

Design Documentation

EECS 2311 - Software Development Project

Click to edit Master text styles

Second level

Third level

Fourth level

Fifth level

Wednesday, March 20, 2019

Design document

- Documents the high-level structure of the software system
- What are the **important** classes?
- What are the **important** methods?
- How do they interact with each other?
- What are **important** objects that get created at runtime?
- How are they connected to each other?

Design document

- Audience: Developers
 - The customer / user never sees the design document
- Goal: An experienced developer that is unfamiliar with the system should be able to read the document and get a clear idea of the system's design (ideally also the rationale for the design).

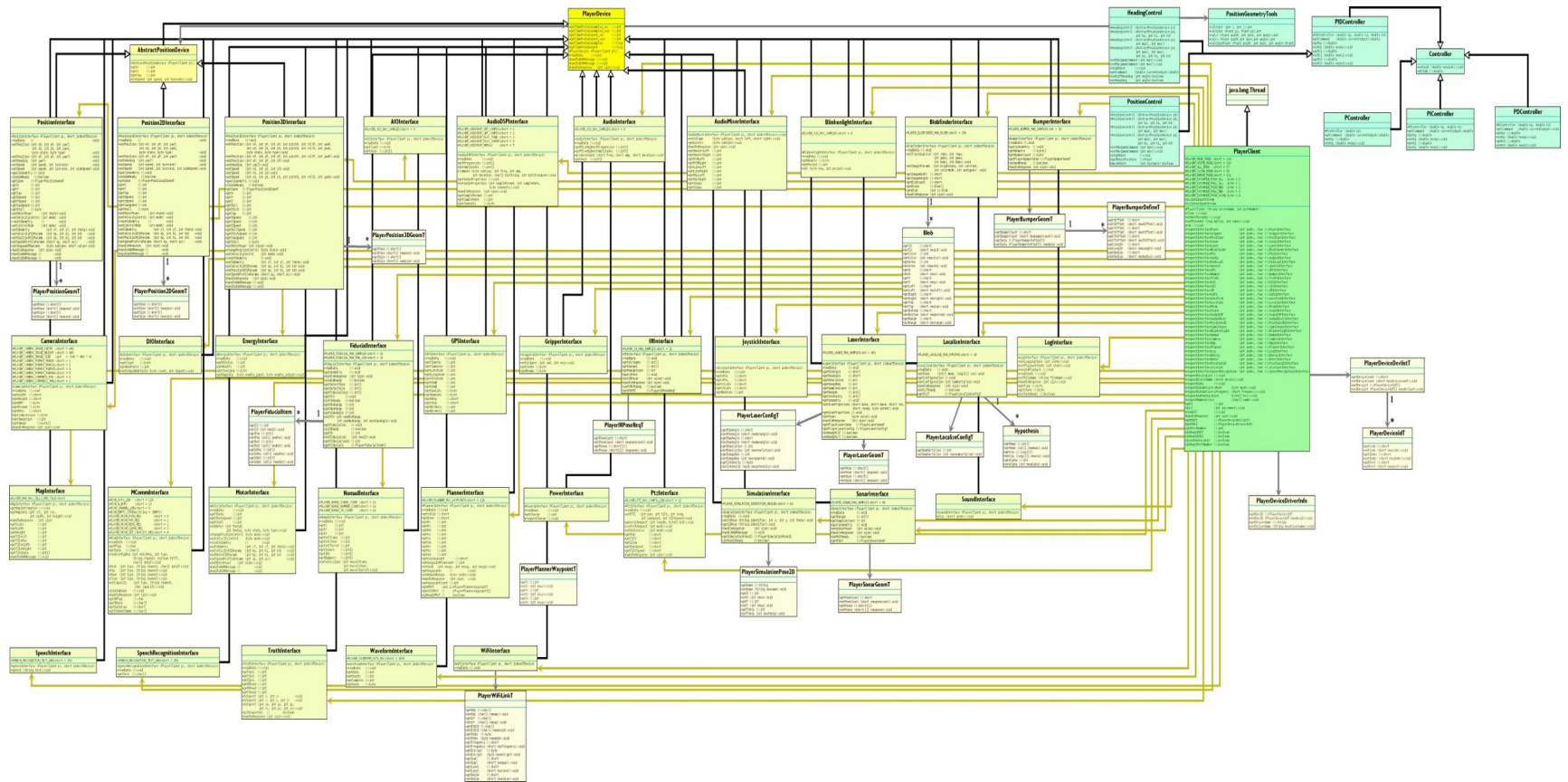
Diagrams are crucial

- A design document without diagrams is a poor design document
- Need at least:
 - A class diagram depicting the important classes and how they are connected (static view)
 - A sequence diagram depicting important objects and how they interact at runtime (dynamic view)

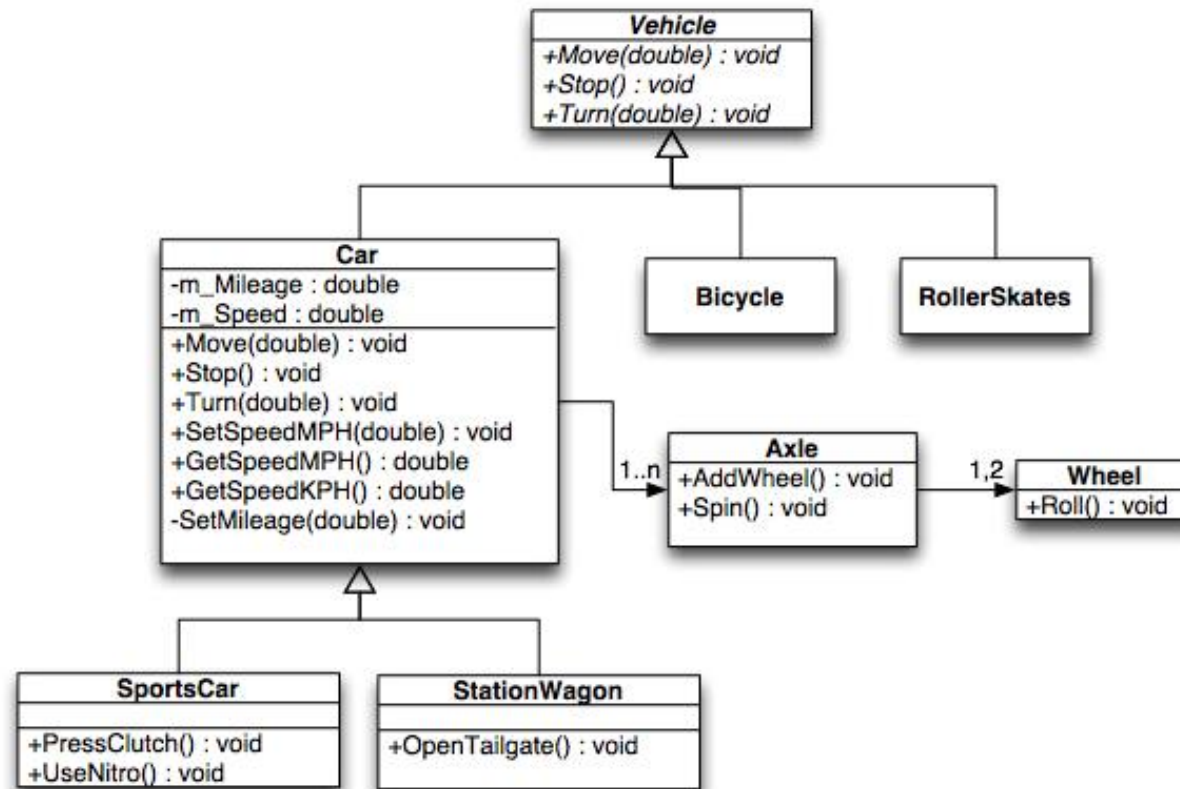
Class diagrams

- Select the important classes / methods of your system and present the relationships between them in a UML class diagram
- Draw multiple diagrams rather than a single huge one
- **DO NOT** show every class in the system and / or every method in each class
- Automatic tools do a poor job of creating class diagrams. Draw your own diagrams!

Example of poor class diagram



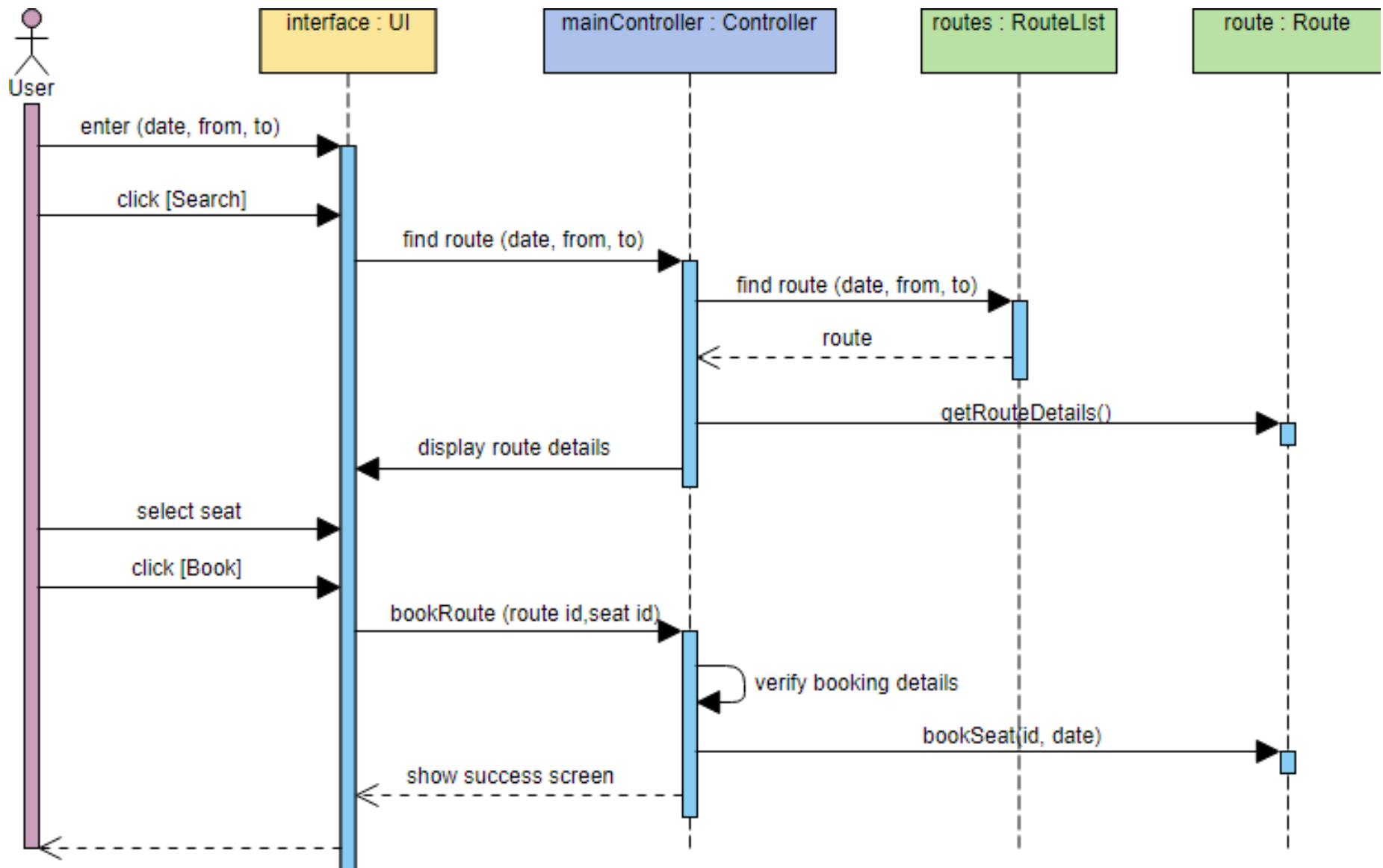
Example of useful class diagram



Sequence diagrams

- Depict how objects interact at runtime
- Time passes from top to bottom
- Need to draw sequence diagrams for all **important** runtime scenarios of your system
- Again, show relevant / useful information, omit unnecessary details
- See tutorial links on course website

Sample sequence diagram



Learn a diagram tool

- As a software engineer, you will often need to create design diagrams
- Find a drawing tool that works for you and learn it well
- See link to list of tools on course website
- draw.io is a free web-based tool that supports UML diagrams

Lab Task

- Draw a class diagram describing the high level structure of your project
- Draw a sequence diagram describing an important scenario in your project
- Describe both diagrams to the TA in the lab
- Your design document submission must contain such diagrams