

Laboratory 4

Data flow modelling with CASE tools – Sequence Diagram and Class Diagram

1. Introduction and Purpose of Experiment

Students will apply data flow modelling to develop the low level design for given scenario

2. Aim and Objectives

Aim: To develop low level software design for a given requirements specification using Structured analysis and Design Technique

Objectives: At the end of this lab, the student will be able to

- Identify functions in modules
- Identify Inputs, Outputs and Data dependencies for functions
- Create low level design document for a given SRS

3. Experimental Procedure

- Work in teams of 4 students
- Each team should read the problem statement and identify requirements as a group
- Each team will then confirm the requirements and document the requirements in an low level design document
- Each individual will then write their lab manual, documenting their observations

4. Presentation of Results

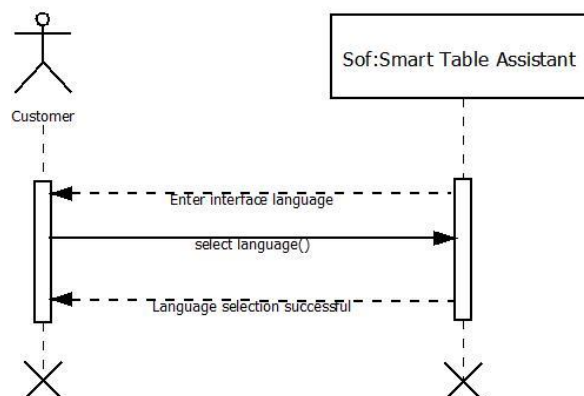


Figure 4.1 Sequence diagram for Choosing Language

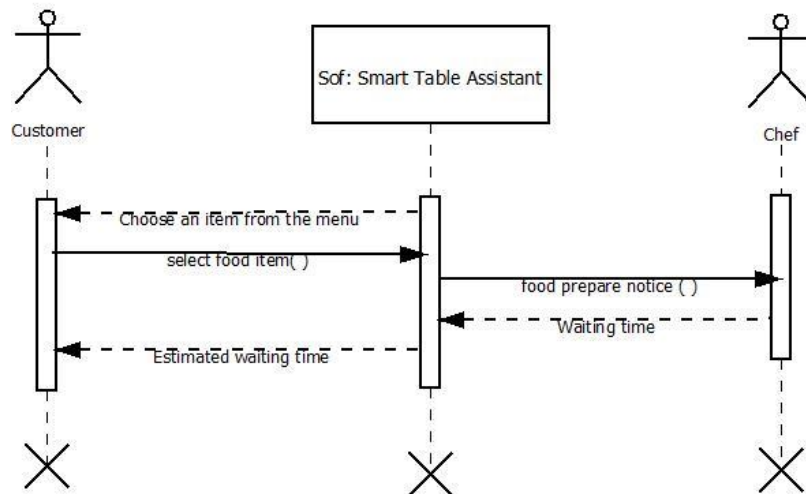


Figure 4.2 Sequence diagram for ordering food

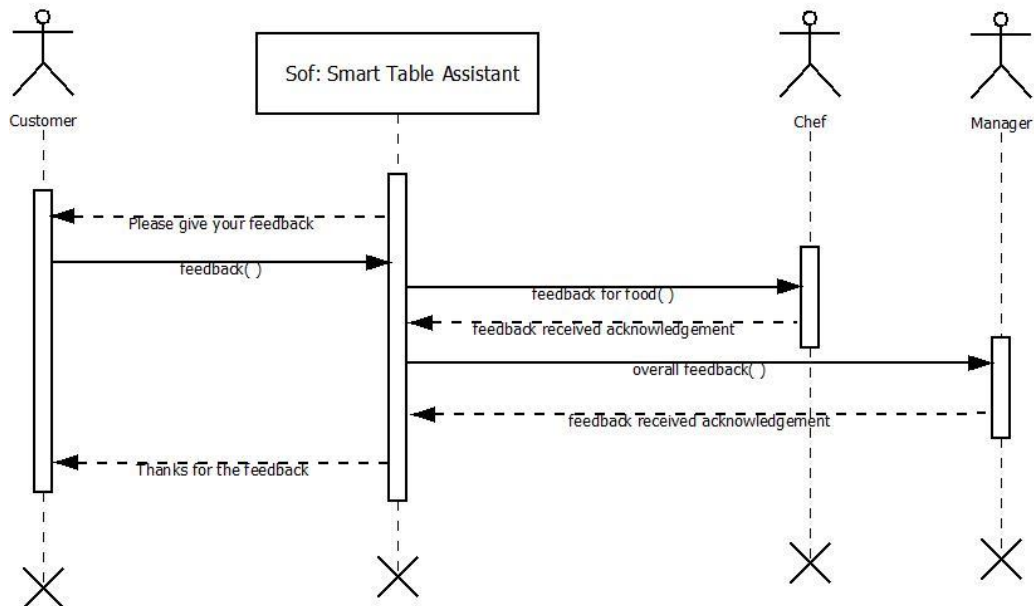


Figure 4.3 Sequence diagram for feedback

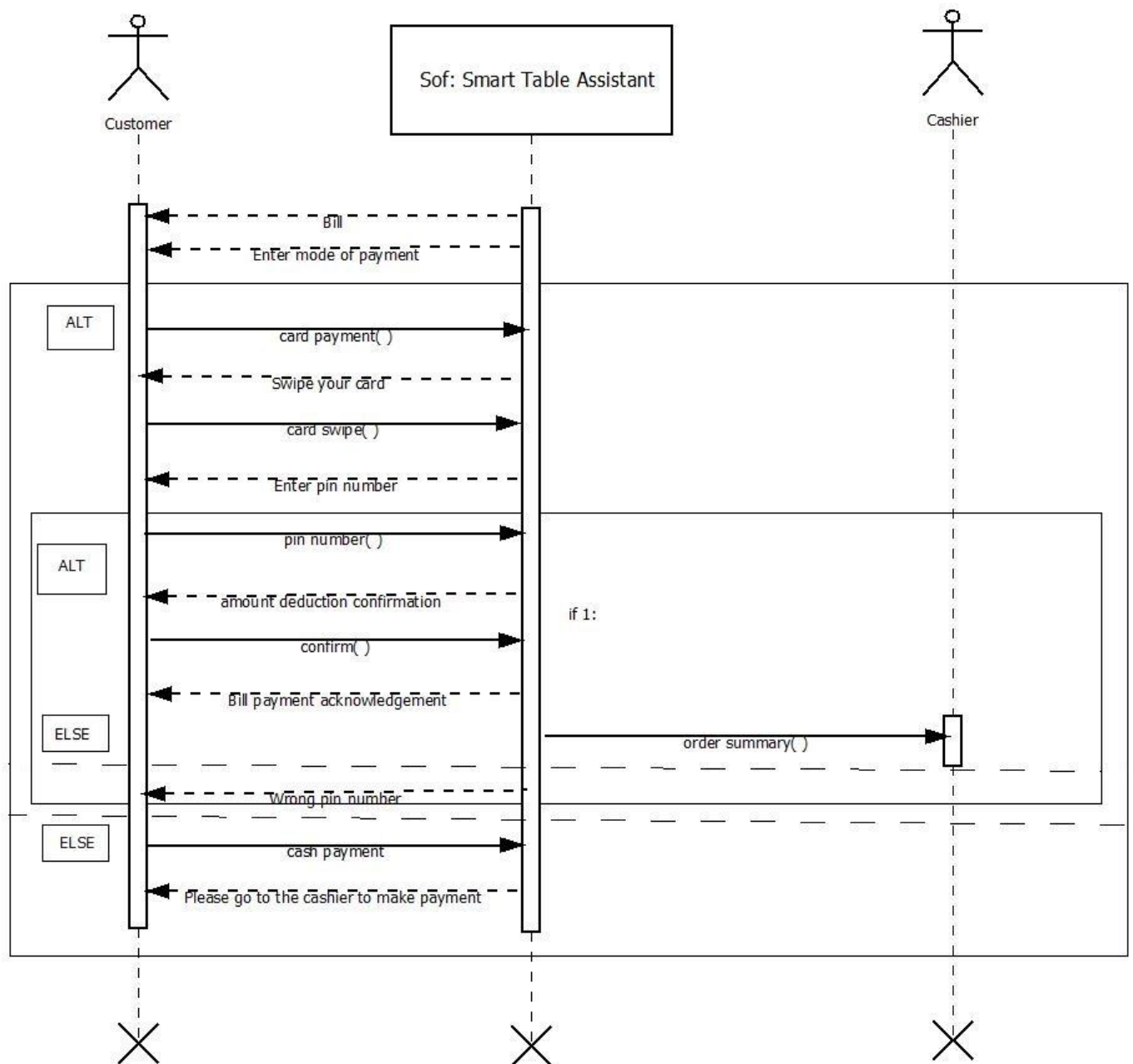


Figure 4.4 Billing Sequence Diagram

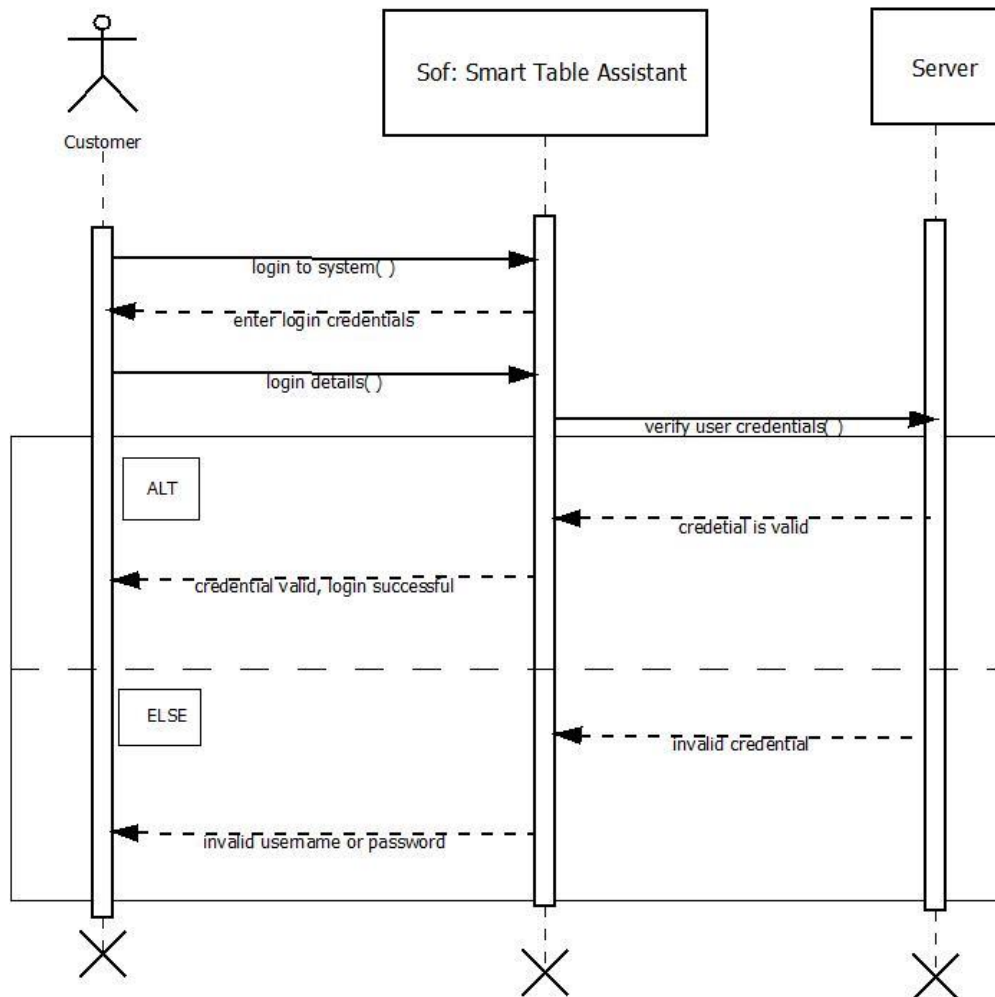


Figure 4.5 Connect to LAN sequence diagram

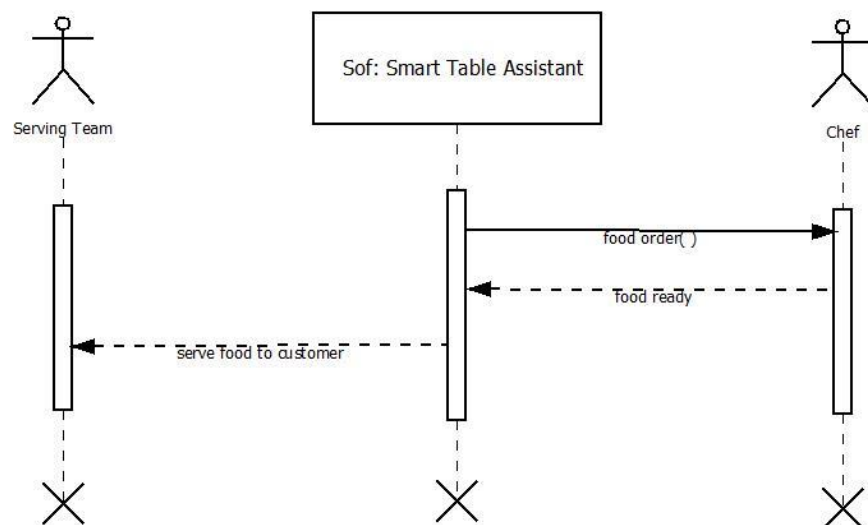


Figure 4.6 Notifying serving team Sequence Diagram

5. Analysis and Discussions

Sequence diagram shows *how actors interact with system* through the use cases. There are two types of sequence diagrams:

- *High Level sequence diagram*

These diagrams show the occurrence of events when the actor interacts with system in a more abstract level. This will give the basic understanding of the system to the engineer who develops the system

- *Low Level sequence diagram*

The low-level diagrams is used in the actual implementation of the system. This diagram provides the exact details of what happens when there is an interaction between each use case and the user.

Class diagrams are the designed using *object oriented approach* and follows every rule of OOP. Here various classes are identified and their attributes & behaviour is also mentioned in the diagram which is exactly what is done while developing the system.

6. Conclusions

The diagrams are handy in developing the system in the development phase. The OOP design is close to the real world analysis.

7. Comments

1. Limitations of Experiments

None as noted.

2. Limitations of Results

None as noted.

3. Learning happened

Developing sequence diagram and class diagram using OO approach was learnt.