Group lab

In groups of 2-3 students we will be making a space flight game. The games mechanics will be left largely up to the group but there are some specifics I want you to include

* Physics – space ships fly in space where there is no friction and drag. However, manipulating a spaceship (whether 2D or 3D) can be challenging. So there should be some ways of slowing a spin (angular drag) or reducing your velocity (Unity just calls this drag) regardless of how you are moving. This can be done through the *RigidBody* but will need input to trigger this somehow.
* Projectiles – We have space games to shoot things. But think more creatively than that by adding some interesting types of projectiles (fast, slowmoving, heat-seeking, movement-seeking, chaff). I will mention this later but the *projectile launcher* should be a component able to be added to any ship (that way projectiles can be mixed between ships).
* Targets/Enemies – What are projectiles with interesting things to shoot? How would you make an enemy that dodges you? What about an enemy that shoots back? We may not be able to prefect this objective but consider ideas from the entire group on how you would handle this task.
* Multiplayer – afterall, there are more than one of you in your groups, you should be able to play together what you created. It could (and probably should) mean sharing a keyboard. If you have PC-compatible controllers you could use those by setting up Unity input axis to support multiple players. I would however caution you to stay away from Unity networking for now (unless you just don’t like sleep or something).
* Modes - I want different game modes. 1 per person in the group to be exact. Maybe a PvP arena mode, a PvE mode, and a capture the flag PvP mode. A lengthier story mode may be undertaken instead of having different modes.
* Different ships – That fly and shoot in different ways. Customizable may be difficult at this point (though not impossible) but there could be several choices that the player could have. Speed, maneuverability and weapons, could be added in different ways. The key here is how to add them to the ships – as components (monobehaviours) they can potentially be tacked onto any ship that supports it. Here we are trying to understand the component/container paradigm.

Game examples to draw inspiration from:

* + Star Command – top down 3rd person, arcade like (with story/campaign mode)
  + Wing Commander – 1st person
  + Star Fox – story based shooter, largely 3rd person
  + Descent – 3d (6 degree freedom space flight arena game)