Defining the problem

The Client myself, Sky Johnson, am currently a High School Student attending Fairview High School.

I would like to make a version of Asteroids, an old arcade game[1].for future expansions onto an already self-made game. The game will feature a main player that can move around a space, and shoot asteroids that spawn. However, I would like to keep all the entities in the game to be modifiable, such as the background stars, the player, and the asteroids. So that in the future I may also add availability into different kinds of game styles.

After I decided on this challenge, I asked my dad, Craig Johnson, to be my mentor (advisor) for this project and he agreed. I also asked my brother (Cash Johnson), and other friends (APPENDIX) to be beta-testers and end users, along with myself. (Clients)

Rationale For Solution

The reason I would like to make this version of Asteroids is because with a modern implementation of the game, and with direct influence over the production process, I can create the game into what I want it to do. In the past Asteroids was a game that revolved around randomness and luck. I wish to change the way the Asteroids are created in the game, that way in future updates to the game, I may tweak it to be more enjoyable. Examples of an update I would like to make, is to make the game based of sounds, where the spawning, and colorization of entities on the game depend on the current music being played. With previous versions of the game it would be impossible for such open ended customization.

I decided to use Java for this project for some various reasons.

1. Graphics can be easily rendered to be archaic or similar to how it originally was made.
2. Java is Object Oriented, meaning that dealing with entities and other aspects of this project will be simple.
3. The vast array of implementable libraries make complicated tasks easy.
4. Java is supported on many platforms.
5. Java can be compiled into a runnable jar file.

Criteria for Success

1. The game is playable, and score based
2. The player can move around easily and intuitively within the space.
3. The player can sho9t and aim the blasters of the spaceship easily.
4. The asteroids spawn in a way that requires eventual response from the player.
5. The game finishes eventually, leaving a game won indication

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[1] Appendix 1

6. The game has basic menu utilities.
7. The game is seed able, where in, I can create the same instance of the game if a certain "seed" or String is typed in, and the placement of where asteroids spawn, or placement of entities is the same.
8. The game keeps track of lives and bullets shot able by the player.
9. The game has the ability for multiple game modes
10. The implementation of multiple game modes is documented and simple to do, with the spawning of the Asteroids simple to change.