DATA FLOW DIAGRAMS FOR AGILETRACK SYSTEM

EXTERNAL ENTITIES

At the highest level, we have one primary external entity interacting with the AgileTrack System:

- **Admin/User:** This entity represents the end-users who will access the AgileTrack System for various functionalities such as managing tasks, viewing dashboards, and updating their profiles.

PROCESS OVERVIEW

The central process encapsulating the AgileTrack System can be described as follows:

- **AgileTrack System:** This process represents the core functionalities available in the system where users interact to perform tasks, manage their profiles, and retain task history.

DATA STORE

In this context level DFD, there's a single data store involved, which is:

- **User Database:** This represents where user data is securely stored, including login credentials, profile information, and task history data.

DATA FLOWS

The data flows are crucial for illustrating the interaction between the external entity and the AgileTrack System. Below are the key data flows highlighted in this level of the DFD:
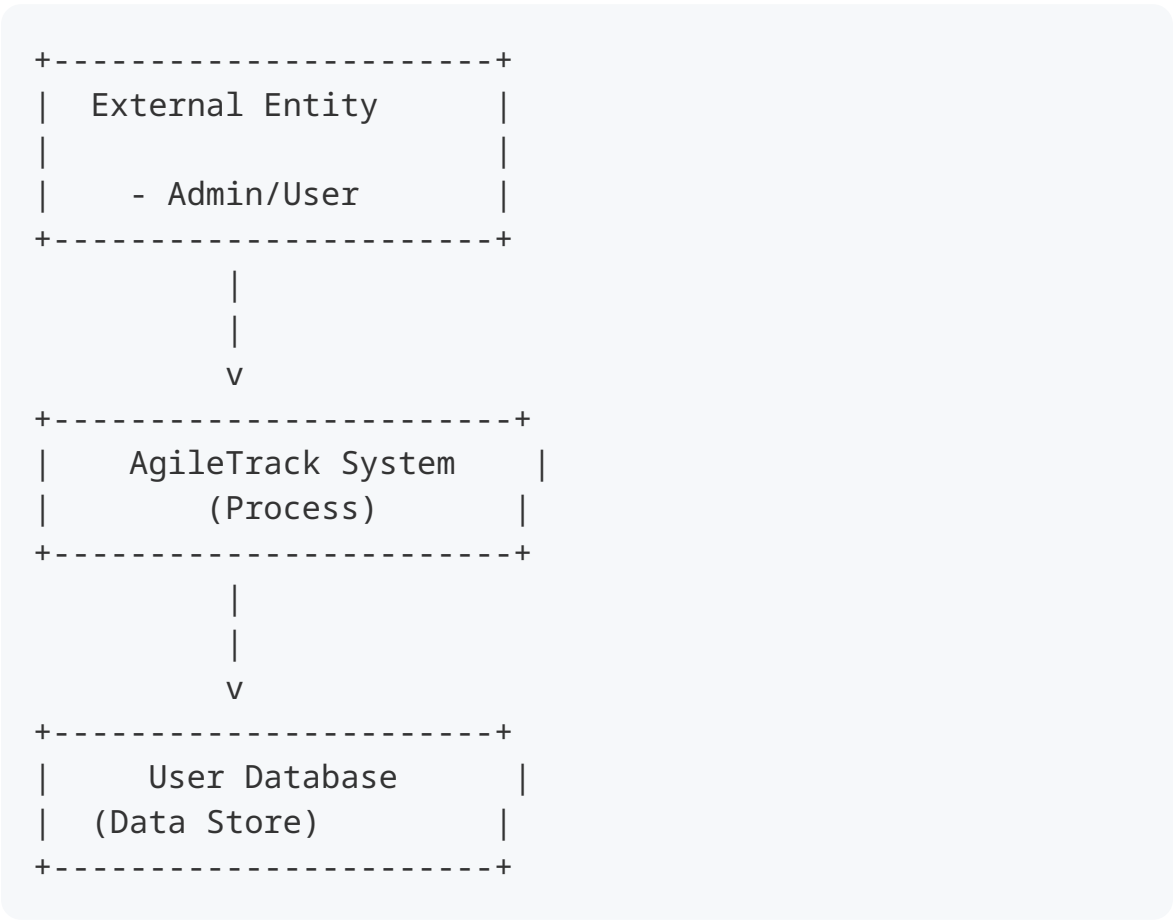
Admin/User → AgileTrack System: Login Credentials / Registration Data: When a user tries to log in or register, they send their credentials, including

username and password, as well as any registration data, to the AgileTrack System for processing.

AgileTrack System → Admin/User: Dashboard Access / Profile Info / Task History: After processing the login credentials or registration data, the system sends relevant feedback to the user, including dashboard access links, profile information, and task history, enhancing user interaction and engagement.

VISUAL REPRESENTATION

To help illustrate the context level DFD, refer to the diagram below:

```
+------------------------+
|  External Entity       |
|                        |
|    - Admin/User        |
+------------------------+
            |
            |
            v
+------------------------+
|    AgileTrack System   |
|        (Process)       |
+------------------------+
            |
            |
            v
+------------------------+
|    User Database       |
|  (Data Store)          |
+------------------------+
```

EXPLANATION OF RELATIONSHIPS

Data Interaction

The relationship between the Admin/User and the AgileTrack System is bidirectional, showcasing how input and output data interact:

When an Admin/User sends **Login Credentials / Registration Data**, they are initiating a request to access the features within the AgileTrack System. This data flow is essential for user authentication and registration processes.

Subsequently, when the AgileTrack System responds with **Dashboard Access / Profile Info / Task History**, it serves as the feedback loop, providing users with the necessary information to effectively use the system.

LEVEL 1 DFD

The Level 1 Data Flow Diagram (DFD) for the AgileTrack System expands on the high-level overview provided in the Context Level DFD. In this section, we will detail the various components, including external entities, processes, data stores, and the specific data flows associated with the AgileTrack System's operations. The goal is to provide a clearer view of how different user interactions translate into system processes and data management.

EXTERNAL ENTITIES

The Level 1 DFD identifies two primary external entities that will interact with the AgileTrack System:

- **Admin**: A user with elevated permissions who can manage other users, oversee task assignments, and perform administrative functions.
- **User**: General users who will engage with the system to manage their tasks, profiles, and view relevant information.

PROCESSES OVERVIEW

This DFD breaks down the AgileTrack System into four key processes:

Login / Registration (Process 1.0)

- Handles user authentication and account creation.

Profile Management (Process 2.0)

- Manages user profile details, allowing users to update their information.

Task Tracking / History (Process 3.0)

- Allows users to create, update, and track tasks, as well as view completed tasks.

User Management (Process 4.0)

- Enables the admin to manage user accounts, including creating, updating, or deleting user profiles.

DATA STORES

Two important data stores are represented in the Level 1 DFD:

D1: User Data

- Stores user credentials, profile information, and other relevant user data.

D2: Task History

- Maintains logs of tasks created, updated, and completed by users, which can be accessed at any point for review.

DATA FLOWS

The following outlines the detailed data flows that illustrate the interaction between external entities, processes, and data stores:

Data Flow for Process 1.0: Login / Registration

Admin/User → Process 1.0:

- Users submit their **Login Credentials** (username and password) or **Registration Info** (email, password, etc.).

Process 1.0 → D1: User Data:

- Validates the credentials against data in **User Data**. If registration is requested, new user information is added.

D1: User Data → Process 1.0:

- Returns relevant user data for the authentication process.

Process 1.0 → Admin/User:

• Grants access with **Dashboard Access** or displays error messages.

Data Flow for Process 2.0: Profile Management

Admin/User → Process 2.0:

• Users initiate a request to **Update Profile** by submitting changes (e.g., email, password).

Process 2.0 → D1: User Data:

• Retrieves current user profile information to display to the user.

Admin/User → Process 2.0:

• Submits updates to their profile.

Process 2.0 → D1: User Data:

• Updates the user information in the data store.

Process 2.0 → Admin/User:

• Confirms profile update success or failure.

Data Flow for Process 3.0: Task Tracking / History

Admin/User → Process 3.0:

• Users enter **Task Details** (name, description, due date) for new tasks or choose existing tasks to update.

Process 3.0 → D2: Task History:

• Updates or retrieves task details and logs task status changes.

D2: Task History → Process 3.0:

• Supplies task data (e.g., past tasks, active tasks) to the user interface.

Process 3.0 → Admin/User:

• Returns task status, confirmation of task update, or task history records.

Data Flow for Process 4.0: User Management

Admin → Process 4.0:

• Admin initiates requests to view, add, or remove users.

Process 4.0 → D1: User Data:

• Accesses user data for management operations.

Admin → Process 4.0:

• Provides new user credentials for creating user accounts or inputs to remove users.
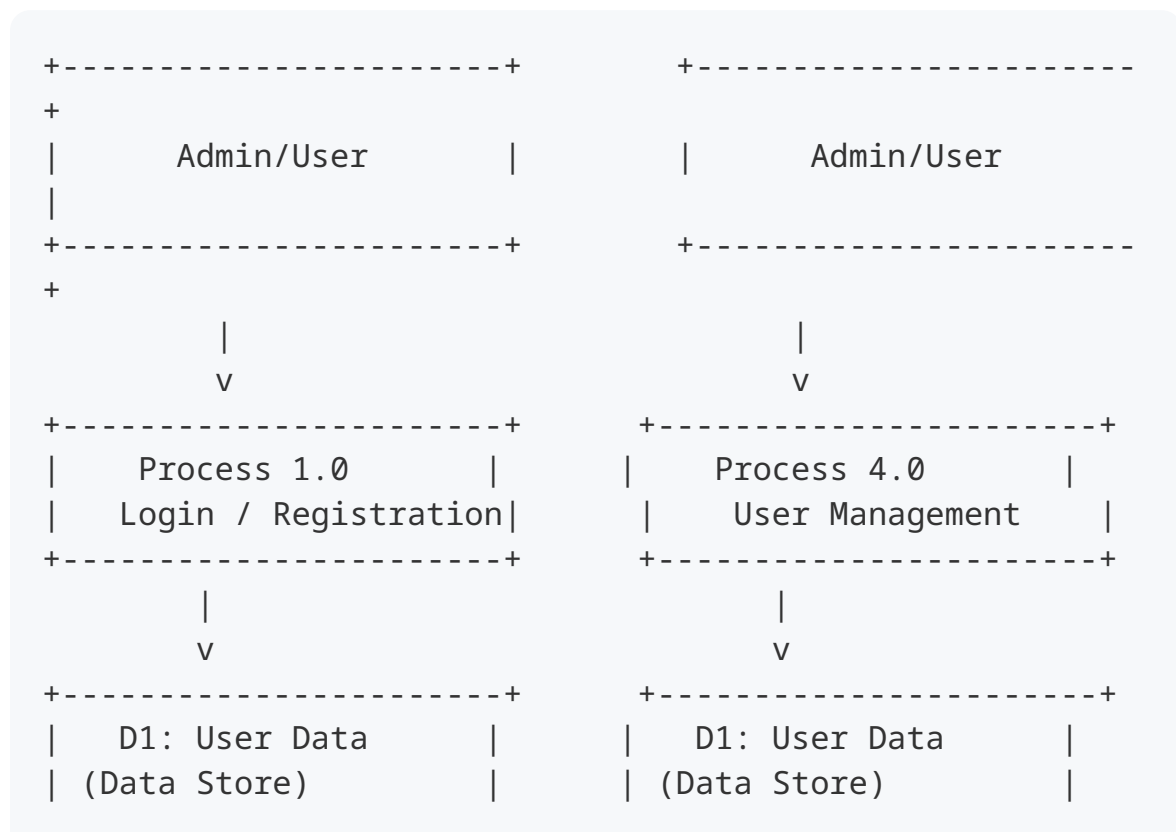
Process 4.0 → D1: User Data:

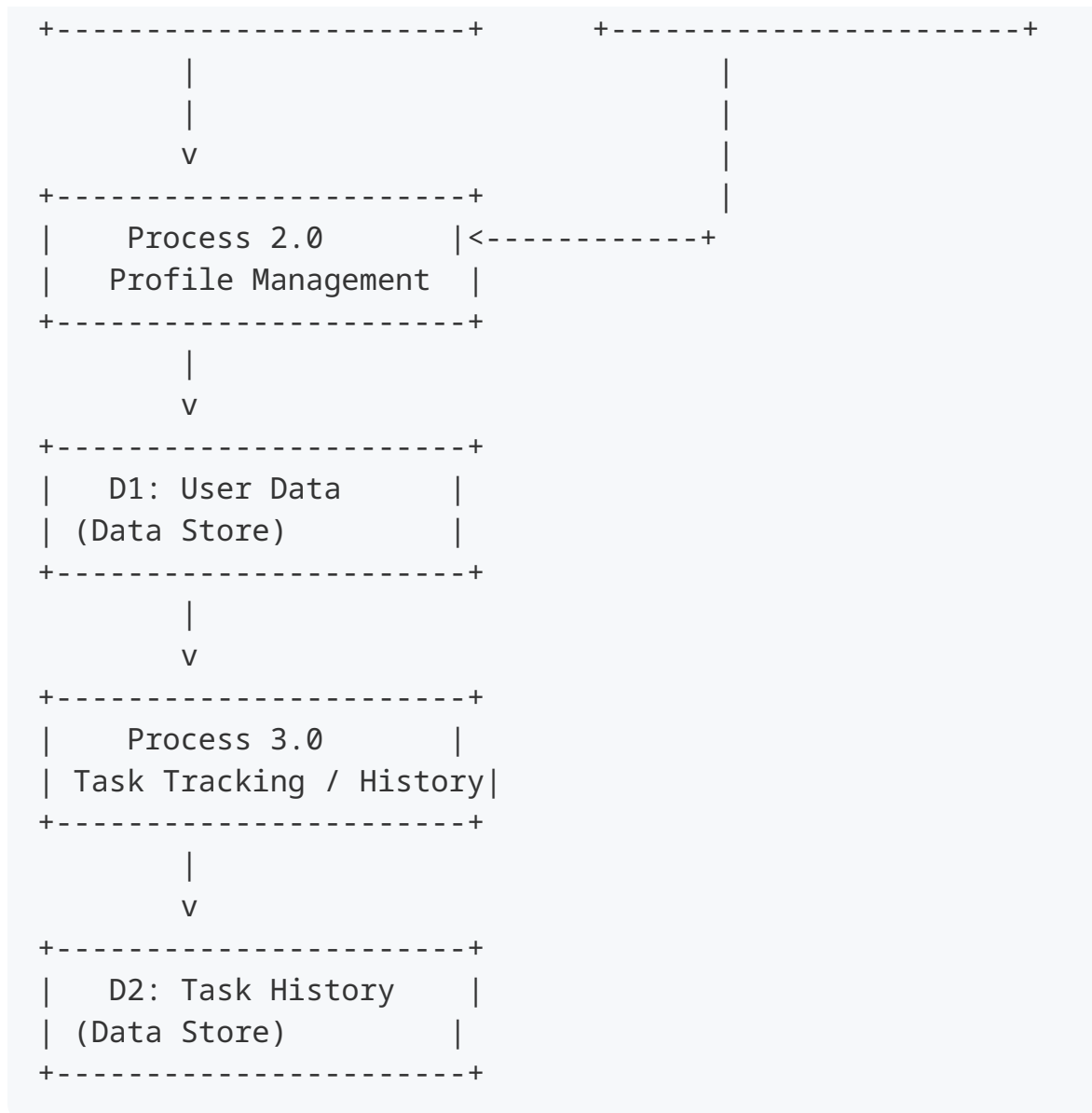• Creates a new user entry or deletes a user record.

Process 4.0 → Admin:

• Confirms changes made to user profiles, informs the admin of any errors.

VISUAL REPRESENTATION

To enhance understanding, the Level 1 DFD can be visualized as follows:

```
+------------------------+          +------------------------
+
|      Admin/User        |          |          Admin/User
|
+------------------------+          +------------------------
+
         |                                   |
         v                                   v
+------------------------+          +------------------------+
|      Process 1.0       |          |      Process 4.0       |
|   Login / Registration |          |    User Management     |
+------------------------+          +------------------------+
         |                                   |
         v                                   v
+------------------------+          +------------------------+
|    D1: User Data       |          |    D1: User Data       |
|  (Data Store)          |          |  (Data Store)          |
```

```
+------------------------+        +------------------------+
        |                                |
        |                                |
        v                                |
+------------------------+              |
|      Process 2.0       |<------------+
|    Profile Management  |
+------------------------+
        |
        v
+------------------------+
|   D1: User Data        |
| (Data Store)           |
+------------------------+
        |
        v
+------------------------+
|      Process 3.0       |
| Task Tracking / History|
+------------------------+
        |
        v
+------------------------+
|   D2: Task History     |
| (Data Store)           |
+------------------------+
```

SUMMARY OF RELATIONSHIPS

The relationships in this Level 1 DFD help clarify how various components of the AgileTrack System work cohesively:

- Each process is directly tied to external entities that trigger actions or data exchanges.
- Data stores ensure that persistent information is accessible and modifiable by the processes.
- The bidirectional flow of data ensures that users can input and retrieve vital information seamlessly.

The Level 1 DFD explains the mechanics of how the AgileTrack System operates at a granular level, illustrating the processes that facilitate user

interactions, manage data, and ensure proper oversight by admin personnel. By ensuring clarity in these relationships, the AgileTrack System can be better understood and effectively collaborated on by all project stakeholders involved in its development and management.

MAIN FUNCTIONALITIES AND USER ROLES

The relationships and functionalities illustrated in the DFDs are designed to cater to the distinct roles of **Admin** and **User:**

Admin: As an elevated user, the Admin has specific capabilities that enable them to manage other user profiles effectively. This includes the ability to create, update, or delete user accounts, as well as overseeing user permissions for various system features. The Admin also has access to usage statistics and task assignments to enhance operational oversight.

User: Regular Users interact with the AgileTrack System to manage their tasks, view their profiles, and access historical task data. Users can register for accounts, authenticate themselves through secure login processes, and utilize features such as task tracking and personal profile management. This functionality enhances their productivity and engagement with the platform.

PROCESSES AND DATA MANAGEMENT

The AgileTrack System incorporates multiple processes that facilitate smooth interactions and efficient data handling:

Login / Registration: This critical process authenticates users based on their submitted login credentials or facilitates new users' registration by capturing their relevant information. The system validates these inputs against the **User Data Store** (D1) to ensure secure access. Successful login attempts trigger dashboard access while failed attempts generate error notifications.

Profile Management: Users can update their profiles through this process, allowing them to modify essential information such as email addresses or passwords. The system communicates with the User Data Store (D1) to retrieve existing data and confirm updates, promoting currency and accuracy in user information.

Task Tracking / History: This functionality allows users to create new tasks, update ongoing tasks, and review their historical data related to completed tasks. The system communicates with the **Task History Store** (D2) to store and retrieve task details, ensuring users have a reliable history of their task engagement.

User Management: The Admin can utilize this process to oversee user accounts actively. Ensuring that profiles are current and removing any outdated or inactive accounts encourages system integrity and security.

DATA STORAGE AND ITS ROLE

The efficient functioning of the AgileTrack System is heavily linked to its data management capabilities housed within two primary data stores:

D1: User Data: This store is critical for holding user credentials, profiles, and any relevant information needed for login and registration, ensuring users have seamless access to their personalized environments.

D2: Task History: This storage provides a historical repository for tasks created and managed by users. It allows for consistent tracking of performance and task history, integral for both users and Admin assessments.

Summary and Additional Notes

The AgileTrack System employs a structured approach to managing user interactions and data through its Data Flow Diagrams (DFDs). These diagrams provide a visual representation of how Admins and Users engage with the system, emphasizing the core functionalities, interactions, and data management processes crucial to the system's operation. Below is a concise summary of the system's features as depicted in the context and Level 1 DFD.