Bangladesh University of Business and Technology

Project Report

Course Title	:	System Analysis and Design Lab
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Report On	:	Data Flow Diagram of Smart Task

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Data Flow Diagrams (DFDs) for the Smart Task System:

The Smart Task System DFDs illustrate how users and admins interact with the platform to manage tasks, reminders, and feedback. Data flows through processes like authentication, dashboards, and reporting, while being stored in dedicated databases. Each level of the DFD moves from a simple overview to detailed operations, giving a structured picture of how the system handles data efficiently.

DFD Level - 0: Context Diagram for the Smart Task:

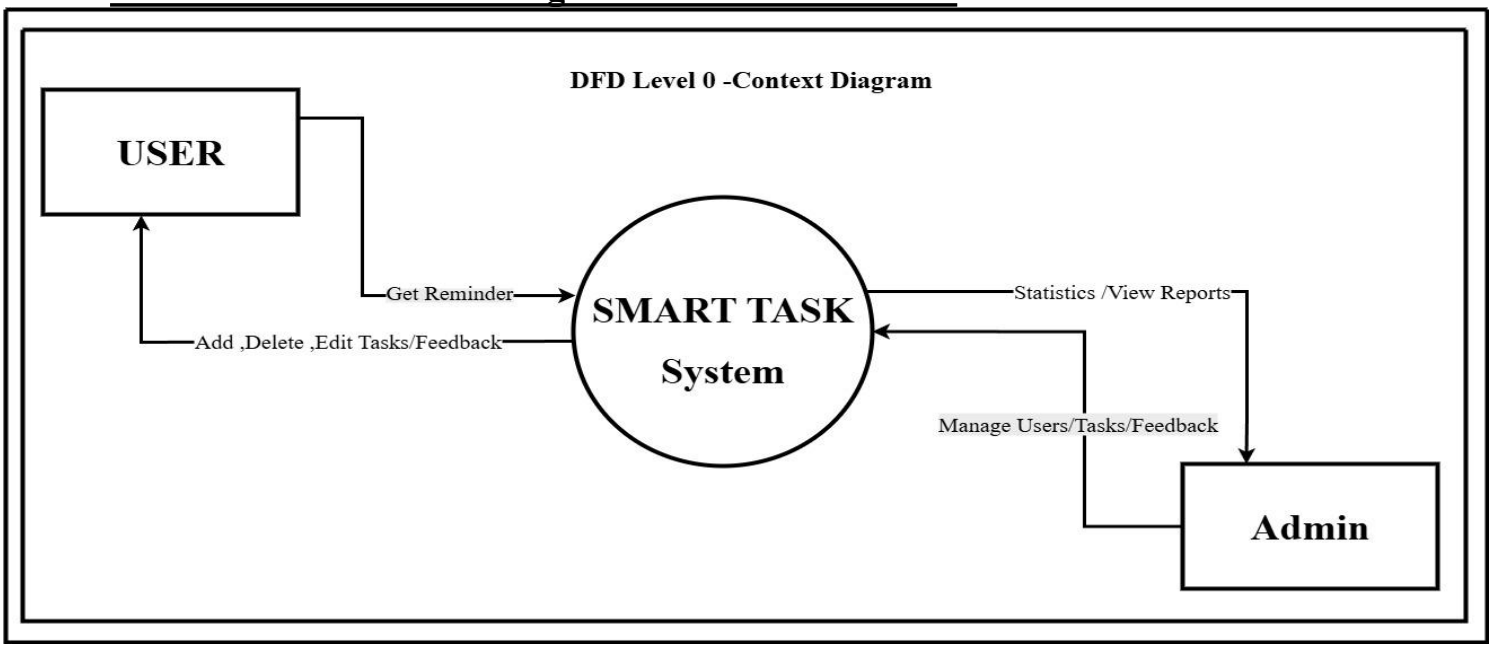

Figure-1: Level-0 - Context DFD

1. Purpose:

- To show the system as a single entity interacting with external entities (User, Admin).
- Provides a high-level overview without showing internal processes.
- Helps stakeholders quickly understand what the system does and how it exchanges data.

2. Process:

System Management – represents the entire Smart Task app as a single process.

3. External Entities:

- User – interacts with the system by providing input (login, tasks, feedback) and receiving output (task lists, reminders, feedback confirmation).
- Admin – interacts with the system by managing statistics/insights, users, and their feedback.

4. Data Flow : Data moves between users, admin, and the system.

DFD Level - 1: Main Processes of the Smart Task:

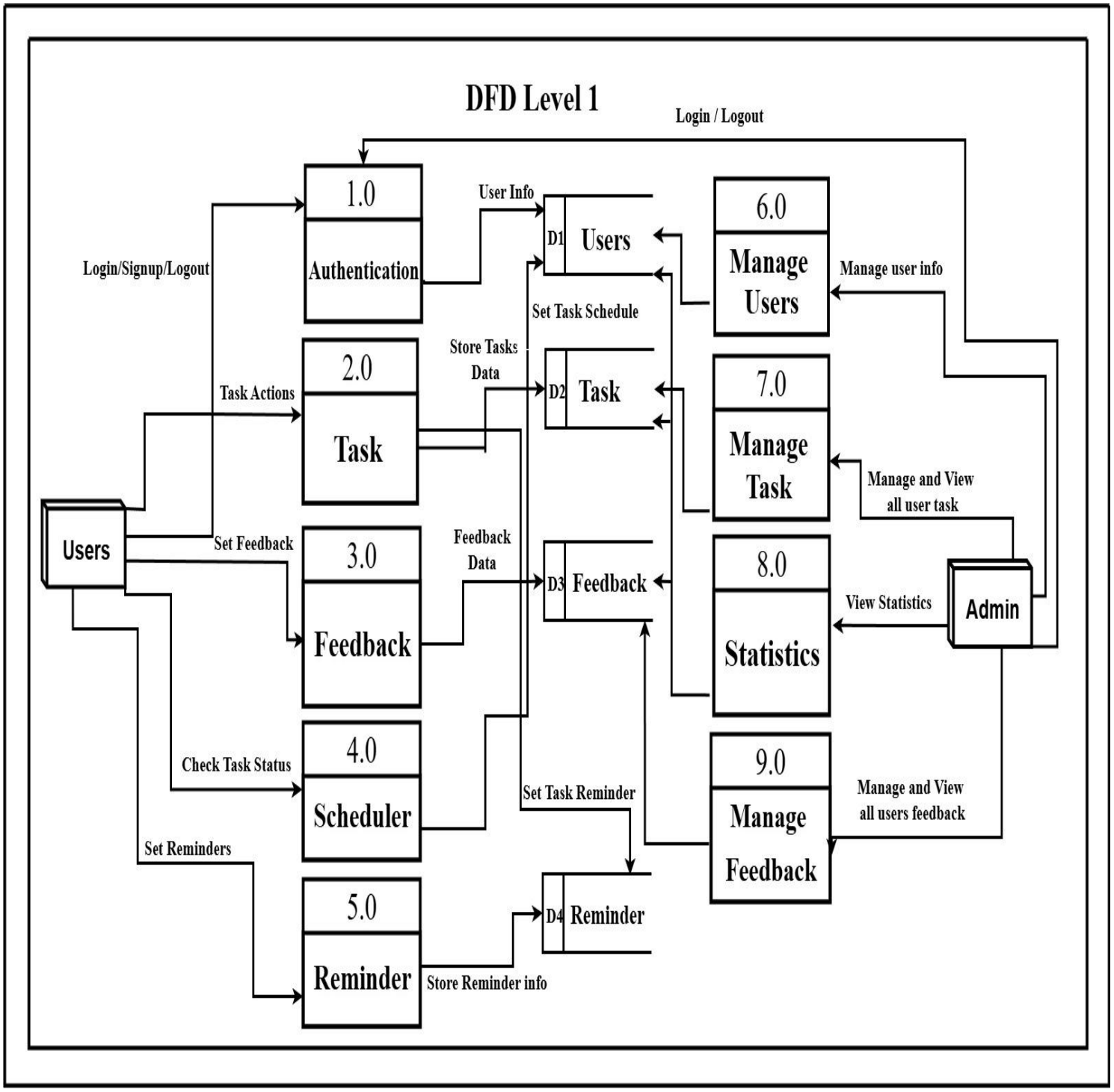

Figure-2: DFD Level - 1: Main Processes

1. Purpose:

- To illustrate the main processes of the Smart Task system.
- To show how users and admins interact with the system.
- To depict data flow between processes and databases.
- To identify the datastores and the type of data they hold.
- To help understand system structure, workflow, and interactions for analysis and
- development.

2. Components:

- External Entities: User, Admin
- Processes: Login & Authentication (1.0), Task Management (2.0), Feedback Handling (3.0), Admin Dashboard (4.0)
- Data Stores: D1 (Users DB), D2 (Tasks DB), D3 (Reminder DB), D4 (Feedback DB)

3. Tasks and Data Flow:

- User → Login & Authentication (1.0): Sends login credentials.
- Login & Authentication (1.0) → D1 (Users DB): Verifies credentials.
- User → Task Management (2.0): Submits task details.
- Task Management (2.0) → D2 (Tasks DB): Saves or updates tasks.
- Task Management (2.0) → D3 (Reminder DB): Schedules reminders.
- User → Feedback Handling (3.0): Submits feedback.
- Feedback Handling (3.0) → D4 (Feedback DB): Stores feedback.
- Admin → Admin Dashboard (4.0): Requests reports/statistics.
- Admin Dashboard (4.0) → D1, D2, D3, D4: Retrieves data for reports and insights.

DFD Level - 2: Decomposing a Process for the Smart Task:

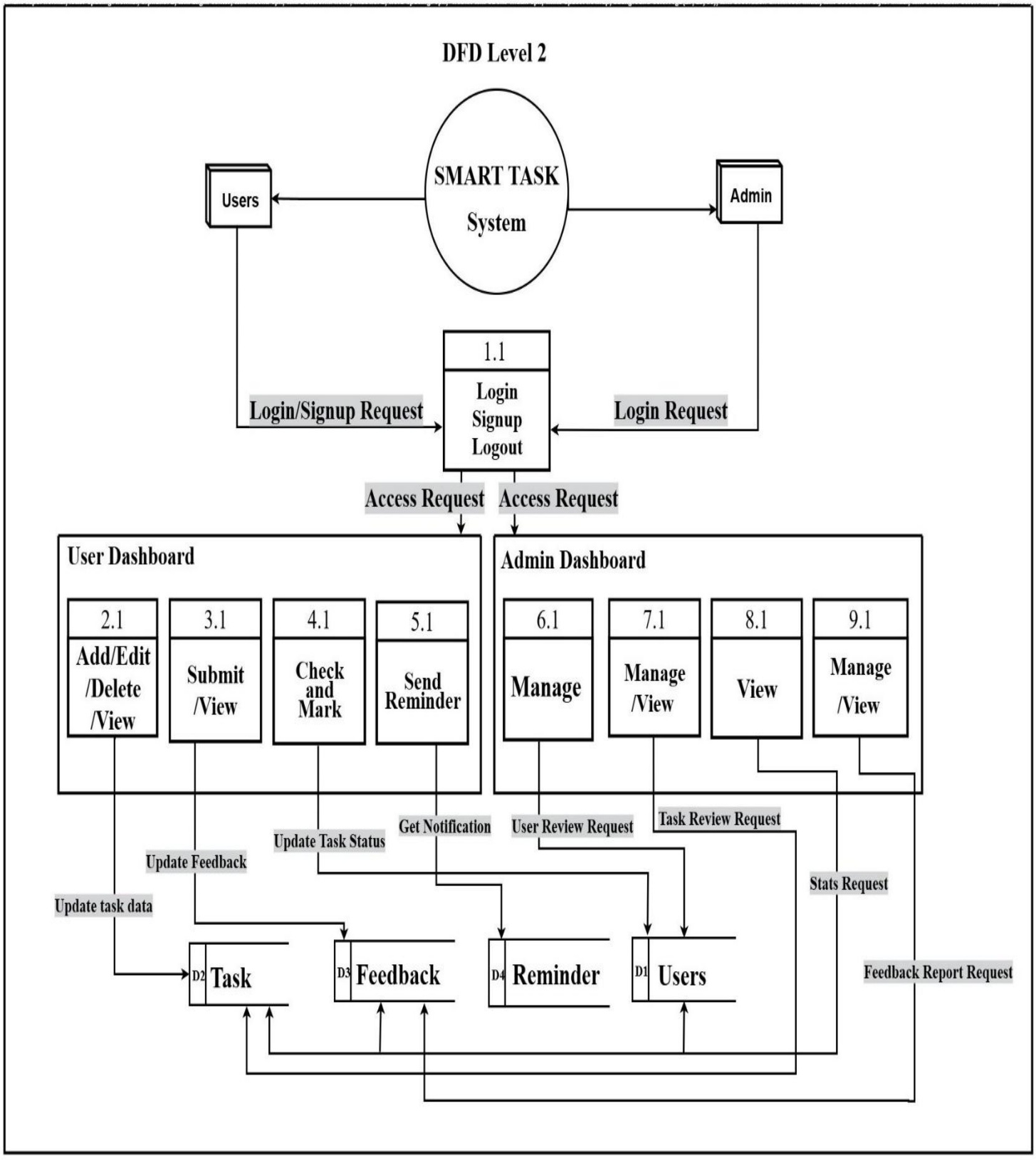

Figure-3:DFD Level - 2: Decomposed the Process

1. Purpose:

- To show the detailed internal processes of the system, including login/authentication, task management, feedback handling, and admin dashboard.
- To illustrate how users and admins interact with specific sub-processes.
- To depict data flow between processes and databases (Users, Tasks, Reminder, Feedback).
- To highlight authentication as the gateway for secure access to system functionalities.
- To help stakeholders understand task operations, feedback flow, and admin monitoring at a detailed level.

2. Components:

- External Entities: User, Admin

Processes:

- Login / Authentication (1.x)
- Task Management (2.x) – Add, Delete, View, Edit Tasks
- Feedback Handling (3.x) – Submit Feedback, View Feedback
- Admin Dashboard (4.x) – Manage Tasks, View Feedbacks, View Statistics

3. Data Stores:

- Users DB (D1)
- Tasks DB (D2)
- Reminder DB (D3)
- Feedback DB (D4)

4. Tasks and Data Flow:

- User → Login / Authentication (1.x): Sends login credentials.
- Login / Authentication → D1 (Users DB): Verifies credentials.
- Login / Authentication → Task Management (2.x), Feedback Handling (3.x), Admin Dashboard (4.x): Grants access if authenticated.
- User → Task Management (2.x): Adds, deletes, views, or edits tasks.
- Task Management → D2 (Tasks DB): Saves, updates, or deletes tasks.
- Task Management → D3 (Reminder DB): Stores reminders for tasks.
- User → Feedback Handling (3.x): Submits feedback or views feedback.
- Feedback Handling → D4 (Feedback DB): Stores or retrieves feedback.
- Admin → Admin Dashboard (4.x): Manages tasks, views all feedbacks, views statistics.

Difference between Level 0 , Level 1 and Level 2 DFD:

Aspect	Level 0 DFD	Level 1 DFD	Level 2 DFD
Purpose	Shows the entire system as one single process	Breaks down the system into main processes	Further decomposes main processes into detailed sub-processes
Focus	External entities and overall data flow	High-level processes and data stores	Detailed functions and specific data flow
Processes Shown	1 (whole system as a black box)	Few (Login, Task Mgmt, Feedback, Admin Dashboard)	Many (Add/Edit/Delete/View Task, Submit/View Feedback, Manage Tasks, View Stats, etc.)
Data Stores	Not shown	Introduced (Users DB, Tasks DB, Reminder DB, Feedback DB)	Fully detailed with exact interactions
Entities	User, Admin	User, Admin	User, Admin
Detail Level	Very high-level (abstract)	Moderate (overview of system modules)	Very detailed (step-by-step operations)