<u>**COP2800C Java 1 Module 11 Graded Programming Assignment**</u>

In this assignment we will use Dates and Times, Git and GitHub.

This application continues our work with the SpaceX™ Starship launch system and Astronaut class which is used to populate the Starship. The source files we are working from are still the same:

- **Starship.java** which resides in the **com.spacex.vehicles** package
- **Astronaut.java**, which resides in the **com.spacex.personnel** package.

The main method for the Starship class is used as the application's main method; the program creates a Starship vehicle with an initial weight and altitude and adds astronauts. Each astronaut has a random height (cm) and weight (kg) within a specified range; when an astronaut is added, the total vehicle weight is updated with the astronaut's weight. In the practice exercise we also added the vehicle arrival time for each astronaut.

Use the process described below to obtain the source files, make your changes and then upload them as specified.

Obtaining the Source Files

We are still using Git and GitHub. If you do not already have Git installed, use the Horizon system for this.

Start by accepting the GitHub classroom invitation provided in the graded programming assignment's Canvas page for this module. When you accept the invite GitHub will create a new private repository (repo) for you.

After the repo has been created, clone it to a local system using Git. Use the "Code" button on the GitHub repo to copy the repo link, then paste it in a clone command the Windows command tool. In this example I am executing the clone in my downloads folder.

C:\users\yourId\Downloads\> git clone repolink

After cloning, you will have the source files available for editing in a folder which uses the name of your repo.

New Application Features

Add two new instance variables to the Astronaut class:

- A Period variable (import java.time.Period) which represents the time the astronaut will stay on the vehicle (in days).
- A LocalDate variable (import java.time.LocalDate, **not** LocalDateTime) which represents the astronaut's estimated date of departure, based on the Period variable in the previous bullet.

Modify the overloaded Astronaut constructor to accept a Period and a LocalDate parameter which are used to set the new instance variables.

Modify the Astronaut toString method to display these values. The Period variable should be displayed as days, the estimated date of departure variable should display the year, month, and day in **yyyy-MM-dd** format (there is no Time component associated with this variable).

In the addAstronaut method in the Starship class, declare a local **LocalDate** variable to set the time the astronaut is estimated to leave the vehicle. Initialize this variable **using a combination of the arrival date and the Temporal plus method** available in the LocalDate class. The plus method **must** be used for this assignment.

Committing Your Changes

Once you have verified your code builds and executes correctly, push the modified files back up to the GitHub repo using the following commands (run these from inside the local cloned repo folder):

> **git status**
> **git add** your modified files (.java source files only, do not add any other files)
> **git commit -m "descriptive message for these changes"**
> **git push**
> **git status**

The git status commands are only needed to determine the changes files and then to verify they have been pushed up to GitHub successfully.

Verify your changes have been stored in the repo by reloading the repo page; you can then view the modified files directly on GitHub.

You can repeat the above steps if you need to make any subsequent changes to your code. You only need to clone again if you are starting your work in a clean folder.

There is no Canvas submission for this assignment, your GitHub Classroom will be used for grading.

Sample Output:
The Starship information has not changed for this assignment, the additional Astronaut fields are shown below in a bold font:

> name: Megan McArthur
> height: 50.0 (cm)
> weight: 159.3 (kg)
> arrival: 2023-04-07 19:50:03
> **stay length: 90 days**
> **est. return 2023-07-06**