B.Sc. in Computer Science and Engineering

School of Science and Technology

Bangladesh Open University

CSE22P5 Information System Analysis and Design Lab

Lab Report – VIII

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Experiment No: VIII.

Date: 19 Apr 24.

Title: A general Data Flow Diagram (Level 0 DFD) for an airlines reservation system.

Context: Imagine you are designing an Airlines Reservation System for "Beyond Sky", a major airline carrier. This system will allow customers and the administrator to manage reservations, access customer information and flight information.

Objective:

- To demonstrate the ability to create a Level 0 DFD for a system using proper DFD symbology.
- To analyze and document data flow between external entities and a system in the context of an Airlines Reservation System.

Theory: The key points required for the Data Flow Diagram are –

i. **Data Flow Diagram**:- A Data Flow Diagram (DFD) is a visual tool that maps out the flow of information through a system. It uses symbols like rectangles, squares, and arrows to show how data moves between different parts of the system and external entities (users, other systems).

ii. **Level 0 DFD**:- A Level 0 DFD, also known as a context diagram, offers a high-level overview of an entire system. It is like a wide-angle lens capturing the system as a single process entity. This process interacts with external entities (users, other systems) through data flows. The

Level 0 DFD focuses on what data is exchanged, not the internal workings of the system itself.

iii. **Components of DFD**:- A Data Flow Diagram uses four symbols to map information flow: rounded boxes represent processes that transform data, arrows depict the flow of data itself, rectangles with two lines symbolize data storage and rectangles represent external entities like users or other systems that interact with the system by exchanging data.

iv. **Airlines Reservation System**:- A Level 0 DFD for an Airline Reservation System shows the system as a single box exchanging data with external entities. Passengers and flight details flow in, while flight availability, confirmations, and updates flow out. This simple view captures the system's essence: managing data flow for reservations.

Required Tools and Softwares:

- Sketch Pen & Pad (for sketching the model)
- Wondershare EdrawMax (for designing the diagram)
- MS Word (for writing and furnishing)

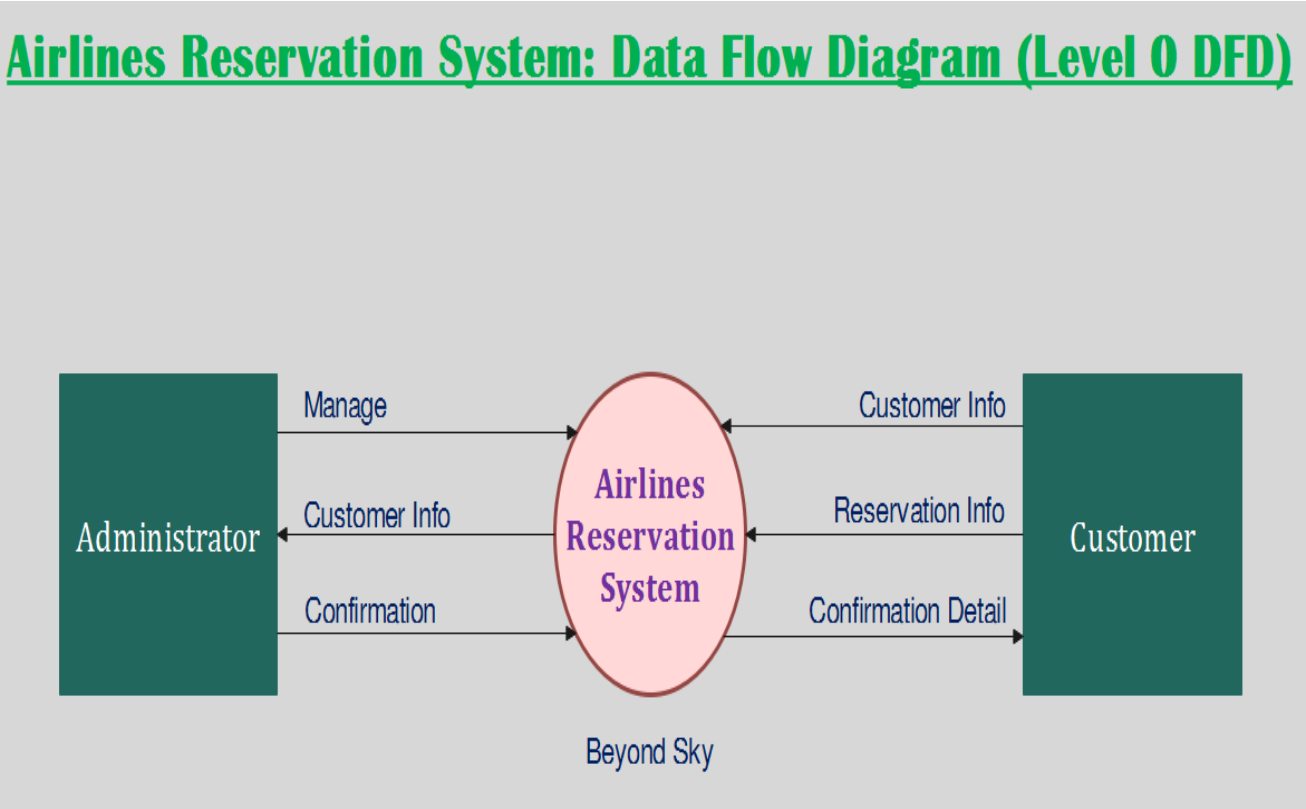
Execution:

- **Sketching The Diagram Using Sketch Pen & Pad**
  - Understand system requirements.
  - Draw system and entities.
  - Indicate data flow with appropriate arrows.
  - Insert labels to represent information clearly.
  - Design layout on pad allocating space for each component appropriately.
  - Carry out refinements before implementation in software.

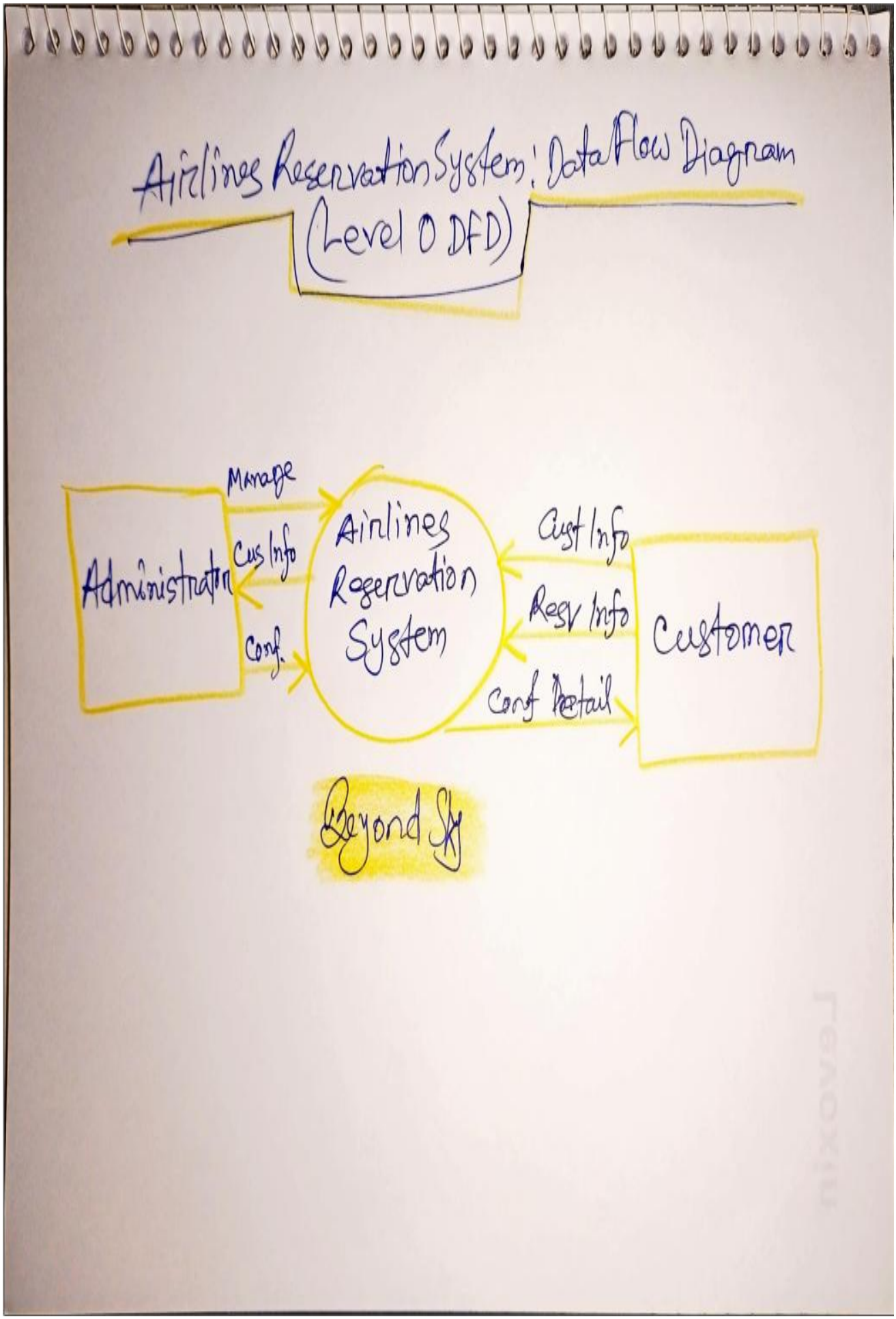
- **Drawing the diagram using Wondershare EdrawMax**
  - Launch Wondershare EdrawMax and create a new DFD drawing.
  - Use symbols and connectors to represent all functionalities.
  - Arrange sections logically and add labels & texts for clarity.
  - Review and revise as needed.

- **Formatting the Report using MS Word**
  - Open MS Word and create a new document.
  - Set up layout and formatting preferences.
  - Type content for each section.
  - Organize content with appropriate headings and subheadings.
  - Insert the drawn class diagram from Wondershare EdrawMax.
  - Review the entire document for coherence and professionalism.

Output: Screenshot from Wondershare EdrawMax -



Appendix: Screenshot from sketch pad -



References:

- Books
  - "Fundamentals of Systems Analysis and Design" by Cathy Whitten, Kevin D. Whitten, Lonnie L. Bentley
  - "Data Flow Diagrams: Techniques for the Analysis and Design of Systems" by Chris Gane & Trish Sarson

- Websites
  - https://en.wikipedia.org/wiki/Data-flow_diagram (Wikipedia article on Data Flow Diagram)
  - https://www.visual-paradigm.com/tutorials/how-to-create-data-flow-diagram/ (Visual Paradigm guide on How to Create Data Flow Diagram)

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