# Detailed Explanation of Program

This document provides a detailed explanation of the CosmicCampus Java program, including what each part of the code does.

## Import and Class Declaration

import java.util.\*;

• Imports all utility classes from java.util, such as Scanner, HashMap, ArrayList, UUID, Optional, and Random.  
• public class CosmicCampus: Declares the main class of the program. Everything happens inside this class.

## SpaceCadet Inner Class (Represents Students)

• private static class SpaceCadet: Defines a nested class to model a space cadet (student).  
• Fields:  
 - callsign: Name of the cadet.  
 - stardustID: A unique string ID.  
 - cosmicGrades: Maps enrolled courses to grades.  
• Constructor initializes cadet name and ID.  
• warpIntoCourse(SpaceCourse course): Enrolls cadet into a course with a warp animation.  
• simulateWarpAnimation(): Displays a loading bar animation.

## SpaceCourse Inner Class (Represents Courses)

• Models a course (planet).  
• Fields:  
 - planetCode: Short code of the course.  
 - cosmicName: Full course name.  
 - gravityCapacity: Max number of cadets.  
 - currentAliens: Cadets currently enrolled.  
 - totalColonized: Shared counter for enrollments.  
• Constructor prints a random sci-fi fact.  
• enrollCadet(): Enrolls cadet if there's space.

## Main Control Section (Menus and Input)

• Global Variables:  
 - cadets: Stores cadets using their stardustID.  
 - galaxy: List of available courses.  
• main(): Entry point of the program. Handles menu and commands.  
• addPlanet(): Adds a new course (planet) to the galaxy.  
• recruitCadet(): Creates and enrolls a new cadet.  
• beamGrade(): Assigns a grade and displays feedback.  
• printAsciiTitle(): Prints the title (placeholder or ASCII art).

## Summary Table: What Does What

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| Code Section | Purpose |
| import java.util.\* | Gives access to collections, Scanner, Random, UUID, etc. |
| SpaceCadet class | Models a student (name, ID, courses/grades) |
| warpIntoCourse() | Enrolls a cadet in a course with animation |
| simulateWarpAnimation() | Displays a fun loading effect |
| SpaceCourse class | Models a course with limited capacity |
| enrollCadet() | Adds cadet to course if there's room |
| generateSpaceFact() | Returns a random fun message |
| cadets and galaxy | Store all cadets and all courses |
| main() | Main loop for showing menu and handling input |
| addPlanet() | Adds a new course to the galaxy |
| recruitCadet() | Creates and enrolls a new space cadet |
| beamGrade() | Assigns a grade and gives feedback |
| printAsciiTitle() | Prints title art or placeholder |