Design Documentation

EECS 2311 - Software Development Project

Tuesday, March 2, 2021

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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?

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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).
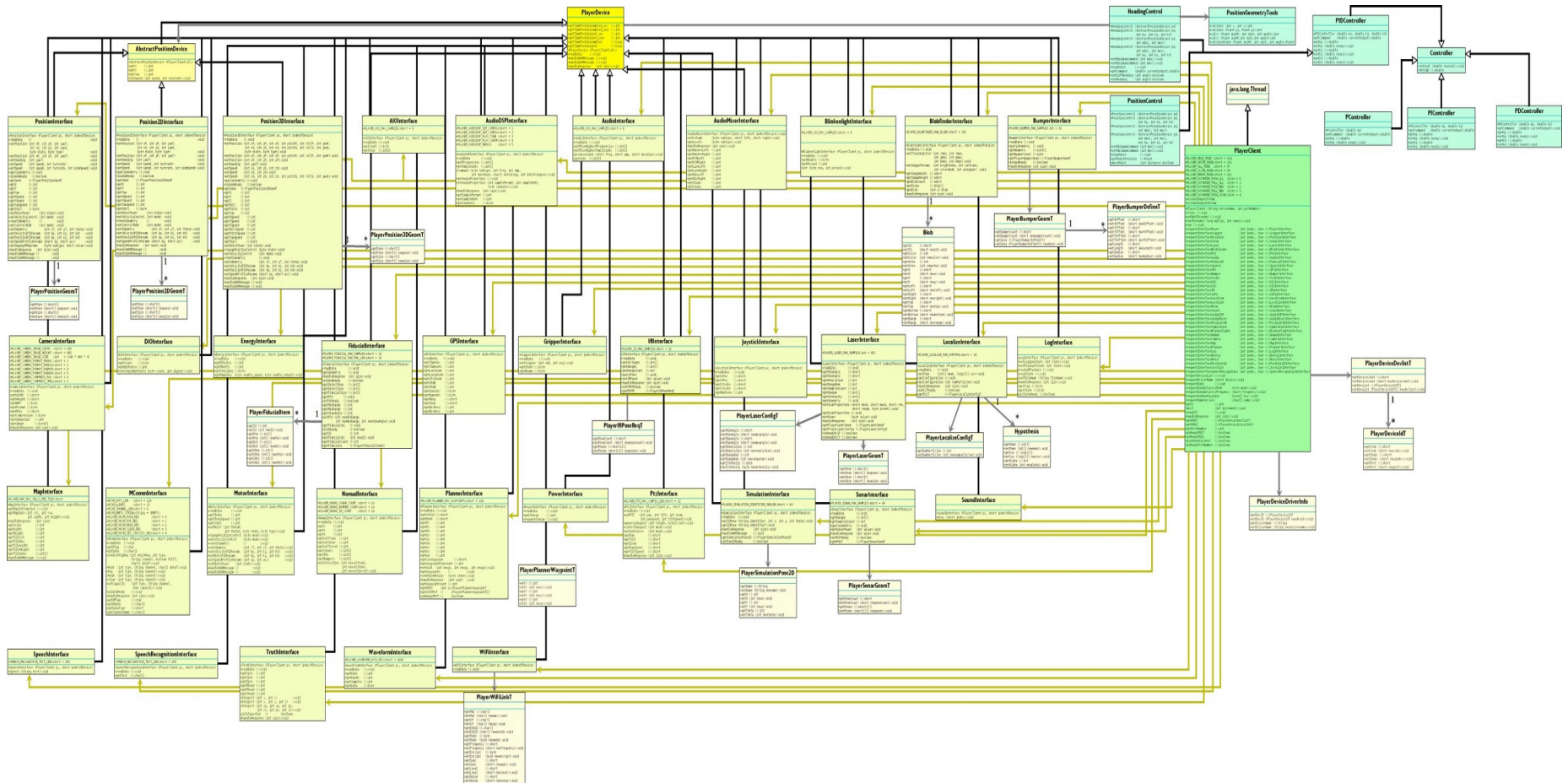
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Diagrams are crucial

- 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)
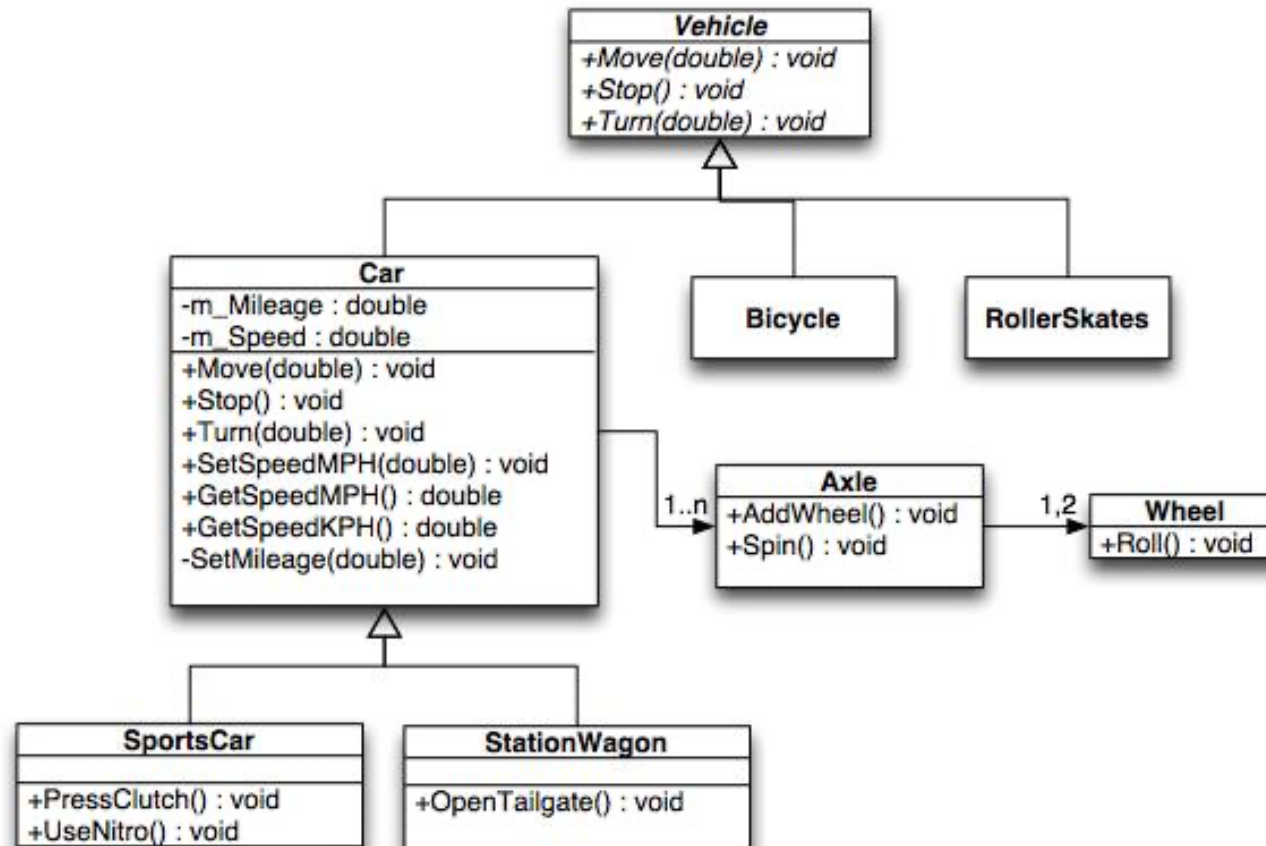
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Class diagrams

- 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!

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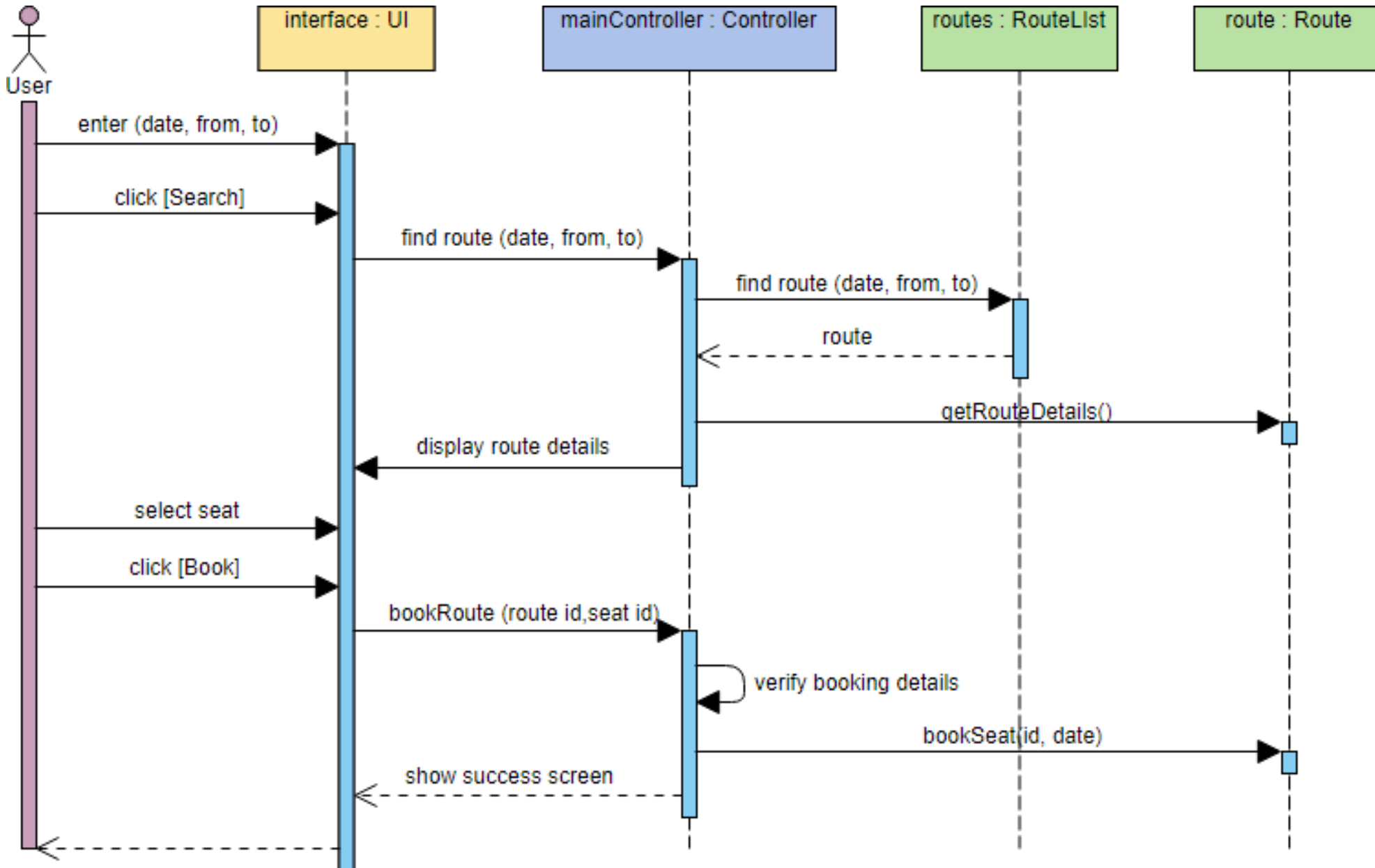
Example of poor class diagram

Example of useful class diagram

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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

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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

- `diagrams.net` is a free web-based tool that supports UML diagrams

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