Department of Computer Science and Engineering

Project Report

Project Name: Block ToDo: Unblock Your Productivity
Course Code: CSE-1122
Course Title: Computer Programming I Lab

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Remarks:

Block ToDo

(Unblock your Productivity)

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Project Title: Block ToDo

Introduction:
BlockToDo is a user-friendly task manager that helps you boost productivity by organizing your day into blocks of focused time. With real-time tracking and a simple interface, it's designed to unblock your productivity and make you more efficient in daily life.

Features:
Task Organization:
- Create tasks.
- Assign each task to specific time blocks.

Task Details:
- Includes details for each task, such as title, block duration, and current status.

Timer:
- Includes a timer for each task within the time block.

Real-Time Tracking:
- Track the time spent on each task in real-time.

Status Updates:
- Set and update the status of tasks (In Progress, Done, Dropped).

User-Friendly Interface:
- Intuitive and easy-to-use interface for seamless task management.

Total Block Indicator:
- Displays the total blocks used against the available time.

Time Efficiency Insights:
- Provide insights into how effectively time is utilized.

Task Editing:
- Edit task details, including title, block, and status.

Task Deletion:
- Delete individual tasks or clear all tasks.

Persistence:
- Save task data locally to persist across application launches.

Efficiency Analytics:
- Generate basic analytics on task completion and time utilization.

Implementation:
Short Description: The Block ToDo application, implemented in C, is a console-based task management system. Users can add, track, and update tasks with associated time blocks. The program utilizes standard C libraries for input/output, string manipulation, and time handling. Users interact with a menu-driven interface, where they can select, add, update, or delete tasks. A timer feature allows tracking time spent on a task. The code manages tasks using an array of structures, saving and loading data from a local file. The application emphasizes simplicity and productivity, making it a straightforward tool for users seeking an uncomplicated task management solution.

Library Used:
stdio.h: Standard Input/Output functions for reading and writing.

stdlib.h: Standard Library functions for memory allocation, conversion, and other utility functions.

string.h: String manipulation functions.
.
conio.h (Windows-specific): Used a function for handling time in milliseconds

windows.h (Windows-specific): Windows API functions for controlling the console.

unistd.h (Mac/Linux-specific): Standard symbolic constants and types.

Flowchart:

```
              ┌─────────────────────┐
              │    Start Program     │
              └─────────────────────┘
                        │
                    Load Tasks
                        ↓
              ┌─────────────────────┐
              │ Display Main Menu and Task │
              │      Information      │
              └─────────────────────┘
                        │
                   User Chooses
                        ↓
                    ◇─────────◇
                   ╱           ╲
                  ╱  1. Select Task  ╲
                 ╱   2. Add Task      ╲
                ╱    3. Update Task    ╲
                ╲    4. Delete Task    ╱
                 ╲   5. Exit         ╱
                  ╲                 ╱
                   ◇─────────────◇
                        │
                Perform Selected Task
                        ↓
              ┌─────────────────────┐
              │  Save Tasks to Database │
              └─────────────────────┘
                        │
                   End Program
                        ↓
              ┌─────────────────────┐
              │     End Program      │
              └─────────────────────┘
```
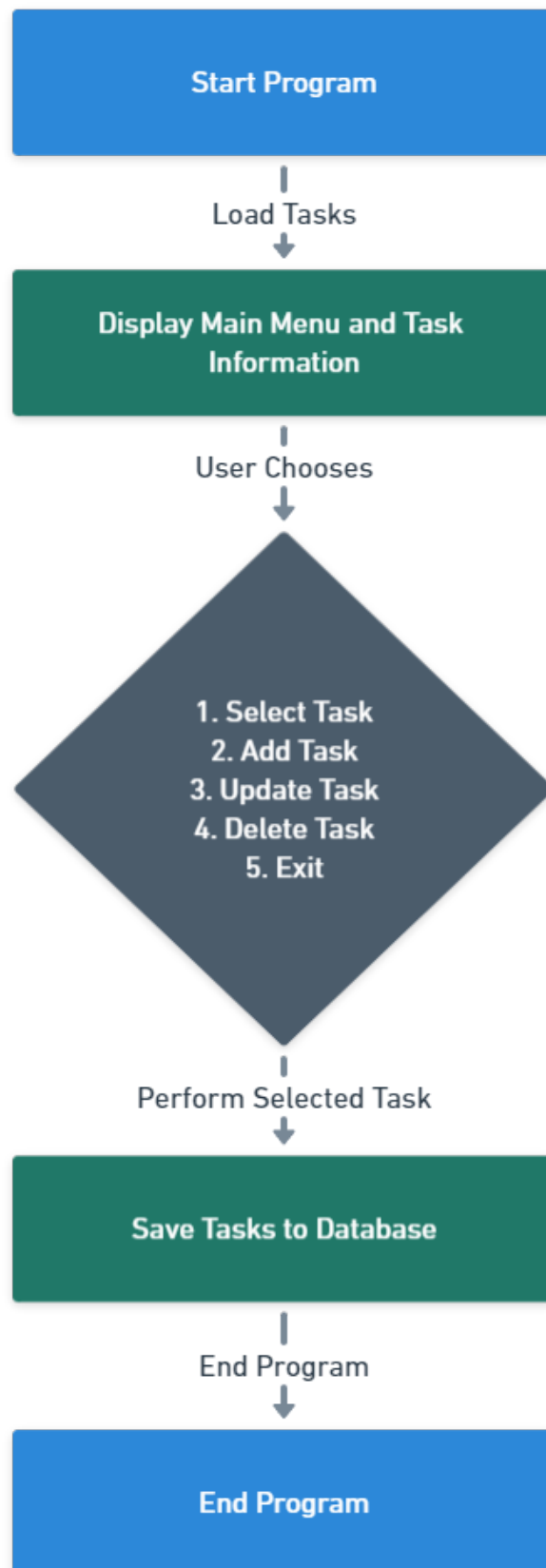
Screenshots:

```
                                      Block ToDo

                              ---------------------------
                              | unblock your productivity |
                              ---------------------------

                              Total Blocks : 02:12 / 08:00

------- ------------------------------------------------------------------ ------- ------------- --------------
| Index |                                Task                              | Block |    Status   | Time Tracked |
------- ------------------------------------------------------------------ ------- ------------- --------------
|   1   | study physics chapter 2                                         | 02:00 |     Done    |   01:43:01   |
------- ------------------------------------------------------------------ ------- ------------- --------------
|   2   | doing maths from chapter 7                                      | 01:40 | In Progress |   00:27:24   |
------- ------------------------------------------------------------------ ------- ------------- --------------
|   3   | solving codeforces questions                                    | 03:50 | Not Started |              |
------- ------------------------------------------------------------------ ------- ------------- --------------
|   4   | reading newspaper                                               | 00:30 |   Dropped   |   00:02:11   |
------- ------------------------------------------------------------------ ------- ------------- --------------

---------------- -------------- ---------------- ---------------- ---------
| 1. Select Task | 2. Add Task | 3. Update Task | 4. Delete Task | 5. Exit |
---------------- -------------- ---------------- ---------------- ---------
| Option: ▯
```

Img: main menu with tasks

```
                                      Block ToDo

                              -------------------
                              | all tasks deleted |
                              -------------------

----------------------------------------------------------------------------------------------------
|                                      Task List Empty                                              |
----------------------------------------------------------------------------------------------------

---------------- -------------- ---------------- ---------------- ---------
| 1. Select Task | 2. Add Task | 3. Update Task | 4. Delete Task | 5. Exit |
---------------- -------------- ---------------- ---------------- ---------
| Option: ▯
```

Img: main menu without tasks

```
                                      Block ToDo

------- ------------------------------------------------------------------ ------- ------------- --------------
| Index |                                Task                              | Block |    Status   | Time Tracked |
------- ------------------------------------------------------------------ ------- ------------- --------------
|   2   | doing maths from chapter 7                                      | 01:40 | In Progress |   00:28:04   |
------- ------------------------------------------------------------------ ------- ------------- --------------

---------------- ---------------- ----------------- ---------------
| 1. Update Title | 2. Update Block | 3. Update Status | 4. Reset Time |
---------------- ---------------- ----------------- ---------------
Option: ▯
```

Img: updating a task

```
| Task: doing maths from chapter 7


---------- ----------
 Tracked  |   Block
---------- ----------
00:27:30  |  01:40:00▯
```

Img: tracking time for a task

Future Scope: There are many aspects of improvement we can do to our app in near future such as - Integrating log in system, notification system, enhanced UI, various platform versions (Android, iOS, Windows, MacOS) and lastly include machine learning to optimize the tasks and time etc. The possibilities are endless.

Conclusion: In summary, BlockToDo is a promising task management application that brings simplicity and efficiency to daily planning. Overall our app will make its user more productive and efficient on their everyday tasks. And our plan is to make BlockToDo helpful for you in more ways, keeping things simple and easy.