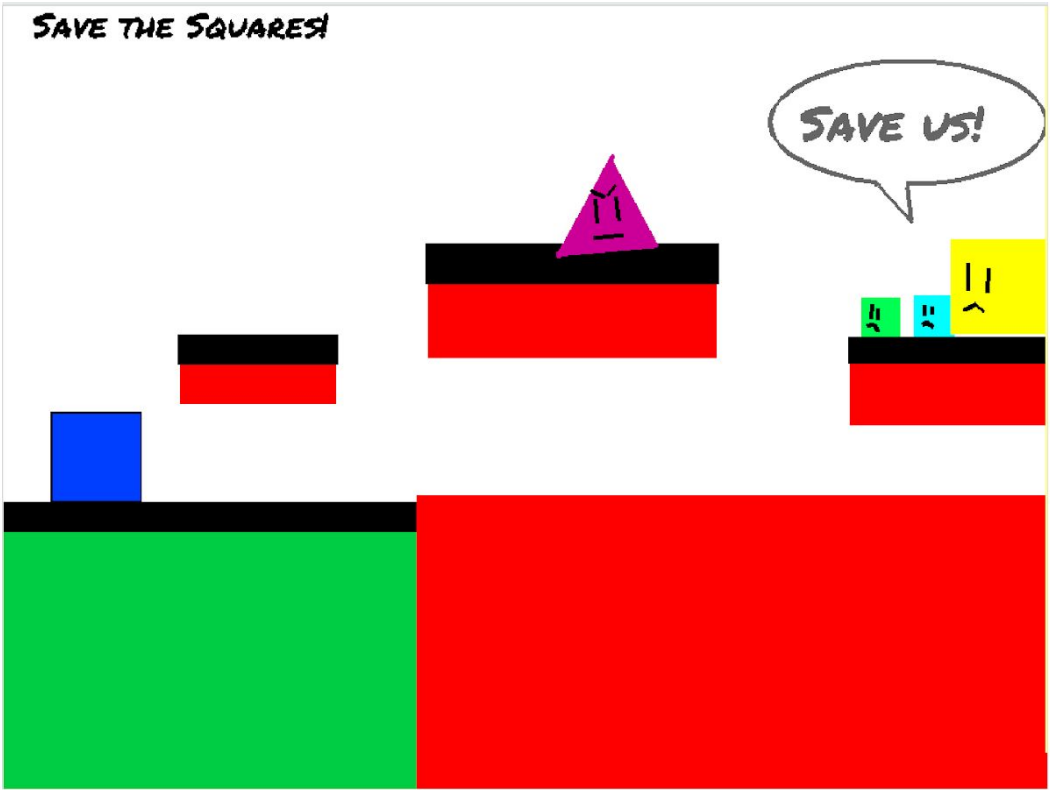


Invasion of the Triangles (final, graded)

Previous Versions:
Invasion of the Triangles (remix)
Invasion of the Triangles (initial)

Brainstorm:

Game Ideas	Story Ideas	Combination
Platformer ● Collect item through mini-games ○ Each game = 1 level	● Story ○ Options to choose next action of sprite ○ Multiple character perspectives	● Platformer with backstory ○ Multiple levels ○ Multiple sprites ○ "Boss battles"? ○ Possible cutscenes

Top 2 Ideas:

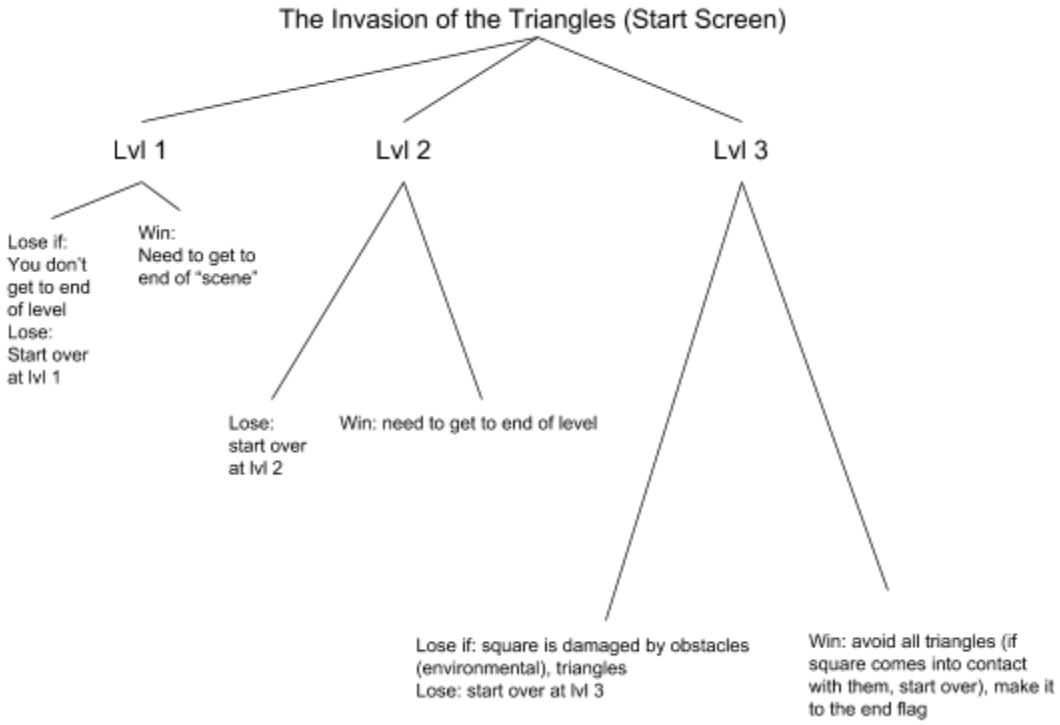
1) Story
    - Choose your own adventure story
        - Student goes to school
            - Make decisions for them
        - E.g Do your homework OR watch YT

2) Platformer with backstory (Combination)
    - Invasion of triangles
        - Square saves tribe people every level
        - Jumps over triangles?
        - "Collects" square tribe

Pair Feedback:

To improve our story idea, we were asked to aim for a certain number of outcomes. We were also able to identify a practical range of options that could be used in each point of the plot. For our platformer game idea, we were asked about the number of levels we were going to code and whether there would be any variation in between each level (increase in difficulty, new enemies, etc.). We decided to create 3 levels in which we would increase the difficulty each level through game elements or mechanics. In conclusion, we decided to stick with our platformer idea.

Flow Chart:



How to Play:

Instructions: This is a platformer game in which the objective is to get the square to the end of each level by avoiding obstacles such as triangles and red zones. The controls to move left and right are the left and right arrow keys. You can jump by using the up-arrow key.	
Pro: Features Liked	Con: Aspects that were confusing, buggy, or etc.
- The game is simple and is easy to control. It is very straightforward and has a simple goal in mind. - I like that the game had simple code and was still fun to play. It had a nice theme and storyline. - The code for the landing and moving were very smooth - The game was very challenging, but it was still possible to beat. The game was also very smooth, making it easier to play. - The second level was somewhat hard but possible to beat, making the game fun. - The game mechanics are not glitchy at all :) - Smooth controls, enjoyed the gliding - Smooth	- Level 2 was kinda hard to beat because the triangle was moving too fast - To make the platformer jump easier and not slowly move up the black part, make a function that moves the player and set it to "run without screen refresh" - Game was somewhat short with 2 levels - Can add more mechanics that displays some values like a timer or score system to make it more engaging - One time I made it to the squares but I never won - There should be more levels and try to stretch the level a bit more - The tutorial and level one hd a steep difference in level. - Shouldn't use color to sense your environment. Could use something else or change the color of the sprites. - Needs more levels, variety, and some aspects

	don't make sense - Could glide across level 2 without difficulty by holding the jump button - There was a sprite that does nothing, and has no code

Conclusion Questions:

	Trisha	Hwapyeong
Reflect on the creative process you used. What was useful?	We brainstormed our ideas based on the three categories that we would put them into- story, game, or combination. I think this helped us because we were able to organize our ideas and speed up the process of distinguishing which idea would be the best to develop. I also found that it was helpful that we got time in class to collaborate and discuss in person while working on the project as it made it easier to communicate between each other.	We started off with brainstorming. That was the first step. Next, we shared ideas with another group. That was the second step. Then we started developing the program, which was the third step. The final step was the presentation. I personally think the pair feedback time was very helpful and inspiration.
Reflect on the team dynamic. What helped the team work well together?	Our team was able to work together well because we were willing to collaborate and share our ideas without being wary of any excessive judgement or criticism. We were able to combine our ideas and discuss them to develop them in a way that would benefit us the most.	The thing that helped the team work together is discussing the problems in the program and sharing ideas efficiently.

Daily Log:

- Thursday, 8/30: Brainstorming
    - Categorized ideas based on whether they were a story, game, or a combination of both

Reflection: We were able to discuss and decide on an idea that would be most practical to work on. We still need to decide on the specifics, most likely after we get feedback.

- Friday, 8/31: Developing ideas
    - Pair feedback
        - Specify # of levels
        - Need to vary in difficulty

Reflection: After getting feedback, we decided to work on 5-7 levels with varying difficulty every time you move up. How we increase difficulty will be by adding more triangles, then programming them to

move back and forth, creating a condition that tells if the player passed or lost by counting the number of squares they “collect”.

- Tuesday, 9/4: Started working on square’s movement
    - Created square sprite, experimented with moving left and right
    - Looked at other projects as examples
    - Created backdrop
        - Green ground (rectangle), white background

Reflection: We tried moving left and right by using steps, but that didn’t work out because it was too choppy and not fluid enough. Jumping seems to be our biggest challenge right now, so we looked at other projects to see how they do that.

- Wednesday, 9/5: Finished square’s movement, started level design.
    - Decided on having 3 levels due to time constraints
    - Added black to ground for easier programming (<if touching color _ …>)

Reflection: We noticed there’s a floating movement the square makes whenever it lands from jumping, so we adjusted the value that changes the position of y and found that 0.5 doesn’t do that but it stays in the middle of the black area, not on top. We decided on doing only three levels because there’s not enough time to do more than that and code for the difficulty variation as well.

- Thursday, 9/6: Finished level designs and added start screen
    - If we had more time, would’ve added more of a story in the beginning of the program (after the start screen) since this is a combination of a game and story

Reflection: Worked on the project and finalized it at home; finished level designs and cleaned up message broadcasts, organized code and added additional comments, coded obstacles (triangles, red danger zones). We were able to complete the three levels we decided on yesterday.