

# Compulsory Task 1

Follow these steps:

- Use the **task\_manager.py** file for this project. Also, make use of the supporting text files (**user.txt** and **tasks.txt**) that accompany this Capstone project in this folder. In this task **you will be modifying this program**.
- You will notice that the main body of the code requires functionality for registering a user, adding a task, viewing all tasks and viewing the current user's tasks. However, because there is so much functionality needed to complete this, the main body of the loop becomes difficult to read. Using the principle of **abstraction**, refactor the code to create and use the following functions:
  - *reg\_user* — that is called when the user selects 'r' to register a user.
  - *add\_task* — that is called when a user selects 'a' to add a new task.
  - *view\_all* — that is called when users type 'va' to view all the tasks listed in 'tasks.txt'.
  - *view\_mine* — that is called when users type 'vm' to view all the tasks that have been assigned to them.
- Modify the function called *reg\_user* to make sure that you don't duplicate usernames when you add a new user to **user.txt**. If a user tries to add a username that already exists in **user.txt**, provide a relevant error message and allow them to try to add a user with a different username.
- Add the following functionality when the user selects 'vm' to view all the tasks assigned to them:
  - Display all tasks in a manner that is easy to read. Make sure that each task is displayed with a corresponding number which can be used to identify the task.
  - Allow the user to select either a specific task (by entering a number) or input '-1' to return to the main menu.
  - If the user selects a specific task, they should be able to choose to either **mark the task as complete** or **edit the task**. If the user chooses to mark a task as complete, the 'Yes'/'No' value that describes whether the task has been completed or not should be changed to 'Yes'. When the user chooses to edit a task, the

username of the person to whom the task is assigned or the due date of the task can be edited. The task can only be edited if it has not yet been completed.

- Add an option to generate reports to the main menu of the application. The menu for the admin user should now look something like this:

```
Please select one of the following options:
r - register user
a - add task
va - view all tasks
vm - view my tasks
gr - generate reports
ds - display statistics
e - exit
```

- When the user chooses to generate reports, two text files, called **task\_overview.txt** and **user\_overview.txt**, should be generated. Both these text files should output data in a user-friendly, easy to read manner.
  - **task\_overview.txt** should contain:
    - The total number of tasks that have been generated and tracked using the **task\_manager.py**.
    - The total number of completed tasks.
    - The total number of uncompleted tasks.
    - The total number of tasks that haven't been completed and that are overdue.
    - The percentage of tasks that are incomplete.
    - The percentage of tasks that are overdue.
  - **user\_overview.txt** should contain:
    - The total number of users registered with **task\_manager.py**.
    - The total number of tasks that have been generated and tracked using **task\_manager.py**.
    - For each user also describe:
      - The total number of tasks assigned to that user.
      - The percentage of the total number of tasks that have been assigned to that user
      - The percentage of the tasks assigned to that user that have been completed
      - The percentage of the tasks assigned to that user that must still be completed
      - The percentage of the tasks assigned to that user that have not yet been completed and are overdue

- Modify the menu option that allows the admin to display statistics so that the reports generated are read from **tasks.txt** and **user.txt** and displayed on the screen in a user-friendly manner. If these text files don't exist (because the user hasn't selected to generate them yet), first call the code to generate the text files.



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