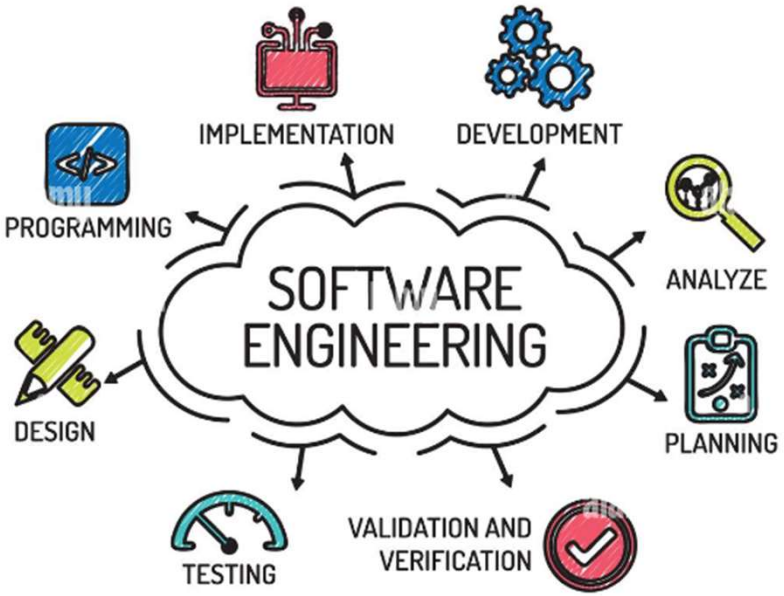
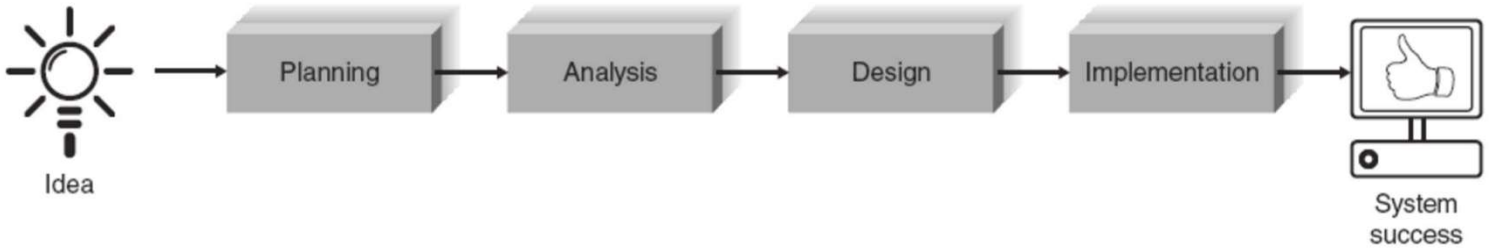


Software Engineering

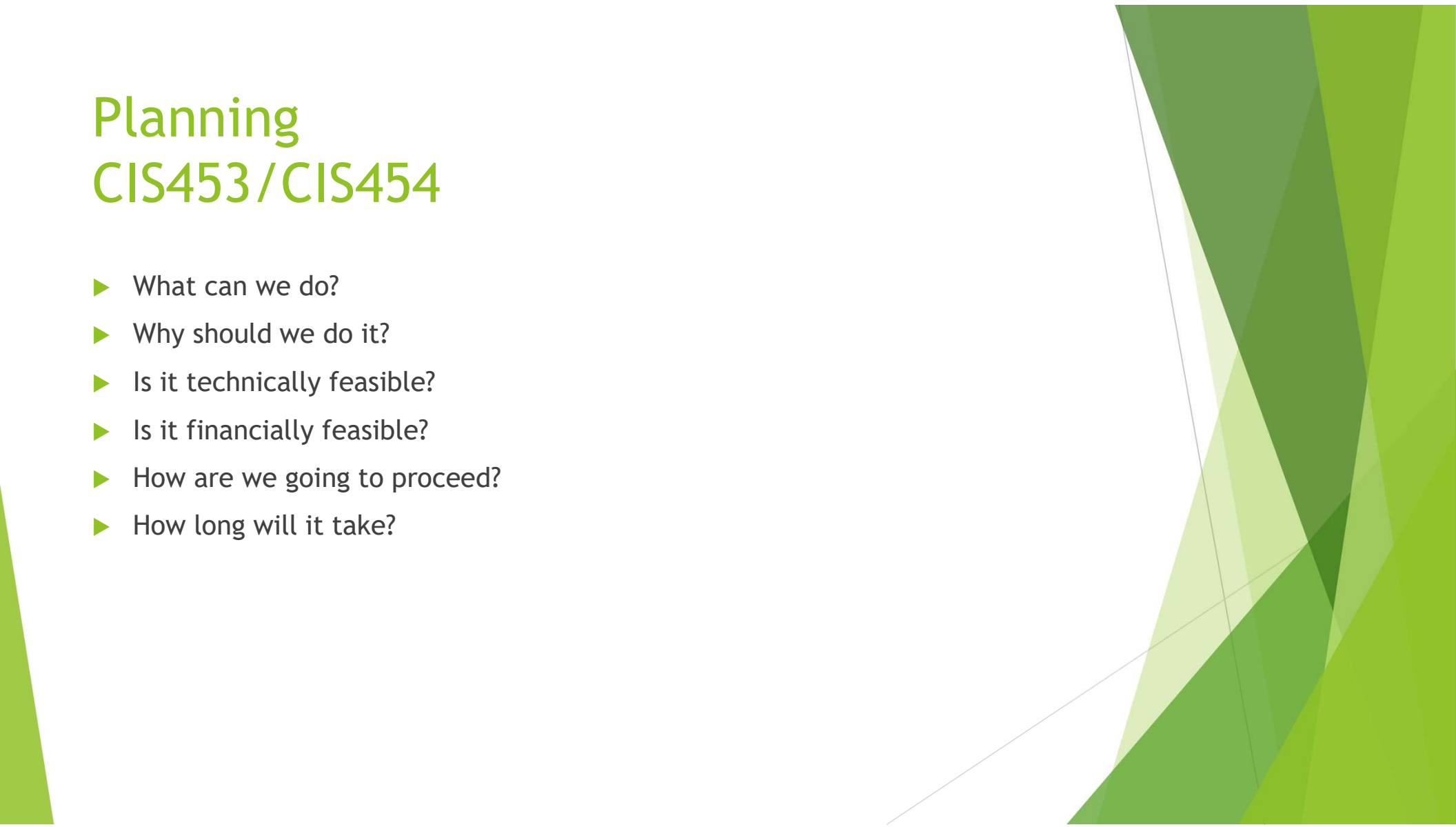
Putting 453 and 454 Into Perspective

Systems (Software) Development Life Cycle – SDLC



Planning CIS453/CIS454

- What can we do?
- Why should we do it?
- Is it technically feasible?
- Is it financially feasible?
- How are we going to proceed?
- How long will it take?

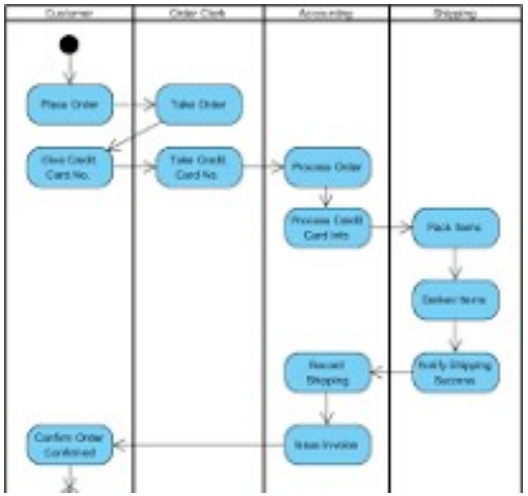


Analysis
CIS453 / CIS454

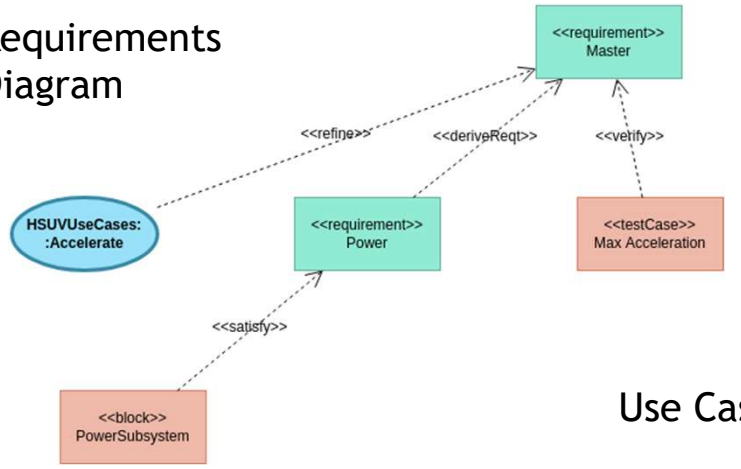
- UML Modeling to help fully understand what it is we are going to build; and to some extent, how are we going to build it.
- Helps to make sure that all stakeholders are on the same page. Stakeholders include those using the system, as well as those building the system.
- Very little if anything from Analysis is directly implementable.
- Main Artifacts
  - Individual UML Analysis Assignments
  - Group UML Analysis Assignments
  - Software Requirement Specification and Midterm Presentation

Analysis CIS453 / CIS454

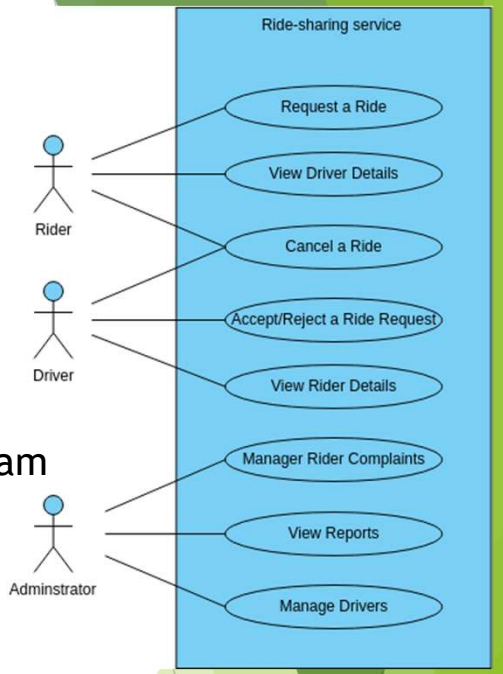
Activity Diagram



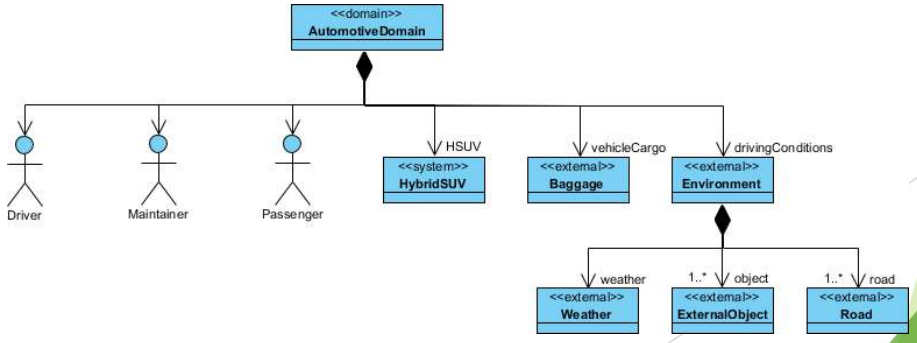
Requirements Diagram



Use Case Diagram



Block Definition Diagram



Analysis
CIS453/CIS454

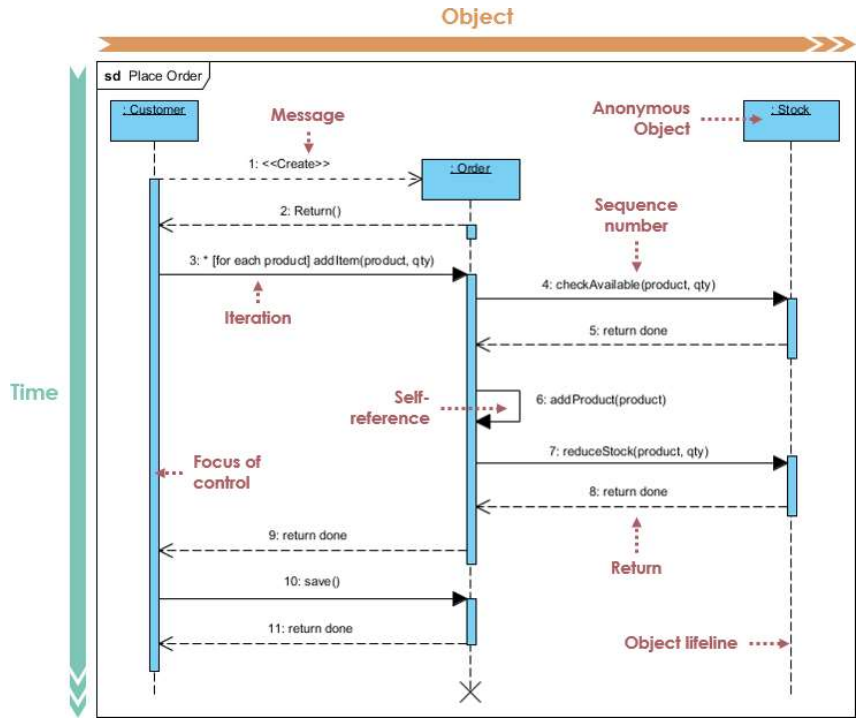
- **Requirements Diagram** – Models both the User Requirements and System Requirements in UML. This allows easy cross referencing with other requirements, Use Cases, BDD components, classes, test cases, etc.
- **Use Case Diagram** – Models capabilities of the system from how the key stakeholders will use/interact with the system.
- **Block Definition Diagram** – Models the major components of the system and their static interfaces/relationships.
- **Activity Diagram** – Models the dynamic aspects of the Use Cases to help fully understand how the system will be used, and what components of the system will be required to implement each Use Case.

Design
CIS453/CIS454

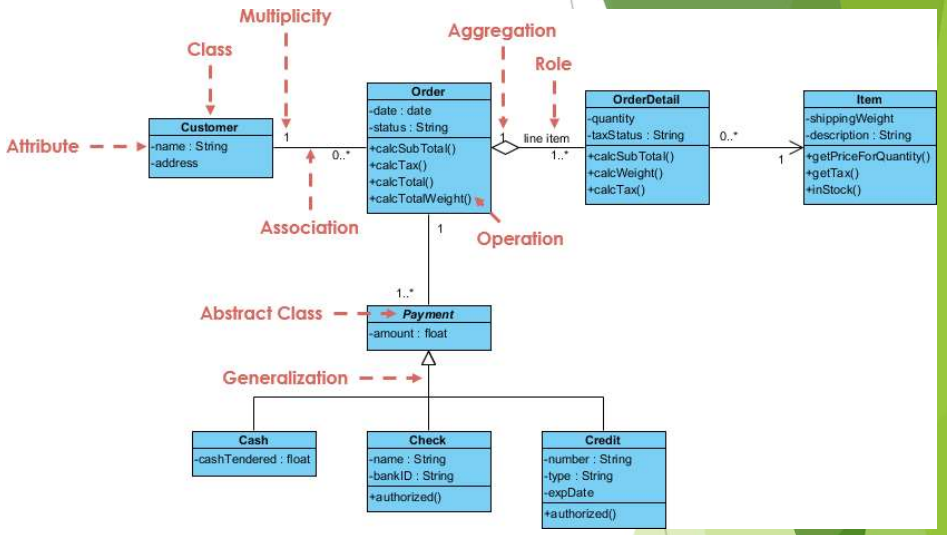
- Provides details on how we are going to implement the system; both hardware and software.
- The design is used to define system details.
- Software Engineers will be modeling actual classes that can be later implemented.
- Main Artifacts
  - Individual UML Design Assignments
  - Group UML Design Assignments
  - Design Document and Final Presentation

Design
CIS453 / CIS454

Sequence Diagram

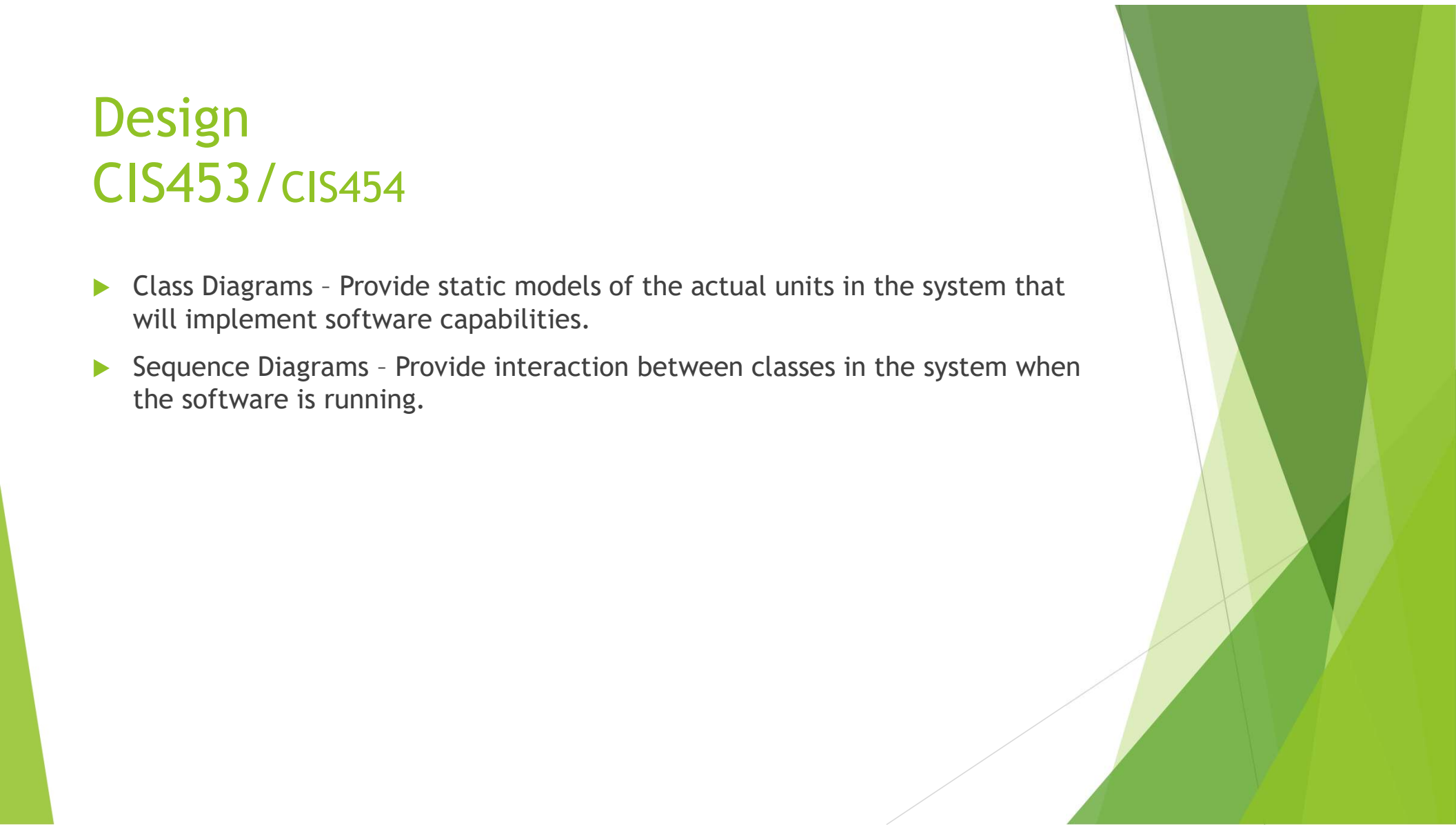


Class Diagram



Design
CIS453/CIS454

- Class Diagrams – Provide static models of the actual units in the system that will implement software capabilities.
- Sequence Diagrams – Provide interaction between classes in the system when the software is running.



Implementation CIS454

- Actual coding, testing and integration of software from Design.
- While it is assumed most of the Planning, Analysis and Design will be ready for coding in CIS454, it is anticipated and expected that the Agile process will require rework of these artifacts during CIS454 Sprints.
- During CIS454, we will learn how to code and test properly.