



Vidyavardhini's College of Engineering & Technology

Department of Computer Engineering

Academic Year : 2024-25

Experiment No. 2
Design DFD for a case study
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Aim: To design DFD for a case study.

Objective: To construct DFD for Currency Detector for the Visually Impaired.

Theory:

Data Flow Diagram:

Data flow diagram is graphical representation of flow of data in an information system. It is capable of depicting incoming data flow, outgoing data flow and stored data. The DFD does not mention anything about how data flows through the system.

There is a prominent difference between DFD and Flowchart. The flowchart depicts flow of control in program modules. DFDs depict flow of data in the system at various levels. DFD does not contain any control or branch elements.

Types of DFD:

Data Flow Diagrams are either Logical or Physical.

- **Logical DFD** - This type of DFD concentrates on the system process, and flow of data in the system. For example in a Banking software system, how data is moved between different entities.
- **Physical DFD** - This type of DFD shows how the data flow is actually implemented in the system. It is more specific and closer to the implementation.

DFD Components:

DFD can represent Source, destination, storage and flow of data using the following set of components -



- **Entities** - Entities are source and destination of information data. Entities are represented by a rectangle with their respective names.



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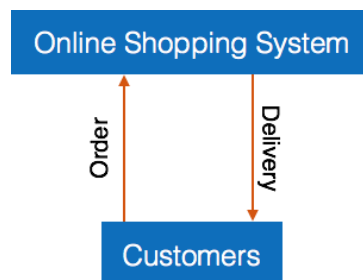
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- **Process** - Activities and action taken on the data are represented by Circle or Round-edged rectangles.
- **Data Storage** - There are two variants of data storage - it can either be represented as a rectangle with absence of both smaller sides or as an open-sided rectangle with only one side missing.
- **Data Flow** - Movement of data is shown by pointed arrows. Data movement is shown from the base of arrow as its source towards head of the arrow as destination.

Levels of DFD:

- **Level 0** - Highest abstraction level DFD is known as Level 0 DFD, which depicts the entire information system as one diagram concealing all the underlying details. Level 0 DFDs are also known as context level DFDs.



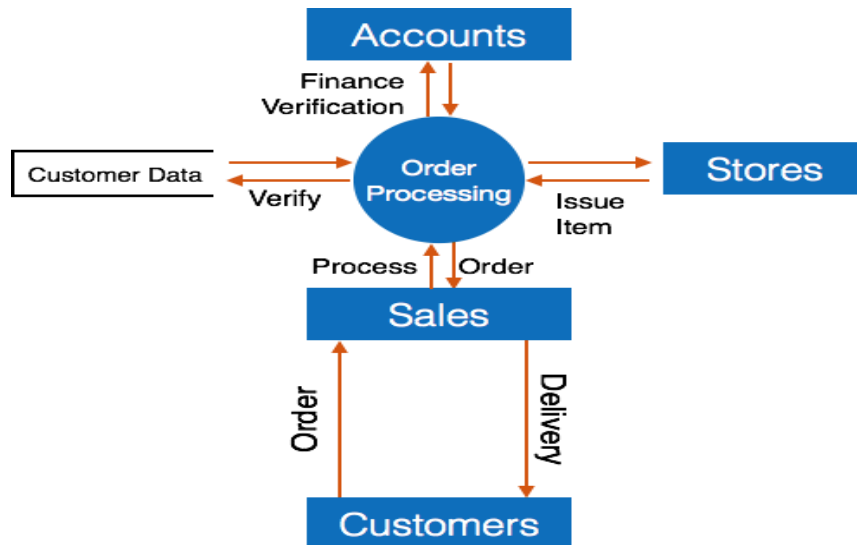
- **Level 1** - The Level 0 DFD is broken down into more specific, Level 1 DFD. Level 1 DFD depicts basic modules in the system and flow of data among various modules. Level 1 DFD also mentions basic processes and sources of information.



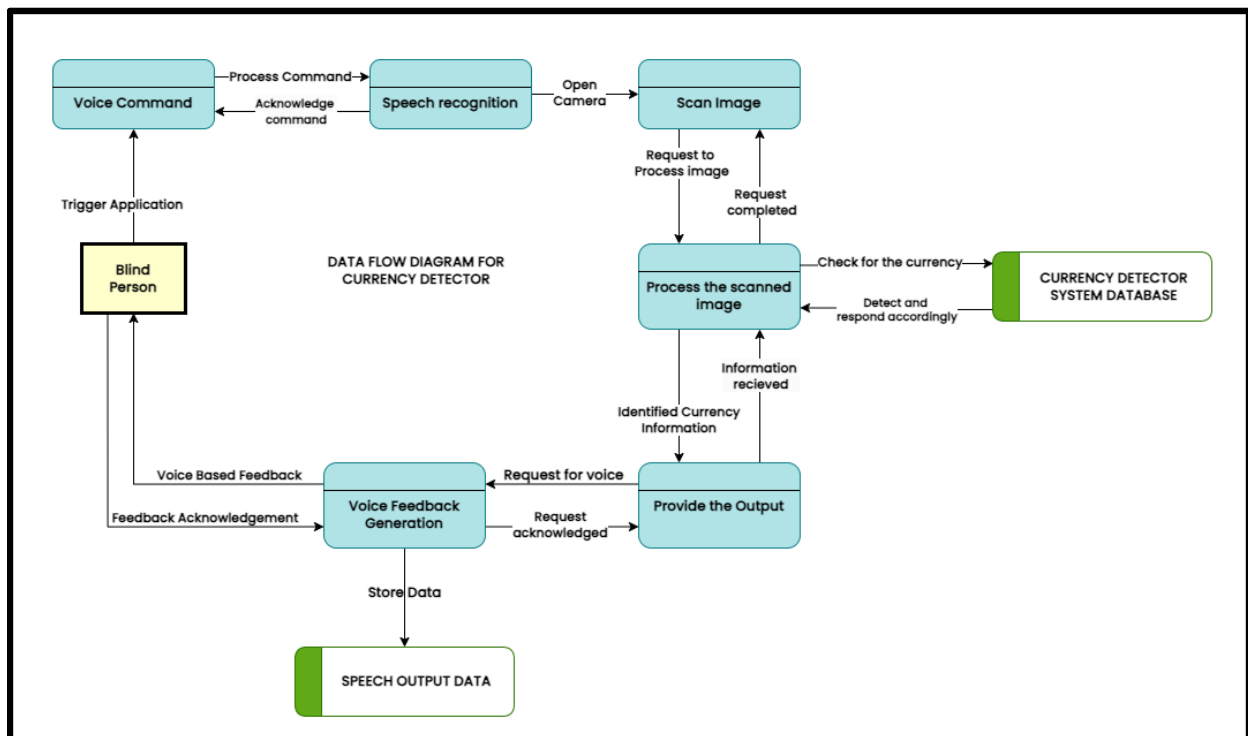
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Department of Computer Engineering

Academic Year : 2024-25



Solution:





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Conclusion: In this experiment, we successfully designed a Data Flow Diagram (DFD) for the Currency Detector tailored for the visually impaired. By mapping out the flow of data, we gained a clearer understanding of how the system operates and how information is processed. This exercise not only deepened our grasp of DFD concepts but also highlighted the importance of creating accessible technology. Ultimately, this project underscored the potential impact of thoughtful design in improving everyday experiences for individuals with visual impairments. We look forward to applying these insights in future projects, fostering innovation that truly serves the community.