

CS1013 Programming Project  
Exercise 4

1. Building on the ***Alien*** class from last week (or the sample code given in the lecture), and the ***Player*** class from week 2, add a ***Player*** object to your program so that the ***Player*** can be moved around at the bottom of the screen while the ***Aliens*** move across and down the screen as per the specification for week 3. (30 marks)
2. Add a ***Bullet*** class with a **move** method which moves the ***Bullet*** up the screen, and a **draw** method which draws the bullet. An instance of the ***Bullet*** class should be created at the ***Player's*** position when the mouse button is pressed, and then move up the screen. Remember processing will call your `mousePressed()` method when the mouse is pressed, if you create one. (30 marks)
3. Implement a **collide** method in the ***Bullet*** class to check whether the bullet has collided with an ***Alien***. The array of ***Aliens*** should be passed as an argument to this method. Demonstrate your code by being able to fire at aliens and have them explode (e.g. using the image from last week) when hit. Note - a single bullet can hit multiple aliens, these are futuristic bullets. (20 marks)
- 4: (The player will need to be able to fire multiple bullets). Have some of the aliens drop “power ups” that affect the firing rate and pattern of the player’s bullets (e.g. double bullets). Implement three different power ups. Each of the powerups should have a different appearance. (20 marks)

**Lab challenge:** details at the lab.