AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

408/1, Kuratoli, Khilkhet, Dhaka 1229, Bangladesh

Assignment title: TO-DO application
Course Name: Programming in Python
Semester: Spring Section: A
Teacher name: DR. Abdus Salam

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Project Description:

The TO-DO app is a task management application designed to help users organize their tasks effectively. With intuitive features and user-friendly interface, it offers a seamless experience for managing daily tasks and staying productive. Users can register an account, log in securely, and utilize various functionalities to create, edit, and track tasks based on their priority and completion status. The app ensures data persistence by storing user information and tasks in JSON files, allowing users to access their tasks across sessions. Whether it's adding new tasks, marking them as complete, or filtering tasks based on specific criteria, the TO-DO app provides a comprehensive solution for task management needs.

1. **Registration:**

   The Register feature allows users to create a new account by providing a unique username and password. It ensures that the username chosen by the user is not already in use to maintain uniqueness. Upon successful registration, the user's data is stored for future access.

   Implementation:

   In the To-Do App class, the register method prompts the user to enter a username and password. It checks if the username already exists in the stored user data. If not, it creates a new user instance and saves the data to a JSON file.

2. **Login:**

   The Login feature allows existing users to access their accounts by providing their username and password. Upon successful authentication, users are granted access to their tasks and other functionalities.

   Implementation:

   The login method in the ToDoApp class verifies the provided username and password against the stored user data. If the credentials match, the user is considered logged in, and access is granted to the application's features.

3. The Quit feature allows users to exit the TO-DO app, terminating the program execution.

   Implementation:

   In the main loop of the application, when the user chooses to quit (option 3), the loop breaks, leading to the termination of the program.

4. **Add Task:**

   The Add Task feature enables users to create new tasks by specifying a title, description, priority, and optional due date.

   Implementation:

   The add task method in the To-Do App class prompts the user to input task details such as title, description, priority, and due date. It then creates a new task and adds it to the user's task list.

5. **Edit Task:**

   The Edit Task feature allows users to modify existing tasks, including changing the title, description, priority, and due date.

   Implementation:

   The edit task method in the To-Do App class presents the user with the option to select a task to edit. It then prompts the user to input new details for the selected task, updating its information accordingly.

6. **Remove Task:**

   The Remove Task feature enables users to delete tasks from their task list.

   Implementation:

   The remove task method in the To-Do App class allows users to select a task to remove by its ID. It then removes the selected task from the user's task list.

7. **Mark Task Complete:**

   The Mark Task Complete feature allows users to mark tasks as completed, inculcating that they have been finished.

   Implementation:

   The mark task complete method in the To-Do App class allows users to select a task by its ID

and mark it as complete. The completion status of the task is updated accordingly.

8. **View Task:**

   The View Tasks feature displays all tasks belonging to the current user, including their details such as title, description, priority, due date, and completion status.

   Implementation:

   The view tasks method in the To-Do App class iterates through the user's task list and prints each task's details to the console.

9. **Filter Task:**

   The Filter Tasks feature allows users to view specific subsets of their tasks based on completion status (completed or incomplete).

   Implementation:

   The filter tasks method in the To-Do App class filters the user's task list based on the completion status specified by the user (completed or incomplete).

10. **Sort Task By Priority**

    The Sort Task By Priority feature arranges the user's tasks in descending order based on their priority levels.

    Implementation:

    The sort by priority method in the To-Do App class sorts the user's task list based on the priority level assigned to each task.

11. **Change Password:**

    The Change Password feature allows users to update their account passwords for improved security.

    Implementation:

    The change password method in the To-Do App class enables users to change their passwords. It prompts the user to enter a new password and verifies the new password by asking the user to re-enter it.

12. **Exit:**

    The Exit feature allows users to exit the TO-DO app, terminating the program execution.

    Implementation:

    In the main loop of the application, when the user chooses to exit (option 9), the loop breaks, leading to the termination of the program.

User Interface:

Welcome To-Do app

1. Register

2. Login

3. Quit

Enter your choice: 1

Enter username: **

Enter password: **

Registration successful.

1. Login

2. Quit

Enter your choice: 2

Enter username: **

Enter password: **

Welcome, **!

1. **Add Task:**

   Enter your choice: 1

Enter task title: ff

Enter task description: tt

Enter task priority (0 for lowest): 1

Enter due date (YYYY-MM-DD): 22-3-15

Task added successfully.

2. Edit Task:

Your tasks:

Task 1:

title: ff

description: tt

priority: 1

due date: 22-3-15

completed: False

Enter task ID to Edit:

3. Remove Task

Your tasks:

Task 1:

title: ff

description: tt

priority: 1

due date: 22-3-15

completed: False

4. Mark Task Complete

Your tasks:

Task 1:

title: ff

description: tt

priority: 1

due date: 22-3-15

completed: False

5. View Tasks

Your tasks:

Task 1:

title: ff

description: tt

priority: 1

due date: 22-3-15

completed: False

6. Filter Tasks

Filter tasks by completion status

1. Completed Tasks

2. incomplete task

7. Sort Task By Priority

Your completed tasks (sorted by priority - descending):

Task 1:

title: ff

description: tt

priority: 1

due date: 22-3-15

completed: False

8. Change Password

Enter your choice: 8

Enter new password:

10.Exit:

Exiting...