Northern University Bangladesh

Department of Computer Science and Engineering

SOFTWARE DEVELOPMENT

PROJECT NAME

Taskbot

TEAM 01

SUBMITTED BY

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SUBMITTED TO

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Designation : Lecture

Department : Computer Science & Engineering

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Project Details

1. Project Title: Taskbot

2. Project Type: GUI-based application in C

3. Problem Statement:

While working on a computer, users often need various small tools such as converters, reminders, or note systems. However, to access these features, they usually have to install and switch between multiple separate software programs. This process is time-consuming, inefficient, and reduces productivity.

4. Objective:

The main purpose of TaskBot is to make everyday computer usage more efficient by providing multiple essential tools in one unified application. It simplifies workflow, saves time, and boosts productivity by offering quick access to frequently used utilities through an easy-to-use interface.

5. Target Users / Use Case Scenario:

TaskBot is designed for all computer users—students, professionals, and general users—who want to increase their productivity and simplify daily digital tasks. By combining practical tools in one place, TaskBot enhances the overall computing experience.

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6. Technology & Tools

- **Programming Language:** C
- **Compiler / IDE:** Visual Studio Code + GCC
- **Data Storage Method:** File Handling (Local storage using standard I/O functions in C)
- **Additional Libraries (Optional):** GTK for GUI implementation, Standard C Libraries

7. Main Features

7.1 Interactive GUI :

Provides an attractive and user-friendly interface built using GTK or similar C GUI frameworks. The interface allows smooth navigation between all modules such as tools, settings, and shortcuts. It includes menu bars, buttons, and dialogs for easy access to functions, reducing the complexity of command-line operations.

7.2 Local SMS :

Implements a local network–based text communication feature that allows two computers on the same LAN to exchange short messages. It uses socket programming in C to send and receive text data efficiently, making communication easier during collaborative tasks.

7.3 Light AI :

Integrates a lightweight AI assistant that can respond to simple user commands like opening tools, showing system info, or reminding about tasks. The AI uses conditional logic and keyword recognition to simulate intelligent behavior and provide quick access to system utilities.

7.4 CMD Shell :

A customized command-line shell built within the application that simplifies system command usage. It provides user-defined commands, colorized output, and shortcuts for frequently used system tasks, enhancing the console experience for both beginners and power users.

7.5 Custom Keyboard Shortcuts :

Allows users to assign and manage keyboard shortcuts to launch specific tools or execute common commands quickly. Shortcut data is stored using file handling, so user preferences are saved across sessions for personalized workflow efficiency.

7.6 App Launcher :

Offers a central control hub to access frequently used applications (e.g., Notepad, Calculator, Browser). The launcher lists programs, supports custom paths, and allows one-click access, reducing the need to manually search and open applications.

7.7 System Settings :

Provides options to customize TaskBot's appearance, theme, and feature configurations. Users can adjust preferences such as color scheme, startup behavior, and shortcut management. Settings are stored locally using configuration files for persistence.

7.8 Unit Converter :

Converts between various measurement units — such as currency (USD ⇄ BDT), length (feet ⇄ meters), weight, and temperature. The module performs calculations based on real-time or fixed conversion rates and provides an intuitive GUI input/output for quick comparisons.

7.9 Reminder :

Allows users to set reminders for important events, meetings, or deadlines. It stores reminder data in files and triggers notifications or pop-ups when the scheduled time is reached, ensuring users never miss critical tasks.

7.10 System Information :

Displays detailed information about the computer's hardware and performance — including CPU temperature, memory usage, and available RAM. This module retrieves data using system-level commands and presents it through a readable interface.

7.11 Timer :

A countdown timer that helps users manage time-bound tasks such as coding challenges or productivity sprints. It supports start, pause, and reset functions, and alerts the user when the timer reaches zero.

7.12 Short Note :

A lightweight notepad feature that lets users quickly jot down and organize small notes. Notes are stored in local files and can be categorized or retrieved easily, providing a fast alternative to opening a separate note-taking application.

8. Team Members & Work Distribution

Member Name	Assigned Features
Mahabub Alam	Feature 1 – Interactive GUI Feature 3 – Light AI Feature 7 – System Settings
Mustasim Fuad	Feature 9 – Reminder Feature 10 – System Information Feature 11 – Timer
Noshin Atia Rubbat	Feature 2 – Local SMS Feature 4 – CMD Shell Feature 12 – Short Note
Mohona Rahman	Feature 5 – Custom Keyboard Shortcuts Feature 6 – App Launcher Feature 8 – Unit Converter

9. Conclusion

TaskBot aims to combine essential productivity tools into a single C-based application with a simple yet efficient GUI. It provides flexibility, ease of use, and a unified platform for users who want to streamline their day-to-day computer activities. Through this project, the team will apply practical knowledge of C programming, file handling, and GUI development to create a functional and impactful software system.