

## Exercise 1

To improve our code, we want to split several classes into more classes. The classes we want to split are Game and GameController, because these classes are now too big in our code. We have chosen to split these classes in the following classes:  
Game:

### Controller

- UnitController
- (Interface) MovingUnitController
  - BarricadeController
  - AlienController
  - SpaceShipController

### Unit

We also want to change the Unit section of our code, we want to have an interface movable that is implemented by the movable/moving. This prevents a lot of duplicate code. Implementing this change would mean we would have to change all of the following classes:

- Unit
- Movable
  - Alien
  - SpaceShip
  - Bullet
    - \* SpaceShipBullet
    - \* AlienBullet
  - Explosion
  - Barricade

### GameUiController

Changing the structure of unit in our code we also need to change the ui section. This will be the new class hierarchy. GameUiController:

- UiElement
  - UiElementUnit
    - \* UiElementAlien
    - \* UiElementSpaceShip
    - \* UiElementBarricade
    - \* UiElementExplosion

- \* UiElementBullet
  - UiElementSpaceShipBullet
  - UiElementAlienBullet
- Score
- Lives

Since we did implement equals methods in most of (the suitable) classes but we did not implement hash code yet. Hashcode should be implemented too.