Green University of Bangladesh

Department of Computer Science and Engineering (CSE)
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Course Title: Integrated Design Project I
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Section: 221 D1

Lab Experiment: Draw the DFD of School Management System.
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Lab Project Status	
Marks:	**Signature:**
Comments:	**Date:**

1. Draw the DFD of Library Management System.

Draw the DFD of School Management System.

2. OBJECTIVES/AIM

The objective of this lab report is to create and explain both Level 0 and Level 1 Data Flow Diagrams (DFDs) for a School Management System (SMS). These diagrams provide a graphical representation of the system's data flow, showing how the system interacts with students, teachers, administrator and how processed the interaction and delivered.

3. PROCEDURE/ANALYSIS/DESIGN

The School Management System is designed to allow students and teacher to request the data and interact between them. It has two primary processes: Request the system to fetch data. The system retrieves information from various data stores such as lists of classroom, student result, student information,teacher information,student attendance etc and provides the requested information to the student,teacher and administration.

Tools and Methodology

- **Processes** are represented as circles, showing how the system manipulates data.

- **Data Flows** are depicted with arrows, illustrating how data moves between processes, external entities, and data stores.

- **External Entities** (such as the student, teacher, administrator) are represented as rectangles, showing how they interact with the system.

4. IMPLEMENTATION

The implementation of Level 0, Level 1 DFD is implemented respectively for a School management System.

The Level 0 DFD provides a high-level view of the system.It shows the primary process of the School Management System and how it interacts with external entities like Students, Teacher and interaction between them. The focus at this level is on the main system, which handles data requests and provides the requested information.

Level 0 DFD Components

- External Entities:

    - Administration: Manages teacher and student information.
    - Teacher: Accesses student information.
    - Student: Accesses personal data.

- Process:

    - School Management System: Central system handling user requests and managing data.

- Data Flow:

    - Administration-SMS: Add/Update/Retrieve teacher and student data.
    - Teacher-SMS: Retrieve student information.
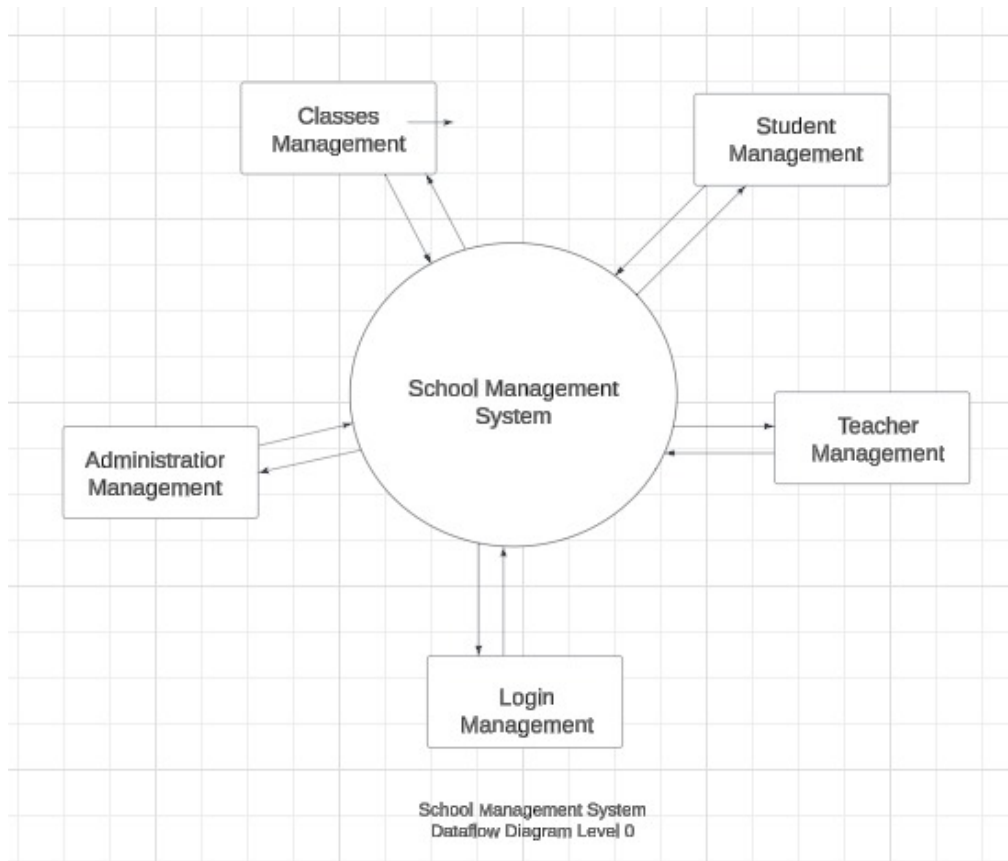   - Student-SMS: Retrieve personal information.

Figure 1: DFD Level 0

Level 1 DFD Components

- External Entities:

  - **Administration:** Manages teacher and student data.
  - **Teacher:** Views student information.
  - **Student:** Views personal data.

- Process:

  - **Manage Teacher Data:** Add/update/retrieve teacher details.
  - **Manage Student Data:** Add/update/retrieve student details.
  - **Access Student Information:** Teachers view student data.details.
  - **Access Personal Information:** Students view their own data.

- Data Flow:

  - **Administration - Processes:** Manage teacher/student data.
  - **Teacher - Access Student Information:** View student data.
  - **Student - Access Personal Information:** View personal data.

- Data Stores:

  - **Teacher Data:** Stores teacher records.
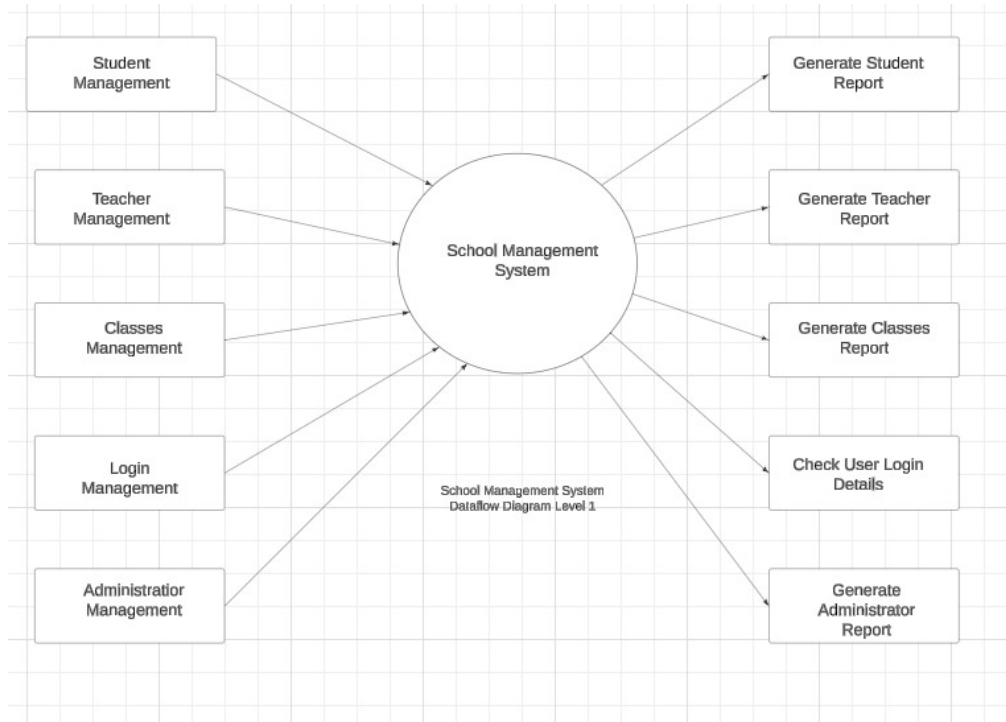 - **Student Data:** Stores student records.

Figure 2: DFD Level 1

5.ANALYSIS AND DISCUSSION

DFD Level 0: The Level 0 DFD provides a basic overview of the School Management System (SMS), focusing on three main entities: Administration, Teacher, and Student. The Administration manages both teacher and student data, while Teachers can only access student information and Students can access their own data. The system centralizes all data management, ensuring security and simplifying roles. This diagram offers a broad view of the system's structure without going into implementation details.

DFD Level 1: The Level 1 DFD decomposes the central process of the School Management System into detailed sub-processes. It shows how the Administration manages teacher and student data, including adding, updating, and retrieving information. Teachers can access student data through the "Access Student Information" process, while students can view their own data via the "Access Personal Information" process. Additionally, the diagram introduces data stores, which hold teacher and student information, allowing for efficient data retrieval when needed. This level provides a deeper understanding of the system's internal operations and the specific interactions between users and the system.

6. CONCLUSION

In conclusion, the Level 0 and Level 1 DFDs provide a clear and structured overview of the School Management System. The Level 0 DFD offers a high-level view of the major entities and their interactions, while the Level 1 DFD delves deeper into the specific processes and data flows within the system. Together, these diagrams effectively outline the system's functionality, highlighting key user roles, data management processes, and internal operations, forming a solid foundation for further system development and analysis.