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Final Project Proposal
CS340_400 – Summer 2015 – Sarbaziazad

Kerbal Space Program Database Proposal

I propose designing and implementing a database to include entities and relationships present in the Kerbal Space Program video game. This is software that has users design and test rockets, and conduct missions to the various planets in the fictional Kerbin (home planet) star system. Users are in charge of selecting Kerbals (the natives), ships they have designed, and destinations for each mission, this complexity will lend itself to an appropriate database design for this class project.

Entities:

- *Kerbals* - These are the pilots, and have certain characteristics in-game such as bravery, stupidity etc.
- Ships - These include both space planes, and rockets, and will be used to conduct missions.
- *Missions* - Missions could vary from survey a lake on the home planet of Kerbin, to a sample return mission to the moon of a distant planet in the system.
- *Planets/Moons* - These have a number of identifying criteria, including gravity, atmospheres, inclination of orbit etc.

Relationships:

- *Kerbals are assigned to Missions* - This is a many to many (or none) relationship. Kerbals are assigned 1 or more missions, however not all missions must have a Kerbal.
- *Ships conduct missions* - This is a many to many relationship, a mission can use multiple ships (refueling, docking etc), and a ship can be used on multiple missions.
- *Missions have Planet/Moon destinations* - This is a many to many relationship as a mission can have multiple targets, and a single planet may have multiple missions targeting it.
- *Moons orbit Planets* - This is a one to many relationship. Moons can only have 1 planet they orbit, but a planet may have multiple moons.