**SPL-1 Project Report, 2023**

**Typing Master: An Interactive Typing Tutor and Typing Game**

**SE 305: Software Project Lab**

Submitted by

***Mohammad Ismail Hossain***

**BSSE Roll No.: 1433**

**BSSE Session: 2021-22**

Supervised by

***Dr. Emon Kumar Dey***

**Associate Professor**

**Institute of Information Technology**

Signature of supervisor………………

Date: ………………………

****

**Institute of Information Technology**

**University of Dhaka**

**Submission Date: 17-05-2023**

Table of Contents

1. Introduction

1.1. Background Study

1.2. Challenges

2. Project Overview

3. User Manual

4. Conclusion

References

1. Introduction

The Typing Tutor and Typing Game Project is an interactive application designed to enhance typing skills while making the learning process interactive and effective. This application includes typing tutorial, typing practice exercises, typing games, detailed performance analysis. This application support both Bangla and English language. By integrating these functionalities, the project aims to provide a platform suitable for beginners looking to improve their typing skill. The incorporation of Bangla typing ensures useability for Bengali language users.

This project is mainly divided into 3 parts:

1. Typing Tutorial: The Typing Tutorial feature provides users with a comprehensive introduction to typing techniques. It gives interactive lessons that teach proper finger placement, hand positioning, and typing posture. Users will learn the basics of touch typing, including home row keys and finger assignment for each key.
2. Practice: In the Practice mode, users have the opportunity to improve their typing skills through a series of structured exercises. Users can select different types of typing exercises such as character type, word type, sentence type, paragraph practice. The application tracks users' progress, including words per minute (WPM) and accuracy, to help them monitor their improvement over time.
3. Typing Game: The Typing Game feature adds challenging aspect to the learning experience. Users can test their typing skill in an exciting game environment. The game displays falling characters that users must type correctly before they reach the bottom of the screen. As users progress, the game's speed and complexity increase, offering a dynamic and engaging way to put their typing skills to the test.

1.1 Background Study

A good typing skill is an important skill in this digital age. With an increasing reliance on computers and digital communication, efficient typing has become a fundamental skill across various professions and daily activities. The project aims to provide a comprehensive solution for individuals seeking to improve their typing speed, accuracy, and technique. This background study explores

the significance, and potential benefits of this Typing Tutor software project.

a. Necessity of Typing Tutor Software:

1. Enhancing Digital Literacy: In today's digital age, proficient typing skills are fundamental for effective communication, work efficiency.
2. Workplace Productivity: Improved typing skills lead to increased productivity in professional settings, enabling faster data entry, efficient document creation, and smoother communication.
3. Educational Benefits: For students, typing proficiency is essential for research, assignments, and exams, ensuring they can effectively express their knowledge without being hindered by slow typing speed.
4. Skill Development: A Typing Tutor project facilitates skill development by offering structured tutorials, varied practice exercises, and performance analysis tools, empowering users to track their progress and improve consistently.
5. Personal and Professional Growth: Proficient typing skills are transferable across various domains, contributing to personal growth by boosting confidence and professional growth by enhancing employability.

b. Objectives of Typing Tutor Software:

1. Improving Typing Speed: Enhancing users' typing speed through structured exercises and practice modules to enable faster typing.

2. Increasing Accuracy: Focusing on accuracy in typing to reduce errors and improve overall typing precision.

3. Teaching Proper Technique: Educating users on correct finger placement, posture, and typing techniques to maximize efficiency.

4. Customizable Learning Experience: Providing a personalized learning environment where users can adjust difficulty levels, choose specific exercises, and track their progress.

5. Multilingual Support: Including support for both Bangla and English language to make more useful to users.

6. Performance Analysis and Tracking: User can check his previous performance and can identify his weak zones.

1.2 Challenges

Developing a whole software project is never easy for someone who is doing it for the first time. A lot of challenges and obstacle I’ve faced during the project. Here are some important in the project that I have faced:

1. Learning C++: During this project I had to learn C++ more deeply. I have to use some complex syntax which was previously unknow to me.

1. Handling a Large Project: At the beginning I was clueless about where to start from, how to design the project, connect all the small parts of my project with one another. I had no experience on building big projects as I did small academic assignments which had not more than 200 significant lines of code. Then I divide my whole project into some modules. I was thinking about the process of connecting all the modules with a root module. Then I made a single C++ header files which defines all the modules. Thus I have connect all the modules with each other. The header file can be accessed by any function that belonged to that project.

3. File Handling Operations: In my project I have used text file for many cases. Users’ performance is stored in text file. Also typing practice exercise are taken from text file. That’s why handling the files read write operation was a significant challenge for me.

4. Bangla Language Support: As C++ doesn't support Bangla language directly, It was not a easy task to add Bangla language support. But it supports Unicode. Then I try to use appropriate encoding standards between Unicode to Bangla character and thus I can effectively work with Bangla. Besides there are different keyboard layout for Bangla language. To keep Bangla typing easier to the beginner, here I used Avro Phonetic Keyboard.

2. Project Overview