# Assignment 14: Space Craft

## Objectives

* Create a Space Craft class.
* Create classes which build on Space Craft: Space Station and Space Shuttle.
* Create a toString method for each class.
* Store a list of objects in an ArrayList.

## Motivation

In this program, you will be creating an application to hold various types of space craft.

## Instructions

Name your project FirstnameLastnameAssignmentNumber

## The Space Craft Class

A space craft is a generic term for an object in space which holds people. The SpaceCraft class needs to be a **public abstract** class. People sit in seats. Your SpaceCraft class should have the fields:

* String name; // The name of the space craft
* int seats; // How many people can sit in this space craft.

### Methods

* Constructor(String name, int seats): Assigns the parameters to the fields.
* getName(): String: Returns the name of the space craft.
* getSeats(): int: Returns the number of seats.
* Override toString(): String: Returns a string containing the name and number of seats in this generic space craft.

## The Space Station Class

A space station doesn't move in space. It houses people. The SpaceStation class needs to extend SpaceCraft. It should have the following fields:

* int ports; // Number of ports on this space station.

### Methods

* Constructor(String name, int seats, int ports): Assigns the parameters to the fields.
* getPorts(): int: Returns the number of ports.
* Override toString(): String: Returns the name and number of ports on this space station.

## The Space Shuttle Class

A space shuttle moves people around in space. A space shuttle has engines. The SpaceShuttle class needs to extend SpaceCraft. It should have the following fields:

* int engines; // Number of engines on this space station

### Methods

* Constructor(String name, int seats, int engines): Assigns the parameters to the fields.
* getEngines(): int: Returns the number of engines.
* Override toString(): String: Returns the name and number of engines on this space shuttle.

## Main Method

Your main method should begin with an empty ArrayList of SpaceCraft objects.

Write a menu based application which does the following:

1. Adds a new station to the list. You will need to prompt for three parts of a station.
2. Adds a new shuttle to the list. You will need to prompt for three parts of a shuttle.
3. Display the number of space craft in the list.
4. Display the number total number of seats in all space craft in the list.
5. Display a description of all space craft.
6. Quit the software.

## Notes

* The only class which is allowed to have print statements is the class with your main method. If any methods have a print statement outside this class, you will get an automatic 0. I'm writing this because it is a bad programming practice to put print statements in methods outside of main.

## Example Run

In this example run, I add **Deep Space Station K-12** and the **Enterprise** to my space craft organizer. Your organizer should behave like this for full credit.

Welcome to James Church's Space Craft Organizer.  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 1  
  
Enter a new Space Station.  
Enter the name: K-12  
Enter the number of seats: 1000  
Enter the number of ports: 100  
  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 2  
  
Enter a new Space Shuttle.  
Enter the name: Enterprise  
Enter the number of seats: 500  
Enter the number of engines: 2  
  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 3  
  
There are 2 space craft.  
  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 4  
  
There are 1500 seats across all space craft.  
  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 5  
  
All Space Craft.  
Space Station K-12 has 100 ports.  
Space Shuttle Enterprise has 2 engines.  
  
1. Add a new space station.  
2. Add a new space shuttle.  
3. Display count of all space craft.  
4. Display count of number of seats.  
5. Display description of all space craft.  
6. Quit.  
Enter an option from 1 to 6: 6

## Documentation

Your source code must include the following documentation:

* Your name
* The class (CS 2070) and the section number (on ground is 08, online is W1).
* The date on which you turned in the assignment.
* A short description of the software. Usually a sentence or two is sufficient.

## Turning it in.

To turn in your application, find the folder containing your entire project (not the folder with the "java" file), zip it up, and turn it in.