SE 3112

SOFTWARE ARCHITECTURE

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CHAPTER 4:

Modeling Context Diagram

Topic Overview

- Context Diagrams
- Purpose of a context diagram
- Audience of a context diagram
- Example using a case study

What is Context Diagram?

- A diagram that helps stakeholders understand where the software system fits in their enterprise and how it interacts with other systems.

- It provides a big picture of the actors of the application and other software system that it interacts with.

What is Context Diagram?

- It is a high level view of the software application to be developed or being developed to address a business problem.
- It help us to understand the boundaries of the system.
- In a nutshell, it helps to figure out the contact, the environment and how different things interact.

Important Notes on Context Diagrams

- Context diagram should be high level and all the technical details should be avoided.

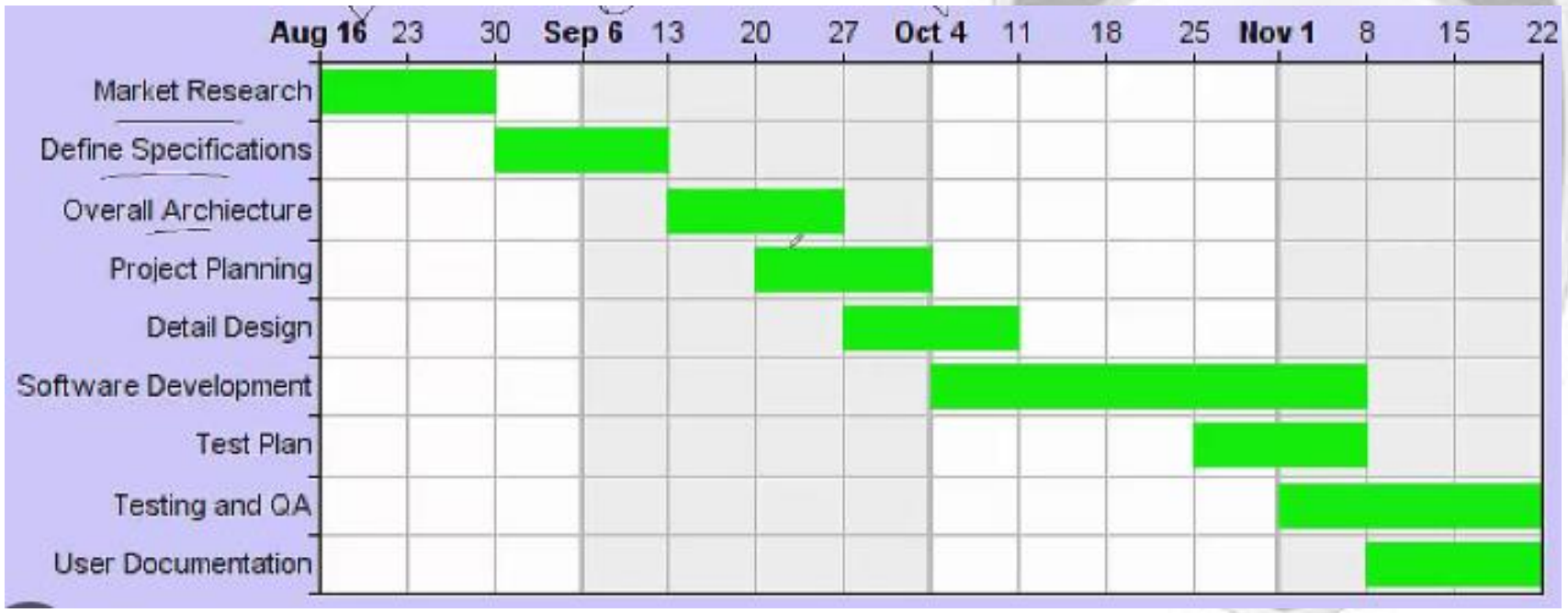
- It should be kept as simple as possible so that it will be easy to understand.

Purpose of a Context Diagram

- It provides/defines the boundaries of the system
- It identifies the users and other software that the application interacts with.
- It identifies the main interaction points and helps to communicate the descriptions related to boundaries, actors and flow of data in a system.

Purpose of a Context Diagram

- It is used at the initial conversation related to project to ensure that everyone is on the same page on the functionality and purpose of the application that is being developed



ABC Bank Case Study

- ABC commercial bank that has grown over the years from been a micro finance bank to a fully-fledged commercial bank. Customers have been making their transactions with the bank using mainframe banking system. The bank wants to expand her business by developing an internet and mobile banking application that will use the existing mainframe and emailing system for operation.

- The core banking system services are exposed to a banking customer who can access it via web or mobile application.

ABC Bank Case Study

- Customers of the bank should be able to use the internet/mobile banking system to view information about their bank accounts and to make payments. The internet/mobile banking system uses the existing mainframe banking system to perform this operation and uses the bank existing email system to send emails to customers.

ABC Bank Case Study

- **Requirements**
- With the introduction of the web services, Habib bank expects the application to be up 24/7.

- Habib bank want to be able to use the data generated from the transactions for analysis to know her strengths, weaknesses, opportunities and threats. This analysis should be done by the data team.

- The application should be able to handle millions of customers.

ABC Bank Case Study

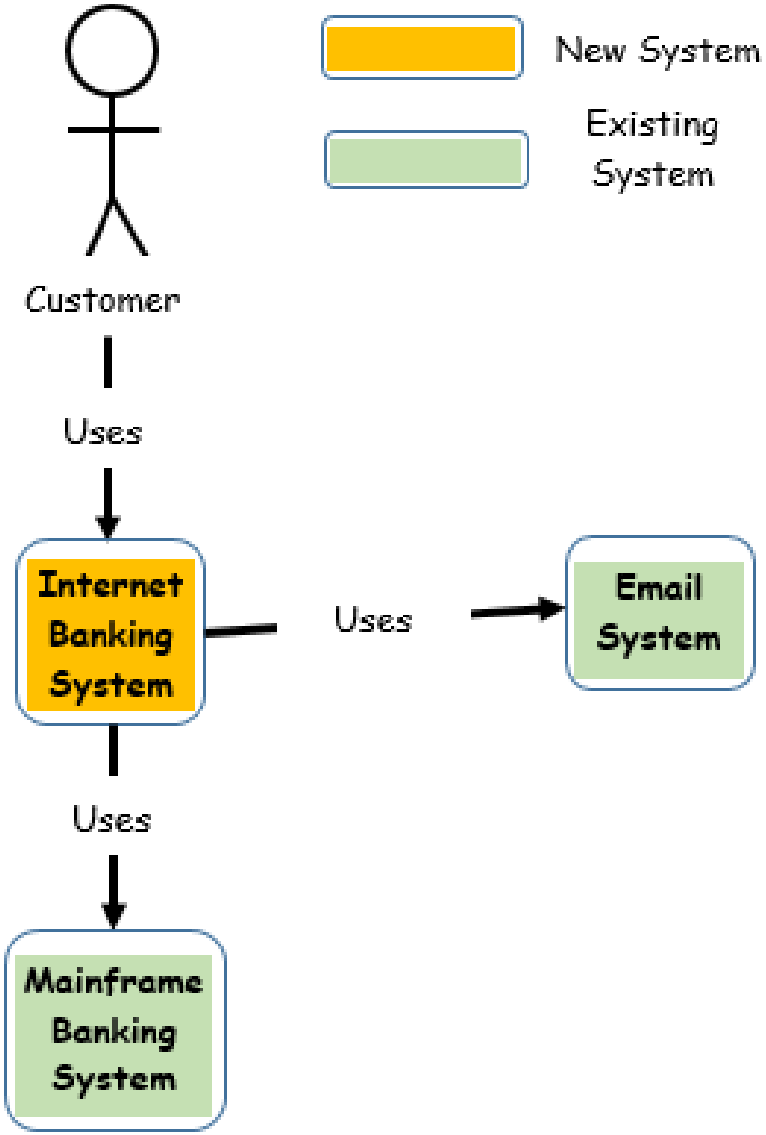
- **Requirements**
- All the transactions need to be secured and should be audited.

- The user interface should be simple for the customers to use

- The application should use the existing mainframe and emailing system.

- The application should be able to run on numerous browsers.

Draw a Context Diagram



Audience of a Context Diagram

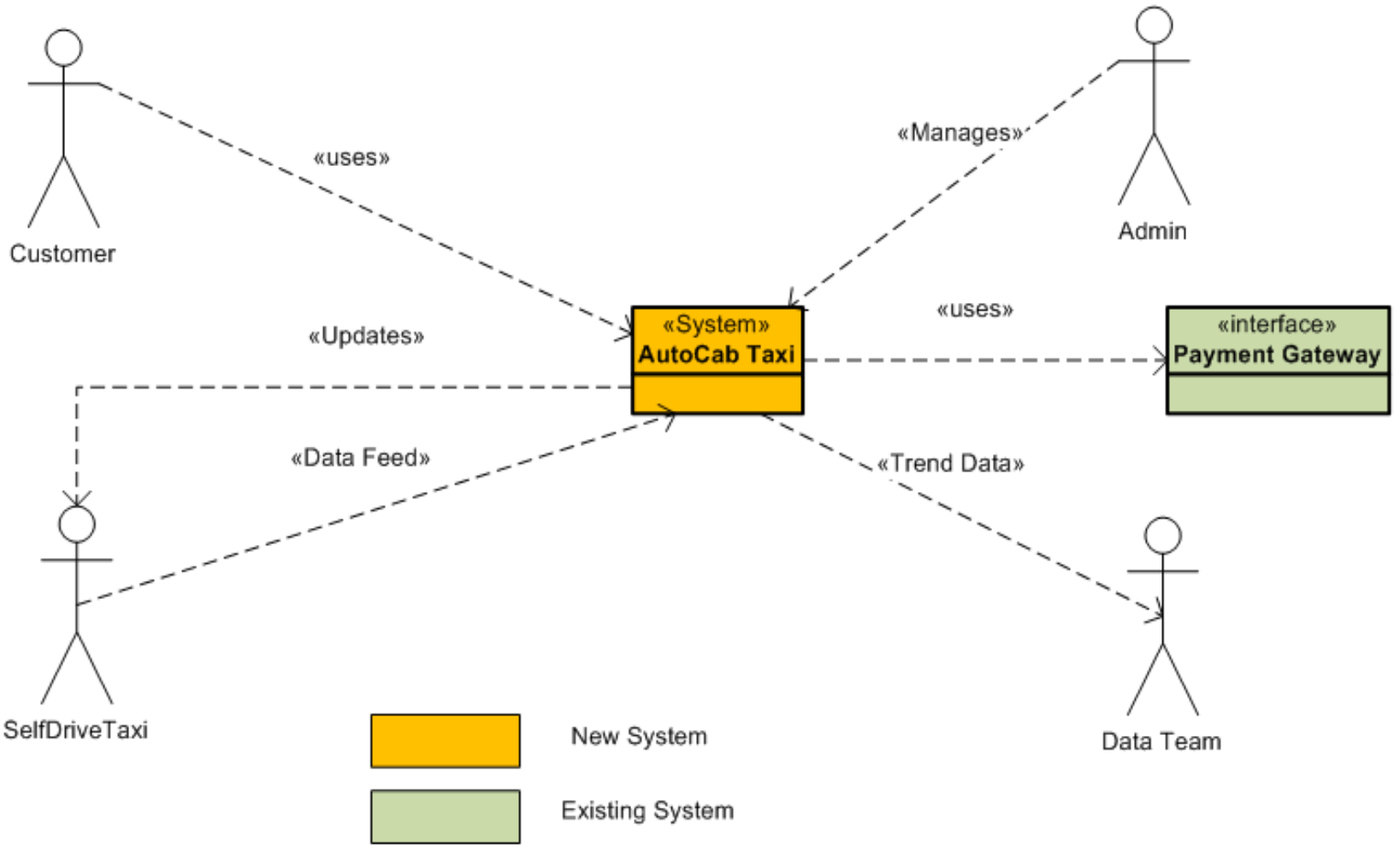
- CEO
  - Best understand the high level view – core functionality
- Architecture team
- Project Manager
  - provides the overview of the complexity of the application.
  - The CD helps the PM to plan for the resources early on in the project.
- Product Owner/Business Owner
  - Use the CD to check whether the business problem is well understood.
  - Checks whether all the interfacing application have been taking into consideration

- These conversations using the CD is cheaper to have early in the project.

Context Diagram Example

- Autocab Self Driving Taxi System Context Diagram
- The AutoCab system interacts with 4 primary actors and 1 existing system.
- Actors:
  - Customers
    - Uses the AutoCab system to do booking
  - Admin
    - Pushes notification updates to both customer and self drive taxi
  - Self Drive Taxi
    - Feeds data like location data, engine data etc..
    - Gets updates from AutoCab System
  - Data Team
    - Gets data from the AutoCab System for analysis
  - Payment Gateway
    - Interacts or interface with the new system (AutoCab) for all payment transactions.

Context Diagram Example



Q & A