SECJ2013: Data Structure and Algorithm

Faculty of Computing

Task Management System

Assignment 2

Group members

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1. Objective

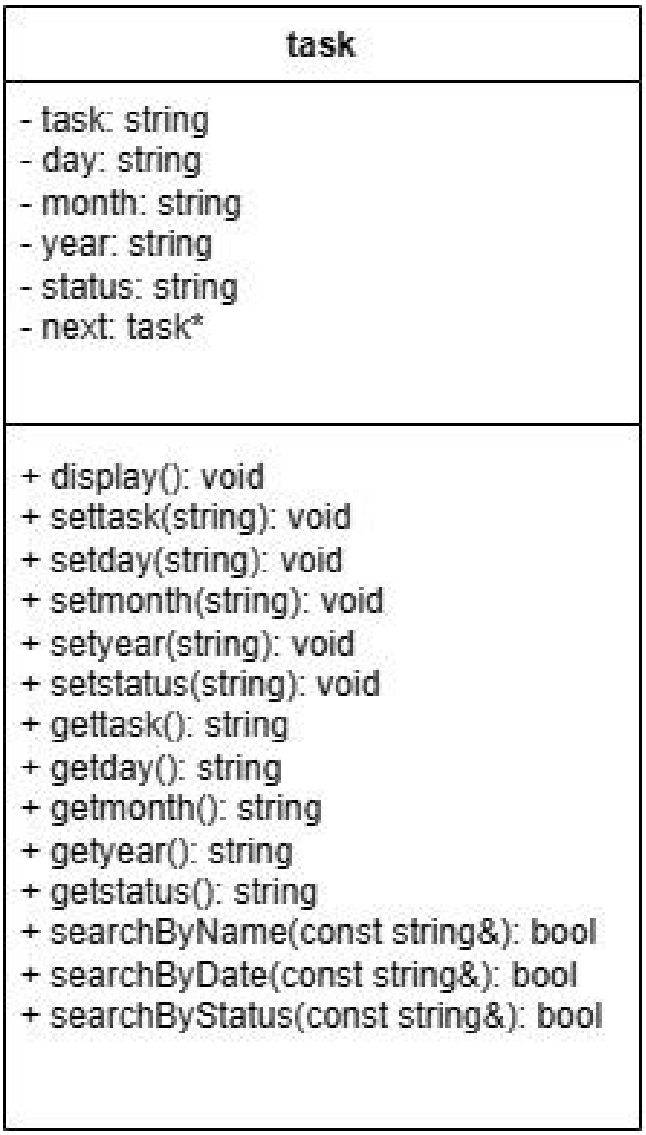
The objective of this assignment is to implement the linked list concept into the task management system. This method allows the user to edit the data in several ways such as inserting a new task and delete current tasks in the task list. This reduces the workload of the user to edit the tasks in the list where the users can be able to access any data in the list and execute insertion or deletion method.Users are not required to shift all the subsequent tasks in order to perform the insertion and deletion.Linked list is also known to have dynamic memory allocation where the linked lists can increase or decrease during the execution of program unlike arrays where the size is fixed.

2. Synopsis

The objective of this assignment is to implement the linked list concept into the task management system. This method allows the user to edit the data in several ways such as inserting a new task and delete current tasks in the task list. This reduces the workload of the user to edit the tasks in the list where the users can be able to access any data in the list and execute insertion or deletion method.Users are not required to shift all the subsequent tasks in order to perform the insertion and deletion.Linked list is also known to have dynamic memory allocation where the linked lists can increase or decrease during the execution of program unlike arrays where the size is fixed.

3. Design

Class Diagram



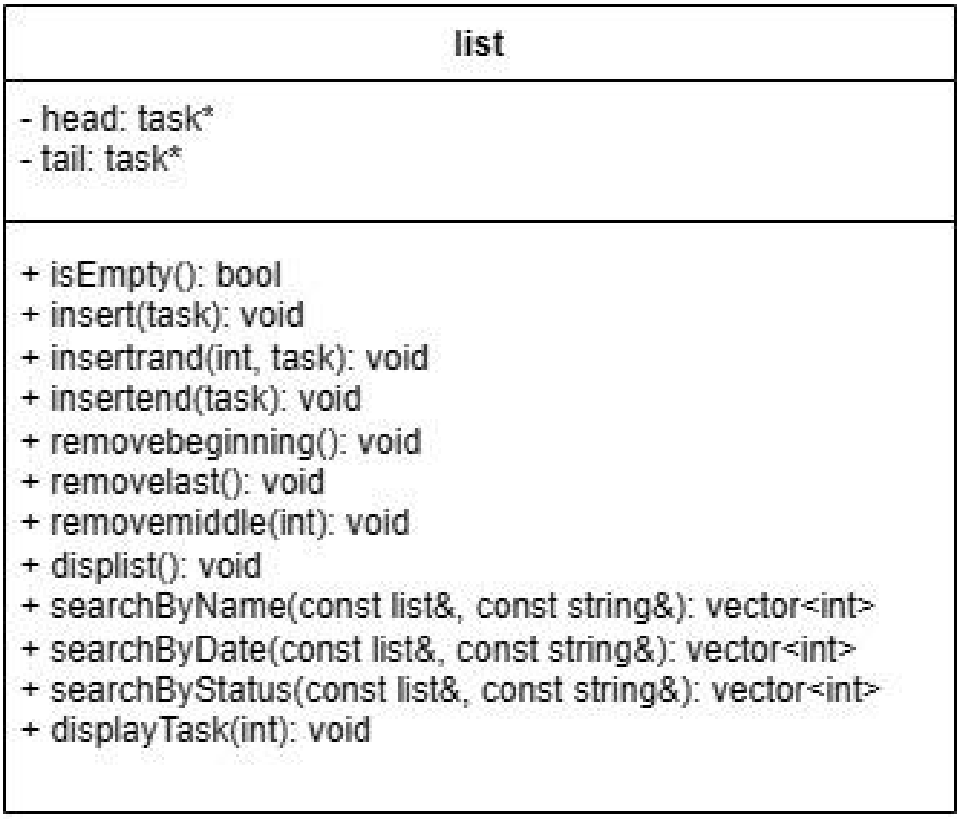
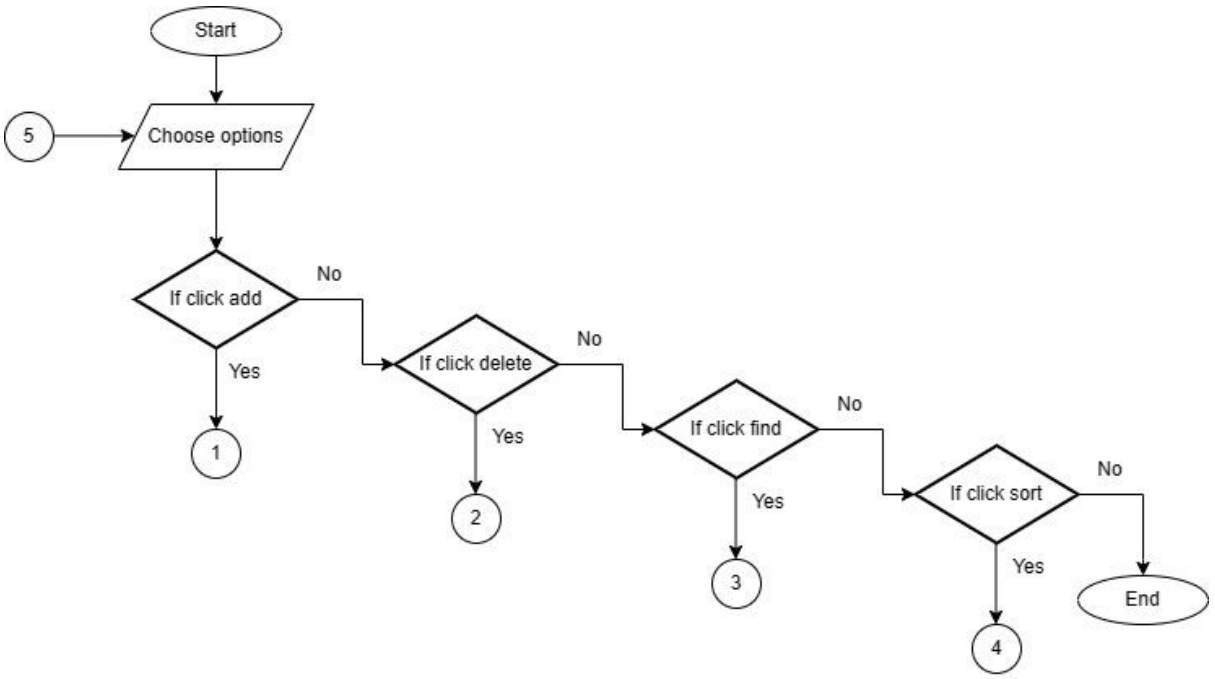
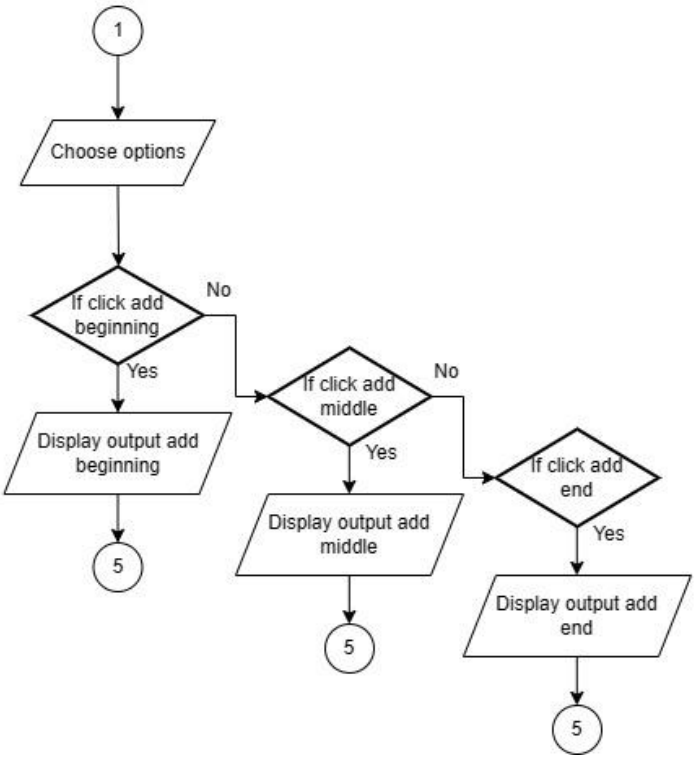
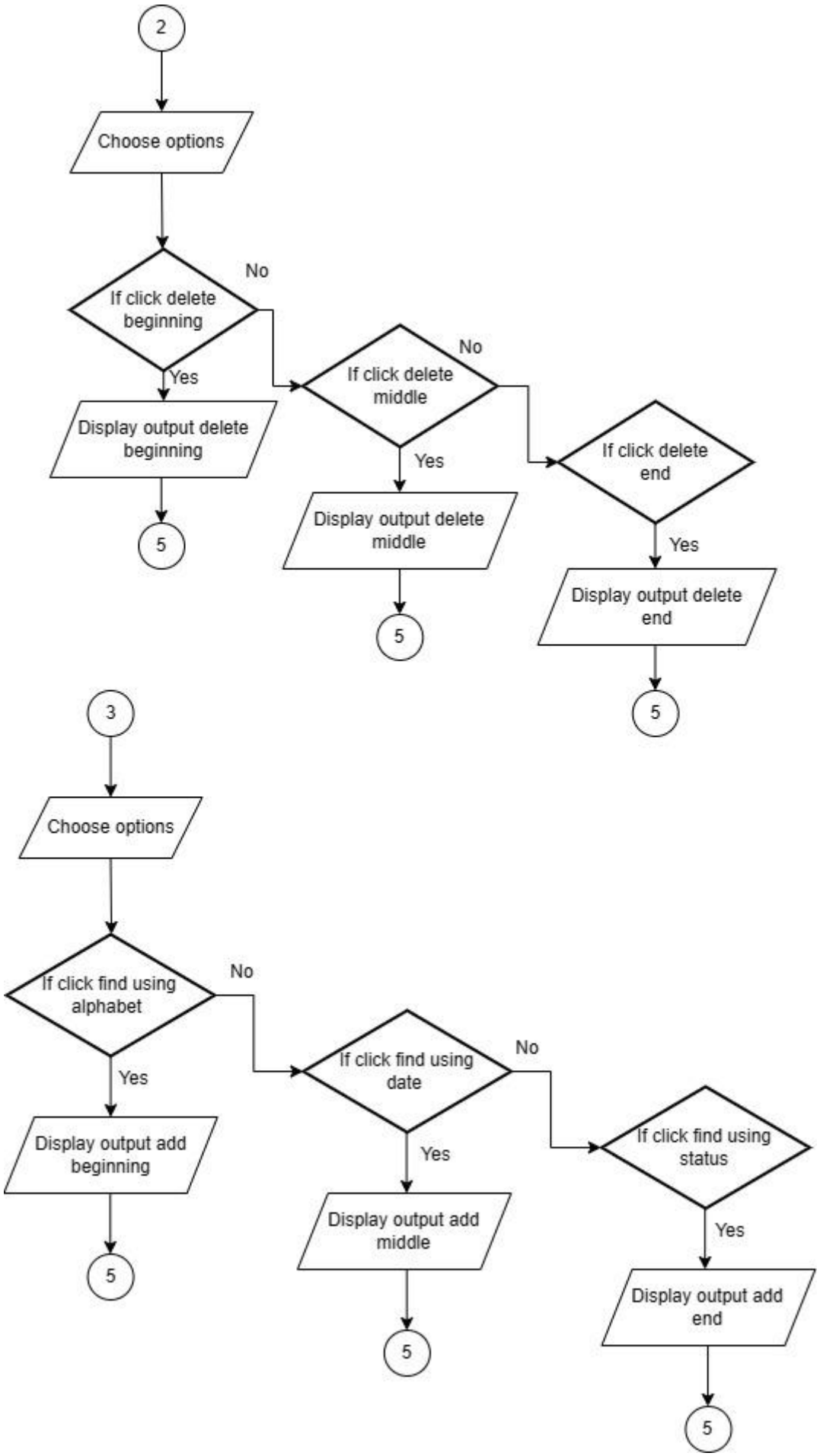


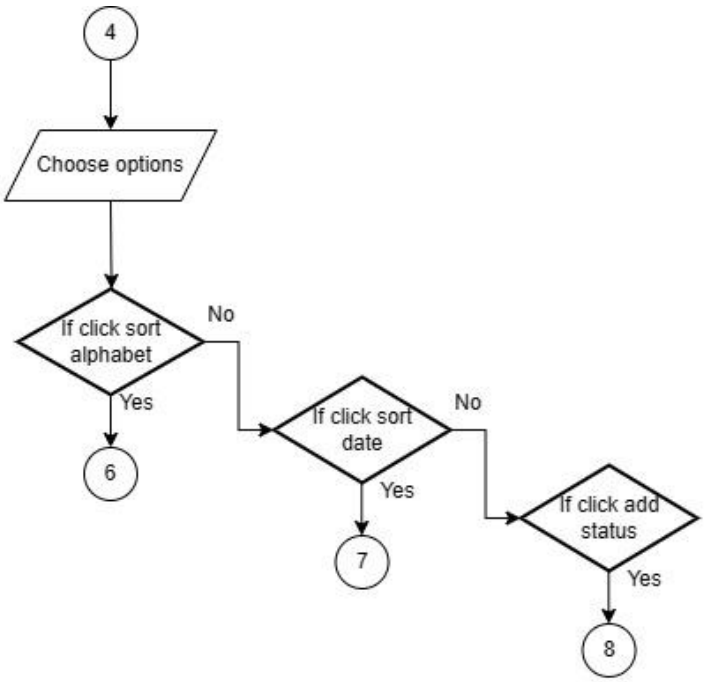
Figure 3.1 Class Diagram Task Management System

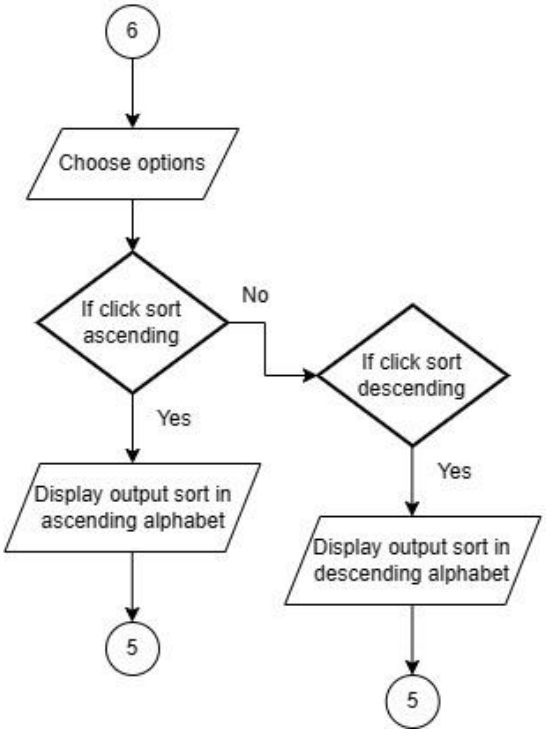
Flowchart of Task Management System

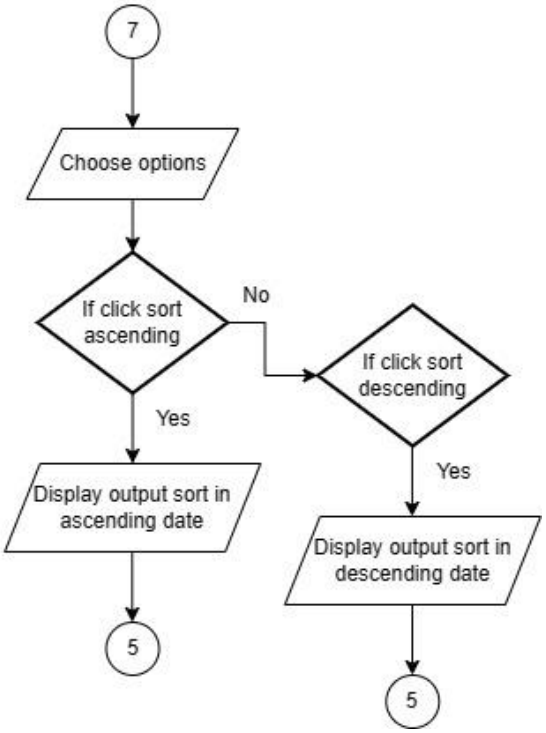





2
Choose options
If click delete beginning
No
Yes
Display output delete beginning
5
If click delete middle
No
Yes
Display output delete middle
5
If click delete end
Yes
Display output delete end
5
3
Choose options
If click find using alphabet
No
Yes
Display output add beginning
5
If click find using date
No
Yes
Display output add middle
5
If click find using status
Yes
Display output add end
5


4
Choose options
If click sort alphabet
No
Yes
6
If click sort date
No
Yes
7
If click add status
Yes
8


6
Choose options
If click sort ascending
No
Yes
Display output sort in ascending alphabet
5
If click sort descending
Yes
Display output sort in descending alphabet
5


7
Choose options
If click sort ascending
No
Yes
Display output sort in ascending date
5
If click sort descending
Yes
Display output sort in descending date
5

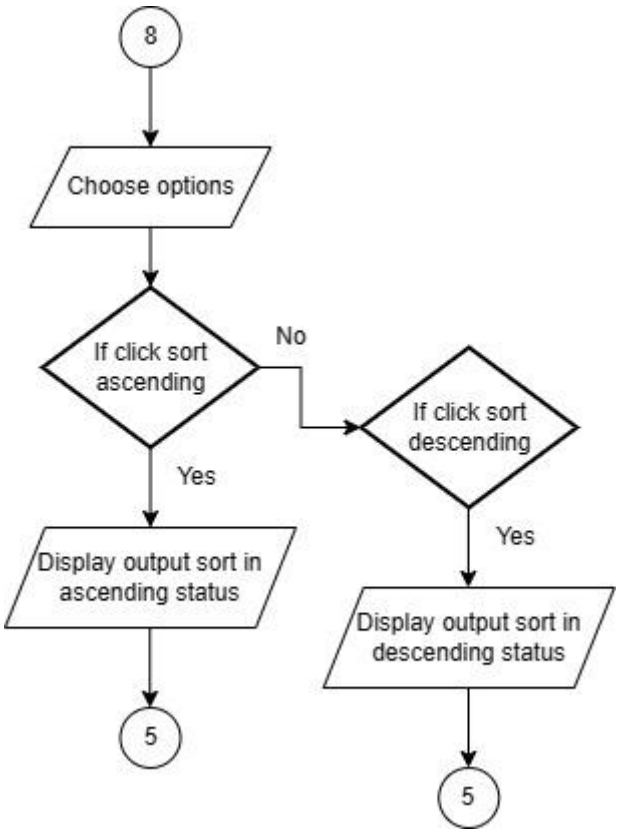


Figure 3.2 Flowchart of Task management System

4. Description of Data Structure Operation: Linked List

1. User will be directed to the main menu of the task management system. In the main menu user can see all the task with its date and status. User will also can see the option menu that have add, delete, find, and sort the task.

2. If the user click on the add task option, the system will redirect the user to the next option menu where the user can choose to add the task in either of these manner which are:

1. Add beginning
2. Add middle (by using a number)
3. Add end

3. After choosing the option, the system will show the output based on the option that have been chosen by the user.

4. The user can exit to the main menu and will be showed again the first event. There the user can choose again which option that the user wants.

5. If the user choose the second option which is delete task, the system will redirect the user to the next option menu.

6. In the delete task menu option the user can enter any of these delete option to delete any of the task based on the option. The options are:

1. Delete beginning
2. Delete middle (by a using number)
3. Delete end

7. After choosing the option, the system will show the output based on the option that have been chosen by the user.

8. The user can exit to the main menu and will be showed again the first event. There the user can choose again which option that the user wants.

9. If the user choose the third option which is find task, the system will redirect the user to the next option menu.

10. In the find task menu option the user can enter any of these searching option to see if the task that the user want to see is in the list. The options are:

1. Find by using the alphabet
2. Find by using the date
3. Find by using the status

11. After choosing the option, the system will show the output based on the option that have been chosen by the user.

12. The user can exit to the main menu and will be showed again the first event. There the user can choose again which option that the user wants.

13. If the user choose the forth option which is sort task, the system will redirect the user to the next option menu.

14. If the user click on the sorting option, the system will redirect the user to the next option menu where the user can choose to sort the lisk in either of these manner which are:

1. Ascending Alphabet
2. Descending Alphabet
3. Ascending Date
4. Descending Date
5. Ascending Status
6. Descending Status

(* notes: For the Status the arrangement of level will be from todo, doing and completed)

15. After choosing the option, the system will show the output based on the option that have been chosen by the user.

16. The user can exit to the main menu and will be showed again the first event. There the user can choose again which option that the user wants.