My idea

Use this to summarize your idea, plan it using sketches, notes and pseudocode as needed

GitHub Username: **SrSiestas15**

A bullet hell with a simple art style; includes a title screen, the main gameplay screen, a death screen and a win screen. Clickable buttons allow players to retry or choose between an endless or finite level structure.

There is variation in bullet size and speed, both increasing in difficulty as the game progresses. Certain power-ups may be available to spice up gameplay (if I have time), at least one that gives the player an extra hit point.

The antagonist makes fun of player with dialogue changing as score grows.

Where will the inventory skills be demonstrated? List every one to be sure you've included them.

1. line, ellipse, rect, triangle, quad, arc, curve 2. fill, stroke, strokeWeight, noFill, noStroke, colour 3. Modes: CORNER, CORNERS, CENTER, RADIUS *>>Create Player sprite and enemy bullets* 4. setup(), draw() 5.background(), random(), noise() 6.constrain(), dist() *>>Help with collision detection* 7.keyPressed(), keyReleased(), keyPressed, mousePressed() 8. increment operators: ++, +=,—,-=, *=, /= *>>Take player input to move sprite* 9.declare and use a local variable 10.declare and use a global variable *>>keep track of player position, lives, gamestates, etc* 11.println(), stop() *>> Print to console to check for proper variable assignment during early stages of development (among other bugs/ errors)* 12.conditional statements: if, else if, else 13.Boolean expressions: ==, >=, <=, >, <, != 14.Logical operators: &&, || *>>check for collision detection (enemy bullets w/ player and button interaction)* 15. switch statement 16. For loop, while loop 17. A nested loop 18. break() *>> create multiple objects of the same class efficiently (enemy bullets)*	20. Declare & call a function with no parameters and no return type 21. Declare & call a function with a return type 23. Pass by copy (value): declare and use a function that takes int, float, char, etc as an argument 24. Pass by reference (objects): declare and use a function that takes an object as an argument 28. Write a class with a constructor function 29. Use the keyword new to instantiate an object 30. Write a constructor function with parameters 34. Initialize and populate an ArrayList 35. Manage a set of objects with an array or ArrayList 36. Use an ArrayList method: size(), get(), remove(), contains() *>>Help manage a large number of objects at once (enemy bullets)* 38. Use the PVector class 39. Do some basic physics: use position, velocity, and acceleration (due to gravity) vectors *>>keep track of player and enemy bullet position* 40. Find the direction and distance between two points *>>check for collision detection (enemy bullets w/ player)* 41.Create a random 2D vector 43. Using the Processing documentation look up a method in the PVector class that's new to you and use it in your code.

Milestone 1	Milestone 2	Milestone 3	Milestone 4
What will I deliver? Basic prototype of title screen, main game screen and game over screen, with a way to switch between them. Working player movement and collision detection	Polish all visuals and gameplay	Add power-ups, score, lives, etc **You are strongly encouraged to deliver your finished game at Milestone 3.**	Finish anything I missed or didn't have time to implement
Which inventory skills will this demonstrate? List them.			
1. line, ellipse, rect, triangle, quad, arc, curve	34. Initialize and populate an ArrayList	11.println(), stop()	
2. fill, stroke, strokeWeight, noFill, noStroke, colour	35. Manage a set of objects with an array or ArrayList	15. switch statement	
3. Modes: CORNER, CORNERS, CENTER, RADIUS	12.conditional statements: if, else if, else	17. A nested loop	
4. setup(), draw()	13.Boolean expressions: ==, >=, <=, >, <, !=	18. break()	
7.keyPressed(), keyReleased(), keyPressed, mousePressed()	14.Logical operators: &&, ||	23. Pass by copy (value)	
8. increment operators: ++, +=,—,-=, *=, /=	16. For loop, while loop	24. Pass by reference (objects)	
9.declare and use a local variable	20. Declare & call a function with no parameters and no return type	29. Use the keyword new to instantiate an object	
10.declare and use a global variable	21. Declare & call a function with a return type	30. Write a constructor function with parameters	
38. Use the PVector class	40. Find the direction and distance between two points	36. Use an ArrayList method: size(), get(), remove(), contains()	
39. Do some basic physics: use position, velocity, and acceleration vectors	5.background(), random(), noise()	41.Create a random 2D vector	
28. Write a class with a constructor function	6.constrain(), dist()	43. Use new Vector your code.	
You should deliver approx. 10 skills at this milestone	You should deliver approx. 10 skills at this milestone	**You must deliver 30 inventory skills by this milestone.**	

MAIN CODE

```
object arrays;
global variables;

setup(){
        creating screen dimensions;
        basic background colour;
        create objects in each array;
}

draw(){
        If gamestate == title{
                draw background;
                check button collision;
        } else If gamestate == game{
                draw/clear background;
                check input;
                move sprites;
                check collision;
        } else If gamestate == death{
                draw background;
                check button collision;
        } else If gamestate == win{
                draw background;
                check button collision;
        }
}

Define functions for checking;
        mouse and button collision;
        enemy and player collision;
```

PLAYER CODE

```
class Player{
PVector position;
variables;

  Player() {
  }

  void update(){
  }
}
```

ENEMY CODE

```
class Bullet{
PVector position;
velocity;
variables;

  Bullet(float speed) {
  }

  void move(){
   }
  void update(){
   }
}
```