Final Project

The Final Project

The following are class requirements for the final project.

- Written in Java
- Object-oriented
- Processing or CS50 IDE
- Game, application, or mathematical simulation.

Required Components

1) Object-oriented. Needs at least 3-5 object classes.
2) At least one object class must have 3 or more instance variables, 4 or more public methods and 2 or more constructors
3) You must use loops appropriately. At least 2 or more loops(for or while).
4) Needs at least 1D array, 2D array, or arraylist of **objects.**
5) Must use inheritance appropriately. At least one of 1D,2D or arraylist of objects need to contain at least two different types of objects. (For example an array of Lawyers and Secretaries both of which are Employee objects.

Games

Ideas:

1)Game of Life Simulation
2)Tetris(hard)
3)Asteroids shooting game(**Arraylist**)
4)Brickbreaker
5)Connect Four(**2D Arrays**)
6)Racecar(Obstacles avoidance)
7)Other 80's Nintendo games

Applications

More Ideas:

1) Educational Applications:
   - Software that teaches basic math, music theory, shapes/color learning.
   - Memory matching.

2) Other Useful Applications:
   - Basic calculator, mortgage calculators, budgeting software, planners/schedulers.
   - Look on Processing

Applications

More Ideas:

1) Look at apps on Android/iOS apps for ideas.

2) https://processing.org/tutorials/ for more ideas. For example, photography(pixels/images/filters), instant messenger(chat program),data processing, video processing, 3D.

Avoid

The Snake game is very popular on the internet and it is one of the most plagiarized games.

Unless you are doing an interesting variant of this, avoid this game.

If you like to do a variant of this game, please talk to me first.

Do a Project = Your Ability

Do a project that is equal to your ability.

Your project should be your own work. If you use a tutorial or like to expand on another project, please cite your sources in the comments at the top of your code.

Please avoid ”I got help from my cousin who is a programmer.”

Some More Advice

Consider doing the following to make your code more readable, which makes it easy to debug and make revisions/improvements.

1) Indent nicely.
2) Refactor your code. If the draw method(or your main algorithm method) is too long, consider moving some blocks of code to different methods.
3) Use comments to clarify confusing parts.
4) Test your code early and often. Don't write five classes, none of which work! Instead, write a class, make it move and display properly. Then add more methods to it if necessary.

Your Proposal

Write a short proposal of your project.

1) What IDE are you using? Processing or CS50 or something else.
2) A short description of the program. For example if it is a game, explain how the game works, the objective of the game, etc..
3) What are some of the classes you need to implement? For example, Player, Asteroid, Bullet.
4) What data structures will you use? Arraylist of Bullets, 1D array of Asteroids.