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# **Mini-Project – 1A for Front end / backend Application using JAVA**

**(ITM 301)**

## **Typing Accelerator**

**S. E. Information Technology**

By

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## CERTIFICATE

This is to certify that the project entitled “**Typing Accelerator**” is a bonafide work of “**Ganesh Podeti, Gargi Pungle, Valeska Rosario, Dharamveer Saw**” Roll Nos. **25, 26, 31, 33** submitted to the University of Mumbai towards completion of mini project work for the subject of **Mini Project –1A for Front end / backend Application using JAVA (ITM 301)**.

**Ms. Sonali Suryawanshi**  
**Mini Project Guide**

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Examiners

1.-----

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Date:



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## DECLARATION

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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## ABSTRACT

In an increasingly digital world, typing proficiency is a vital skill. The ability to type quickly and accurately not only enhances productivity but also opens doors to various opportunities in both education and employment. To address the need for an engaging and effective typing learning tool, we present "Typing Accelerator," a gamified typing application designed to enhance users' typing skills in an interactive and enjoyable manner. By combining the principles of gamification with effective typing techniques, Typing Accelerator aims to revolutionize the way people learn and enhance their typing skills. This abstract provides an overview of the key features that make Typing Accelerator a unique and valuable tool for individuals seeking to accelerate their typing proficiency in an enjoyable and interactive manner. In the digital age, proficient typing skills are fundamental for efficient communication and productivity. Typing accelerators have emerged as indispensable tools, addressing the need for faster and more accurate typing. This abstract explores a cutting-edge Typing Accelerator, integrating advanced technologies to revolutionize the typing experience. Furthermore, the Typing Accelerator employs adaptive learning mechanisms, continuously evolving and adapting to individual users' typing styles. Through personalized training modules, users can enhance their weak areas, gradually improving their overall typing proficiency. The accelerator also provides interactive typing games and exercises, transforming the learning process into an engaging and enjoyable experience. In conclusion, the Typing Accelerator presented in this abstract represents a significant leap forward in the realm of typing proficiency tools. By adaptive learning technologies, it empowers users to type faster, more accurately, and with heightened confidence. This innovation not only enhances individual productivity but also contributes to a more efficient and connected digital society.



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## List of Abbreviations

Sr. No.	Abbreviation	Full Form
1	SQL	Structured Query Language
2	JDBC	Java Database Connectivity
3	GUI	Graphical User Interface
4	IDE	Integrated Development Environment

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# **Chapter 1**

## **Introduction**

### **1.1 Background**

The "Typing Accelerator" project is rooted in the recognition of the paramount importance of efficient typing skills in the contemporary digital landscape. As we navigate the digital age, typing has evolved from a basic competence to a fundamental necessity, touching every facet of our lives. Whether in academia, the workplace, or even personal communication, the ability to type swiftly and accurately directly influences our productivity, efficiency, and overall effectiveness. It is in this context that the Type Accelerator project emerges as a response to a glaring need for innovative and engaging solutions to address the challenges of typing proficiency.

Traditional typing lessons often fall short in terms of motivation and engagement. The "Typing Accelerator" project seeks to remedy this by infusing a sense of excitement and gamification into the learning process. Drawing inspiration from the acceleration of a car as speed increases, the project aims to transform the journey of improving typing skills into an exhilarating experience. This approach not only aligns with the modern demand for engaging and interactive learning but also capitalizes on the inherent human drive for competition and self-improvement.

The background of the project underlines the transformation of typing from a mundane skill into a dynamic art, where swiftness and precision are equally critical. In this rapidly changing landscape, "Typing Accelerator" positions itself as a timely solution to meet the evolving demands of digital literacy. By combining the need for speed with the thrill of acceleration, this project aspires to provide an educational resource that resonates with learners of all ages and backgrounds, reinforcing the notion that learning can be both enjoyable and productive.

### **1.2 Need and Scope of the project**

In today's digital age, the need for proficient typing skills has never been more pronounced. From academic assignments to professional endeavors, and even everyday communication, typing is an integral part of our lives. However, traditional typing lessons can often be





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monotonous and uninspiring. This is where the concept of a typing site that combines the need for speed with the thrill of acceleration comes into play. We live in a world where efficiency and speed matter, and the ability to type faster can significantly boost productivity. A typing site that incorporates gamification elements, mimicking the sensation of accelerating a car as typing speed increases, not only makes the learning process enjoyable but also taps into the competitive spirit within us. It fosters engagement, motivation, and a desire to continually improve, much like striving to accelerate a car to its top speed. The scope for typing games is quite extensive, especially in today's digital age where typing skills are essential for various tasks, including work, education, and communication. Here are several areas where typing games have a significant scope: Education, Workplace Training and Skill enhancement.

### 1.3 Objectives and Problem Statement

The "Type Accelerator" project sets out to achieve several key objectives. First and foremost, it aims to significantly enhance users' typing speed, enabling them to type more swiftly and efficiently. Additionally, the project seeks to improve typing accuracy, recognizing that precision is equally vital in effective communication and productivity. To ensure accessibility for users of all ages and skill levels, a user-friendly interface will be developed, making the learning process enjoyable and straightforward. Moreover, gamification elements will be integrated, turning the process of improving typing skills into an exciting and engaging experience, akin to the sensation of acceleration. Lastly, the project will include a progress tracking system, enabling users to set goals and monitor their advancement, ultimately motivating them to persistently hone their typing abilities. This multifaceted approach to speed and accuracy improvement forms the core of the "Type Accelerator" project's objectives.

1. **Improving Typing Speed:** One of the primary objectives of typing games is to increase your typing speed. Through repeated practice, players can become more proficient at typing quickly and accurately.
2. **Enhancing Typing Accuracy:** Typing games help users develop greater accuracy in their typing, reducing errors and improving overall typing precision.
3. **Building Muscle Memory:** Typing games can help users develop muscle memory for keyboard layouts, making it easier to type without looking at the keyboard.





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4. **Increasing Vocabulary and Language Skills:** Some typing games involve typing words, phrases, or sentences, which can improve vocabulary and language comprehension.
5. **Reducing Typing Stress:** Typing games can help reduce the stress associated with typing, making it a more enjoyable and less anxiety-inducing activity.
6. **Boosting Focus and Concentration:** Many typing games require players to concentrate on the screen, which can help enhance their ability to focus and pay attention to details.
7. **Providing a Fun Learning Experience:** Typing games often combine education with entertainment, making the learning process more enjoyable and engaging.



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## Chapter 2

### Literature Review

**TypeRacer** : TypeRacer is an online typing game that allows users to compete in typing races against other players in real-time. The concept is simple: players are presented with a snippet of text, and they must type it as quickly and accurately as possible. The faster and more accurate your typing, the faster your virtual car moves in the race.[14]

**TypingClub**:TypingClub is an online platform that offers free typing lessons and games. It provides a comprehensive set of lessons, drills, and games to help users enhance their typing skills. The gaming elements, such as completing challenges and earning badges, keep learners motivated and engaged. It's suitable for users of all ages and skill levels.[15]

**10FastFingers**:10FastFingers is an online platform that turns typing into a competitive sport. Users are presented with a variety of texts and challenged to type them as quickly and accurately as possible. They can compete with typists from around the world and earn rankings based on their typing performance.[16]

**Keybr**:Keybr takes a minimalist approach to typing practice with gamified elements. It adapts to your skill level and introduces new letters, words, and sentences as you improve. The interface is clean and simple, focusing on the core typing experience.[17]

**Typing.com** :- Typing.com is an online platform that offers comprehensive typing lessons and tests to help users improve their keyboarding skills. With a user-friendly interface, it provides interactive exercises, tutorials, and real-time feedback to enhance typing speed and accuracy. Whether you're a beginner or looking to refine your typing abilities, Typing.com offers a wide range of lessons and practice materials to suit your needs, making it a valuable resource for anyone seeking to boost their typing proficiency.[18]



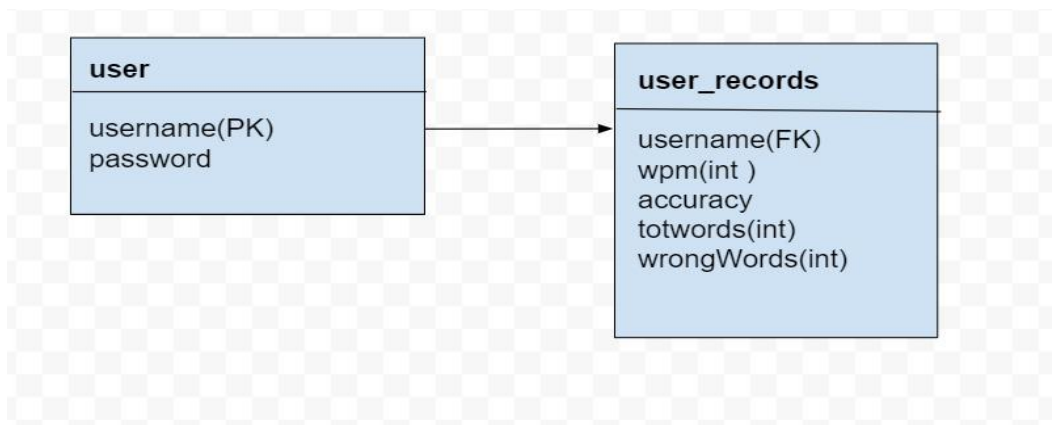
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## Chapter 3 Proposed Work

### 3.1 Architectural Details



**Fig 3.1.a ER of Database connectivity**

The database for typing accelerator consists of 2 tables: the 'user' and 'user\_records' refer fig 3.1.a . The user table stores the data of the registered players. The user table consists of two columns named username which is a primary key, it stores the username given by the user (it has to be unique and at least 8 characters) and the password column stores the password entered by the user which cannot be Null.

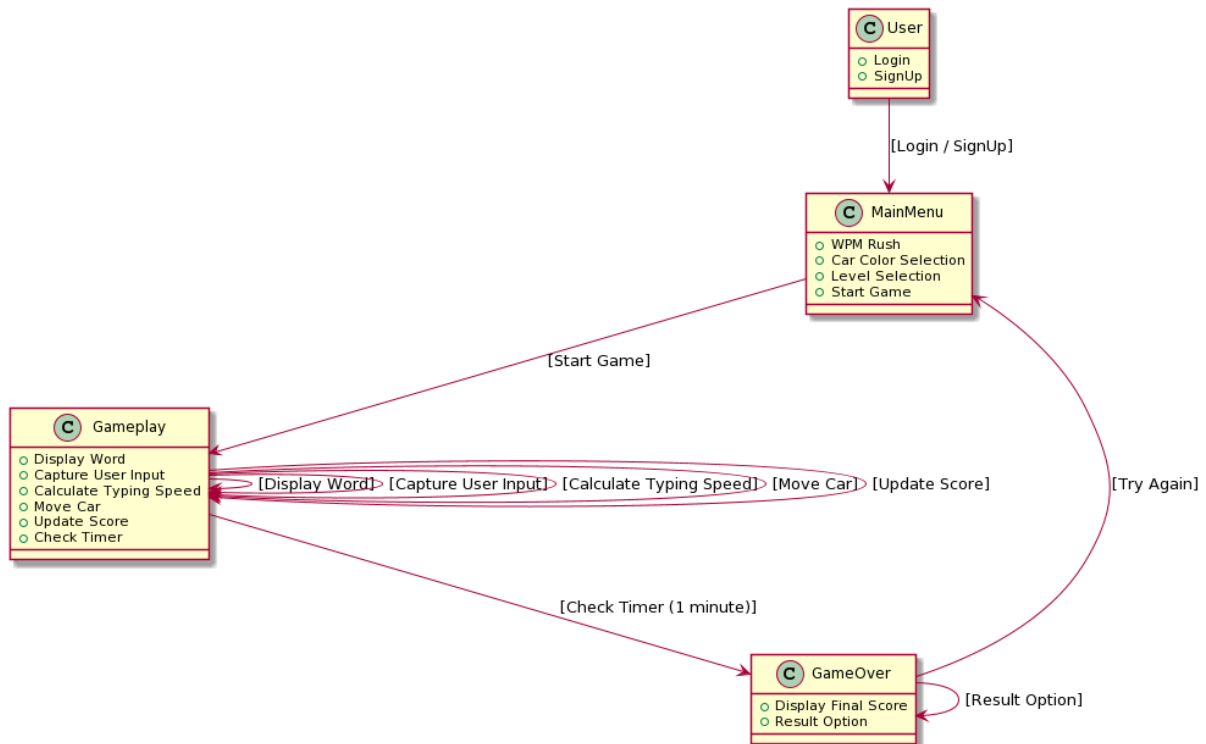
The second table user\_records is linked with the user table with the help of a foreign key. It consists of five columns namely username which stores the username, the wpm column stores the typing speed of the user, accuracy column stores the accuracy of users typing, the column totwords stores the total words typed by the user, wrongWords stores wrong words typed by the user.



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**Fig 3.1.b Working of game**

1. The user either has to create a new account or login by clicking the sign up or login button respectively refer to fig 3.1.
2. After Login in or Signing up a new interface will appear where the user has to click the WPM Rush button to play the game.
3. On clicking the WPM Rush button, A new GUI will appear where the user has to select their car color and level of the game and then click the Start button to begin the Game.
4. When the user starts typing the game starts and according to the typing speed of the user car their car will move. The game is of 1 minute so the user has to complete the race in 1 minute.
5. If the user completes the game they win otherwise lose. Either after completion of 1 minute or the user wins the game, the Result button will appear.
6. On clicking the Result button the user can see the result of the game i.e there typing speed, correct words, wrong words, etc
7. There is also a try again button. On clicking which the user again goes to the main menu



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## Chapter 4 Implementation

### 4.1 Frontend Details

**JavaFX** is an open source, next generation client application platform for desktop, mobile and embedded systems built on Java. It is a collaborative effort by many individuals and companies with the goal of producing a modern, efficient, and fully featured toolkit for developing rich client applications.[6]

**Scene Builder** is free and open source, but is backed by Gluon.Drag & Drop user interface design that allows for rapid iteration. Separation of design and logic files allows for team members to quickly and easily focus on their specific layer of application development.[12]

### 4.2 Backend Details

**MySQL 8.2.0.** MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modeling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more. MySQL Workbench is available on Windows[11]

### 4.3 Codes:

```
//HelloApplication
//start
// login scene
package com.tonevallah.demofx1;

import javafx.application.Application;
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.image.Image;
import javafx.stage.Stage;
import java.io.IOException;

public class HelloApplication extends Application {
```



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```
@Override
public void start(Stage stage) {
    try {
        Parent root = FXMLLoader.load(getClass().getResource("hello-view.fxml"));
        Scene scene = new Scene(root);
        stage.setTitle("TYPING ACCELERATOR");
        Image icon = new
Image("C:\\Users\\Valeska\\Desktop\\javafx-mini-project-sem-3-typedash\\src\\main\\resourc
es\\com\\tonevallah\\demofx1\\TypeAcceleratorLogo.png ");
        stage.getIcons().add(icon);
        stage.setFullScreen(true);
        stage.setScene(scene);
        stage.show();
    }
    catch(Exception e) {
        System.out.println(e);
    }
}

public static void main(String[] args) {
    launch();
}

}

/* */
//homepage
package com.tonevallah.demofx1;
import javafx.event.ActionEvent;

public class Scene1Controller {
    static public int lvl=1; // level 1,2,3
    static public int car=1; // car 1,2,3
    static public int log=0; // log = 0 not logged in log in 1 logged in

    FXMLLoader fxmLoader = new FXMLLoader();

    // Opening the login GUI
    public void loginpage(ActionEvent event){
        try {
            fxmLoader.loadingFxml(event, "Scene2.fxml");
        } catch (Exception e){
            System.out.println(e);
        }
    }
}
```



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```
// Opening the Signup GUI
public void signupdate(ActionEvent event){
    try {
        FXMLLoader.loadingFXML(event, "Scene3.fxml");
    } catch (Exception e) {
        System.out.println(e);
    }
}

// Exiting the Application
public void exit(ActionEvent e) {
    System.exit(0);
}
}

/* */
//login logic
package com.tonevallah.demofx1;

import com.tonevallah.demofx1.dao.CloseResourcesDao;
import com.tonevallah.demofx1.dao.Scene2ControllerDao;
import javafx.event.ActionEvent;
import javafx.fxml.FXML;
import javafx.scene.control.Label;
import javafx.scene.control.PasswordField;
import javafx.scene.control.TextField;

import static com.tonevallah.demofx1.Scene1Controller.log;

public class Scene2Controller {
    @FXML
    private TextField uname;
    @FXML
    private PasswordField pass;
    @FXML
    private Label warning;
    public String username;
    public String password;
    private Scene2ControllerDao scene2ControllerDao = new Scene2ControllerDao();
    private FXMLLoader fxmlLoader = new FXMLLoader();

    public void menu(ActionEvent event) {
        username=uname.getText();
    }
}
```





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```
password=pass.getText();

try {
    if (scene2ControllerDao.checkUserExist(username,password)) {
        try {
            log = 1;
            System.out.println("user: " + username + ". pass: " + password);
            System.setProperty("username",username); // Making username accessible
everywhere in the program

            fxmLoader.loadingFXML(event,"Scene4.fxml");

        } catch (Exception e){
            System.out.println(e);
        }
    } else {
        warning.setText("Wrong Name or Password!");
        warning.setVisible(true);
        System.out.println("User not found");
        uname.setText("");
        pass.setText("");
    }
} finally { // Closing Connections and all resources
    try {
        CloseResourcesDao closingResources = new CloseResourcesDao();
        closingResources.closeResources();
    } catch (Exception e){
        System.out.println(e);
        System.out.println("Error while closing connection in Scene 2 controller.");
    }
}
}

public void goback(ActionEvent event) {
    try {
        fxmLoader.loadingFXML(event,"hello-view.fxml");

    } catch (Exception e){
        System.out.println(e);
        System.out.println("Failed to load hello-view.fxml");
    }
}
}
```



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```
/* */
//signup GUI controller
package com.tonevallah.demofx1;
import com.tonevallah.demofx1.dao.CloseResourcesDao;
import com.tonevallah.demofx1.dao.Scene3ControllerDao;
import javafx.event.ActionEvent;
import javafx.fxml.FXML;
import javafx.scene.control.Label;
import javafx.scene.control.PasswordField;
import javafx.scene.control.TextField;

import java.io.*;

import static com.tonevallah.demofx1.Scene1Controller.log;
public class Scene3Controller {
    @FXML
    private TextField uname;
    @FXML
    private PasswordField pass;
    @FXML
    private Label warning;
    public String username;
    public String password;
    private Scene3ControllerDao scene3ControllerDao = new Scene3ControllerDao();
    private FXMLLoader fxmlLoader = new FXMLLoader();

    public void menu(ActionEvent event) throws IOException {
        username=uname.getText();
        password=pass.getText();

        char firstCharOfUsername = username.charAt(0);
        if (Character.isDigit(firstCharOfUsername)){
            warning.setText("Can't begin Username with a Number");
            warning.setVisible(true);
        }
        else if(username.equals("")){
            warning.setText("Enter a Username");
            warning.setVisible(true);
        }
        else if(password.equals("")){
            warning.setText("Enter a Password");
            warning.setVisible(true);
        }
    }
}
```



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```
else {
    try {
        if (scene3ControllerDao.ifUsersExists(username)) { // If username already exists
            warning.setText("Name already taken!");
            warning.setVisible(true);
            System.out.println("user exists");

            uname.setText("");
            pass.setText("");
        } else { // If username doesn't exist.
            scene3ControllerDao.addUser(username,password); // Adding user into the user
table.
            log=1;
            fxmLoader.loadingFXML(event,"hello-view.fxml");
        }
    } catch (Exception e){
        System.out.println(e);
    } finally { // Closing All Resources (Connections and all)
        try {
            CloseResourcesDao closingResources = new CloseResourcesDao();
            closingResources.closeResources();
        } catch (Exception se){
            System.out.println(se);
            System.out.println("Error while closing connection in SCene 3 controller.");
        }
    }
}

}

}

public void goback(ActionEvent event) {
    try {
        fxmLoader.loadingFXML(event, "hello-view.fxml");
    } catch (Exception e){
        System.out.println(e);
    }
}
}

}

/* */
// Typing Game Scene Controller
package com.tonevallah.demofx1;
import com.tonevallah.demofx1.dao.CloseResourcesDao;
import com.tonevallah.demofx1.dao.Scene6ControllerDao;
import javafx.event.ActionEvent;
```



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```
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.geometry.Insets;
import javafx.scene.Node;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.control.*;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.input.KeyCode;
import javafx.scene.input.KeyEvent;
import javafx.scene.input.MouseEvent;
import javafx.scene.paint.Color;
import javafx.scene.text.Text;
import javafx.scene.text.TextFlow;
import javafx.stage.Stage;
```

```
import java.io.*;
import java.sql.*;
import java.time.Duration;
import java.time.Instant;
import java.util.*;
import java.util.concurrent.Executors;
import java.util.concurrent.ScheduledExecutorService;
import java.util.concurrent.TimeUnit;
```

```
import static com.tonevallah.demofx1.Scene1Controller.*;
import static com.tonevallah.demofx1.Scene1Controller.car; // Importing car (value = 1 or 2
or 3). Chosen by the user.
```

```
public class Gamecontroller {
    private int wordCounter = 0;
    private int first = 0;
    int fir = 0;
    ScheduledExecutorService executor = Executors.newScheduledThreadPool(1);
    @FXML
    private Stage stage;
    private Scene scene;
    private Parent root;
    @FXML
    public Text seconds; // Displaying Seconds
    @FXML
    private Text wordsPerMin; // displaying WPM per word
```



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```
@FXML
private Text accuracy; // Display accuracy
@FXML
private Text programWord; // current word that is expected by user to type (hidden behind
textflow (Text to be shown to type in the GUI))
@FXML
private Text secondProgramWord; // hidden behind textflow (Text to be shown to type in
the GUI)
@FXML
private Text thirdProgramWord; // hidden behind textflow (Text to be shown to type in the
GUI)
@FXML
private Text secpreviousProgramWord; // previous word ka bhi previous word (hidden
behind textflow (Text to be shown to type in the GUI))
@FXML
private Text previousProgramWord; // hidden behind textflow (Text to be shown to type in
the GUI)
@FXML
private TextFlow textflow; // Text to be shown to type in the GUI
@FXML
private TextField userWord; // Actual word entered by user.
@FXML
private ImageView correct; // correct image whose visibility will be set to false in
setFirstWord method.
@FXML
private ImageView wrong; // wrong image whose visibility will be set to false in
setFirstWord method.
@FXML
private Button viewResult; // View Result button whose visibility will be set to false in
setFirstWord method.
@FXML
private Text greyText; // setting previous to previous word to gray.
@FXML
private Text blueText; // setting current word to type to color blue.
@FXML
private Text greenText; // Setting previous correct typed to green
@FXML
private Text lastText; // This will select last word typed by the user(aage we will set it's
color to green if correct. if wrong -> pink)
@FXML
private ImageView imgview; // will set imgview to car image in setFirstWord method.
// private double x1;
private double y1;
```



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```
@FXML
private Label won;
@FXML
private Label lost;
private boolean carStopped = false;
private long pretime = 0;
Instant start,end;
private Scene2Controller scene2Controller = new Scene2Controller();

// Alloting sentence that will be printed in the GUI
public String givenstring =takeGivenLine();
public String takeGivenLine() {

    int min = 0, max = 25,i=0;
    Random random = new Random();
    int ranNum = random.nextInt(max - min + 1) + min; // random num between 0 to 25
    String st1 = "";
    try {
        File file;
        if(lvl == 1) {
            file = new
File("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\src\\main\\resou
rces\\com\\tonevallah\\demofx1\\textLevel1");
        }else if (lvl == 2) {
            file = new
File("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\src\\main\\resou
rces\\com\\tonevallah\\demofx1\\textLevel2");
        }
        else{ // lvl 3
            file = new
File("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\src\\main\\resou
rces\\com\\tonevallah\\demofx1\\textLevel3");
        }
        Scanner fileInput = new Scanner(file);
        while (fileInput.hasNext()) {
            String s = fileInput.nextLine();
            if(i >= ranNum) st1 += s;
            i++;
        }
        fileInput.close();
    }catch(Exception e){
        System.out.println("Error while retrieving text");
        System.out.println(e);
    }
}
```





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```
    }  
    return st1;  
}  
String[] givenwords = givenstring.split(" "); // Creating array which will store all words  
from the text that will be displayed to type  
  
// In this function we are setting programWord to given word to type  
public void setfirstword() {  
    secpreviousProgramWord.setText("start");  
    previousProgramWord.setText("here:- ");  
    programWord.setText(givenwords[0]);  
    secondProgramWord.setText(givenwords[1]);  
    thirdProgramWord.setText(givenwords[2]);  
  
    greyText=new Text("");  
    greyText.setFill(Color.GREY);  
    blueText = new Text(givenwords[0]); // Assigning current word to type to blueText  
    blueText.setFill(Color.BLUE);  
  
    String st=" "; // This will store all the sentences after the first word.  
    for(int i=1;i<35;i++){  
        st+=givenwords[i] + " ";  
    }  
    greenText = new Text(st); // assigning greenText all the sentences after the first word i.e  
pogramWord  
    greenText.setFill(Color.BLACK);  
  
    textflow.getChildren().addAll(greyText,blueText, greenText);  
    textflow.setStyle("-fx-font: 28 arial;");  
    textflow.setPrefWidth(700);  
  
    textflow.setPadding(new Insets(15, 15, 15, 15));  
  
    start = Instant.now();  
  
    viewResult.setVisible(false);  
    wrong.setVisible(false);  
    correct.setVisible(false);  
    //    System.out.println("car "+ car);  
    if(car==1) imgview.setImage(new Image  
("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\resources\\car_yello  
w.png"));
```





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```
else if(car==2) imgview.setImage(new Image  
("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\resources\\car_red.p  
ng"));
```

```
else if(car==3)imgview.setImage(new Image  
("C:\\Users\\Ganesh\\OneDrive\\Documents\\Dharam\\miniProjectSem3\\resources\\car_pink.  
png"));
```

```
won.setVisible(false);  
}
```

// on key pressed (interface where user types the word) startGame method executes. Note:  
fx id is set to userWord

```
public void startGame(KeyEvent ke) {  
    try {  
        if (first == 0) {  
            first = 1;  
            executor.scheduleAtFixedRate(r, 0, 1, TimeUnit.SECONDS);
```

```
            end = Instant.now();  
            Duration timeElapsed = Duration.between(start, end);  
            pretime = timeElapsed.toMillis();  
        }  
    }
```

```
    if (ke.getCode().equals(KeyCode.SPACE)) {  
        int colf = 5;  
        System.out.println(first);  
        String s = userWord.getText();  
        if (fir >= 1) s = s.substring(1, s.length());  
        fir++;  
        String real = programWord.getText();
```

```
        countAll++;  
        if (s.equals(real)) {  
            counter++;  
            double tm = 60;  
            double wpm = (counter / (tm - timer)) * tm;  
            wordsPerMin.setText(String.valueOf((int) wpm));
```

```
            wrong.setVisible(false);  
            correct.setVisible(true);
```

```
            if (lvl == 1) speed = (int) wpm / 5;  
            else if (lvl == 2) speed = (int) wpm / 5 + 3;
```



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```
//      else if (lvl == 3) speed = (int) wpm / 5 + 6;
      else if (lvl == 4) speed = (int) wpm / 5 + 9;

      colf = 1;
    } else {
      double tm = 60;
      double wpm = (counter / (tm - timer)) * tm;
      wordsPerMin.setText(String.valueOf((int) wpm));

      wrong.setVisible(true);
      correct.setVisible(false);

      speed = 0;
      colf = 0;
    }

    userWord.setText("");
    accuracy.setText(String.valueOf(Math.round((counter * 1.0 / countAll) * 100)) +
"%");

    programWord.setText(givenwords[fir]);
    secondProgramWord.setText(givenwords[fir + 1]);
    previousProgramWord.setText(givenwords[fir - 1]);

    if (fir >= 3) secpreviousProgramWord.setText(givenwords[fir - 2]);
    else secpreviousProgramWord.setText("here:- ");

    int lim = 0;
    if (fir < 35) lim = 35;
    else if (fir < 35) lim = 35;
    else if (fir < 70) lim = 70;
    else if (fir < 105) lim = 105;
    else if (fir < 140) lim = 140;
    else if (fir < 175) lim = 175;

    textflow.getChildren().clear();
    String st = "";
    for (int i = lim - 35; i < fir - 1; i++) {
      st += givenwords[i] + " ";
    }
    greyText = new Text(st);
    greyText.setFill(Color.GREY);
```



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```
lastText = new Text(givenwords[fir - 1] + " ");
if (colf == 0) lastText.setFill(Color.LIGHTPINK);
else lastText.setFill(Color.LIGHTGREEN);

blueText = new Text(givenwords[fir]);
blueText.setFill(Color.BLUE);
blueText.setUnderline(true);

st = " ";
for (int i = fir + 1; i < lim; i++) {
    st += givenwords[i] + " ";
}
greenText = new Text(st);
greenText.setFill(Color.BLACK);

textflow.getChildren().addAll(greyText, lastText, blueText, greenText);
textflow.setStyle("-fx-font: 28 arial;");
textflow.setPrefWidth(700);
}
} catch (Exception e) {
    System.out.println(e);
    e.printStackTrace();
}
}

public void resultview(MouseEvent e) throws IOException {
    String username = System.getProperty("username");
    System.out.println("username in gc " + username);

//    Inserting into users_record table
    try {
        Scene6ControllerDao scene6ControllerDao = new Scene6ControllerDao();
        scene6ControllerDao.insertIntoUsersRecord(username, counter, countAll);
    }
    finally {
        try {
            CloseResourcesDao closingResources = new CloseResourcesDao();
            closingResources.closeResources();
        } catch (Exception se) {
            System.out.println(se);
        }
    }
}
FXMLLoader loader = new FXMLLoader(getClass().getResource("Scene6.fxml"));
root = loader.load();
```



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```
stage = (Stage) ((Node) e.getSource()).getScene().getWindow();
Scene6Controller scene6controller = loader.getController();
int acc = (int) Math.round((counter * 1.0 / countAll) * 100);
scene6controller.displayResult(counter, acc, countAll, countAll - counter);
// scene = new Scene(root);
scene = new Scene(root, 1920, 1080);

stage.setScene(scene);
stage.show();
}

// if time over logic below
private int countAll = 0;
private int counter = 0;
private int timer = 60;
private int speed = 0;
Runnable r = new Runnable() {
    @Override
    public void run() {
        if (timer > -1 && !carStopped) {
            seconds.setText(String.valueOf(timer));
            timer -= 1;
            wrong.setVisible(false);
            correct.setVisible(false);
            imgview.setY(y1 -= speed);
            if (y1 <= -480) {
                won.setVisible(true);
                carStopped = true;
                userWord.setDisable(true); // Not allowing user to enter more words
                userWord.setText("Game over");
                viewResult.setVisible(true); // View Result Button
            }
            double tm = 60;
            double wpm = Math.ceil((counter / (tm - timer)) * tm);
            wordsPerMin.setText(String.valueOf((int) wpm));
        }
        else {
            if (timer == -1) {
                won.setText("You Lost!");
                lost.setVisible(true);
                userWord.setDisable(true);
                userWord.setText("Game over");
                viewResult.setVisible(true);
            }
        }
    }
}
```



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```
    }
    if (timer == -4) {
        viewResult.setVisible(true);
        viewResult.setDisable(false);
        executor.shutdown();
    }
}
};

public void goBack(ActionEvent event){
    try {
        Alert alert = new Alert(Alert.AlertType.WARNING);
        alert.setTitle("Go Back");
        alert.setHeaderText("Are you sure you want to go back?");
        alert.setContentText("If you are in between the Game, your current game process will
be lost:");

        if (alert.showAndWait().get() == ButtonType.OK) { // agar OK tap kiya to
            FXMLLoader fxmlLoader = new FXMLLoader();
            fxmlLoader.loadingFxml(event, "Scene4.fxml");
        }
    } catch (Exception e){}
}
```



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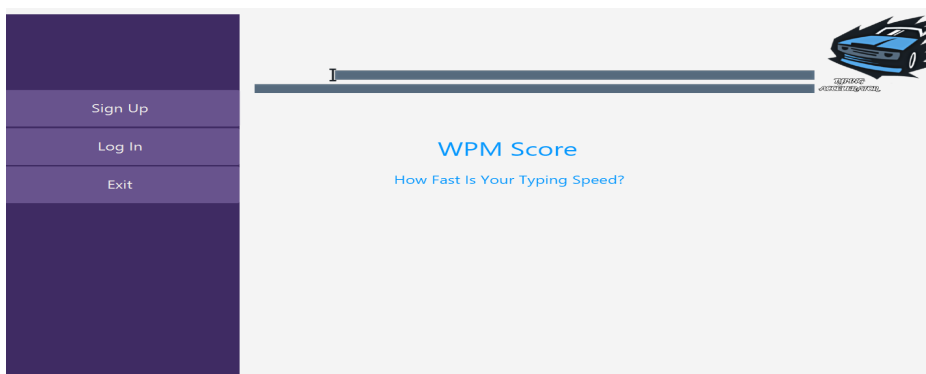
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## Chapter 5

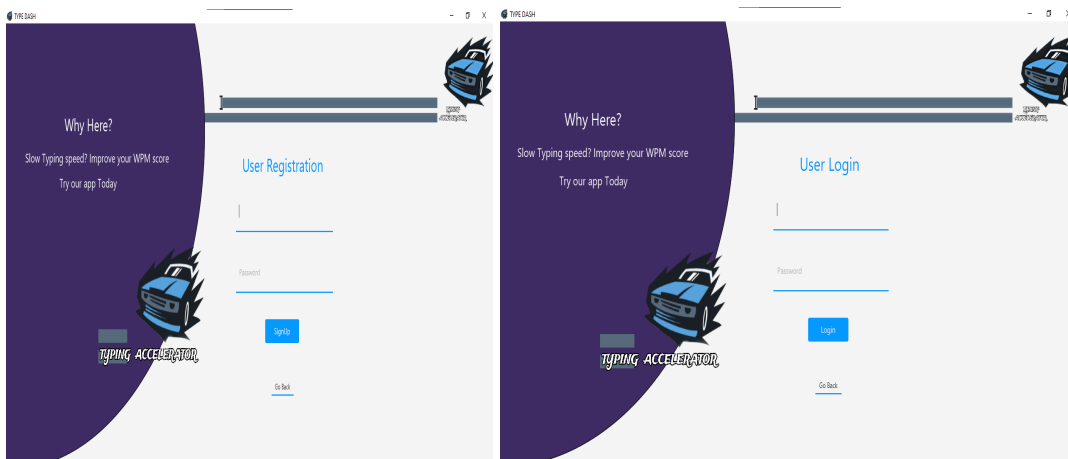
### Results and Discussions

#### 5.1 Screenshots of GUI:



**Fig 4.3.a Home page of Typing Accelerator**

The home page of typing Accelerator refer fig 4.3.a where in you can find buttons where the user can sign up, log in ,or exit from the sight



**Fig 4.3.b User registration**

**Fig 4.3.c User login**

- Players begin by entering their credentials refer fig 4.3.a and fig 4.3.c usually a username and password, on the game's login screen.
- The authentication process verifies the entered information against stored user data to ensure the player is who they claim to be.



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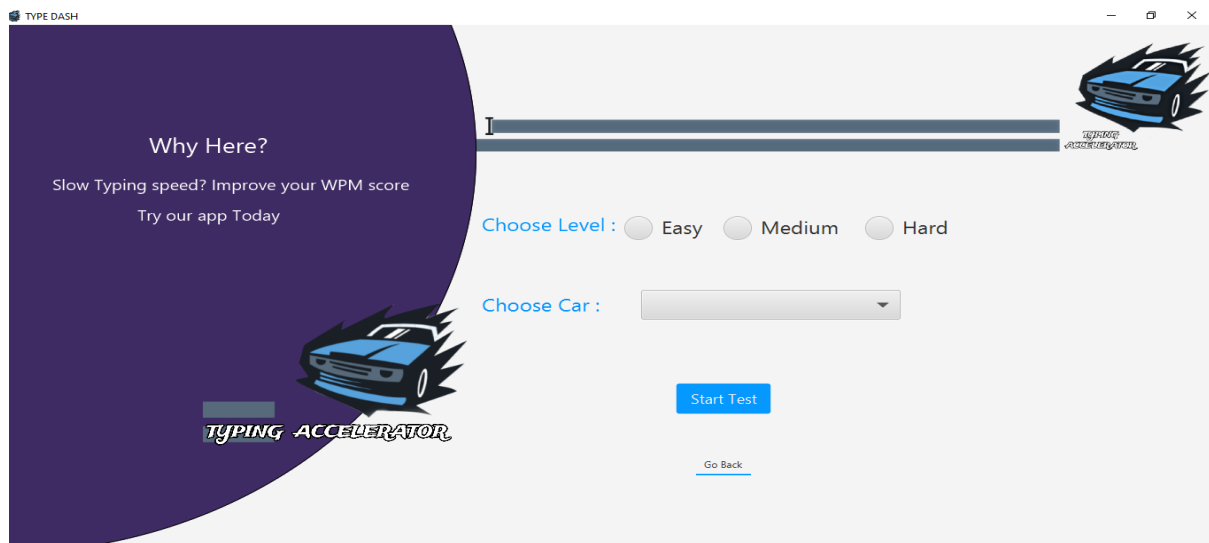
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For new players, there might be an option to create a new account. This involves choosing a unique username and a secure password.

Username validation logic: Minimum 5 characters which has to be a character data type.

Password validation logic: Minimum 5 characters, first character should be uppercase and should contain numbers and special characters.

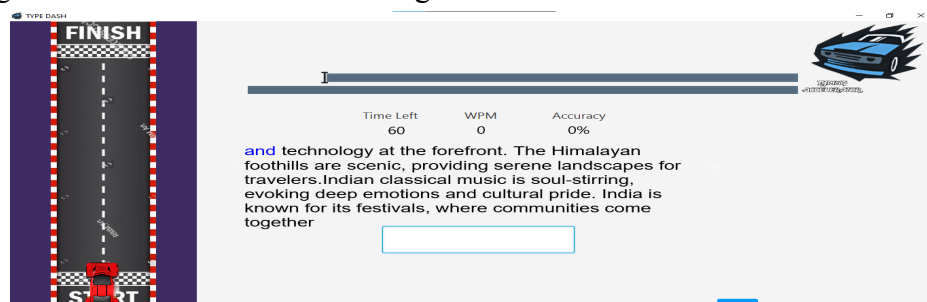


**Fig 4.3.d Selection of level and color of car**

After the user has entered his or her details is to select the type of level that the user needs for his practice refer fig 4.3.d.

- Easy Level : Being the easiest level where in the user type and practice simple typing and get a good hands on experience to type faster
- Medium Level : Being able to type with various punctuation and brackets, getting a practice of typing like a paragraph.
- Hard Level : Being the most difficult level, especially for programmes practice this level helps programmes to practice typing codes.

The typing interface looks like this refer fig 4.3.e



**Fig 4.3.e Initial stage of game**

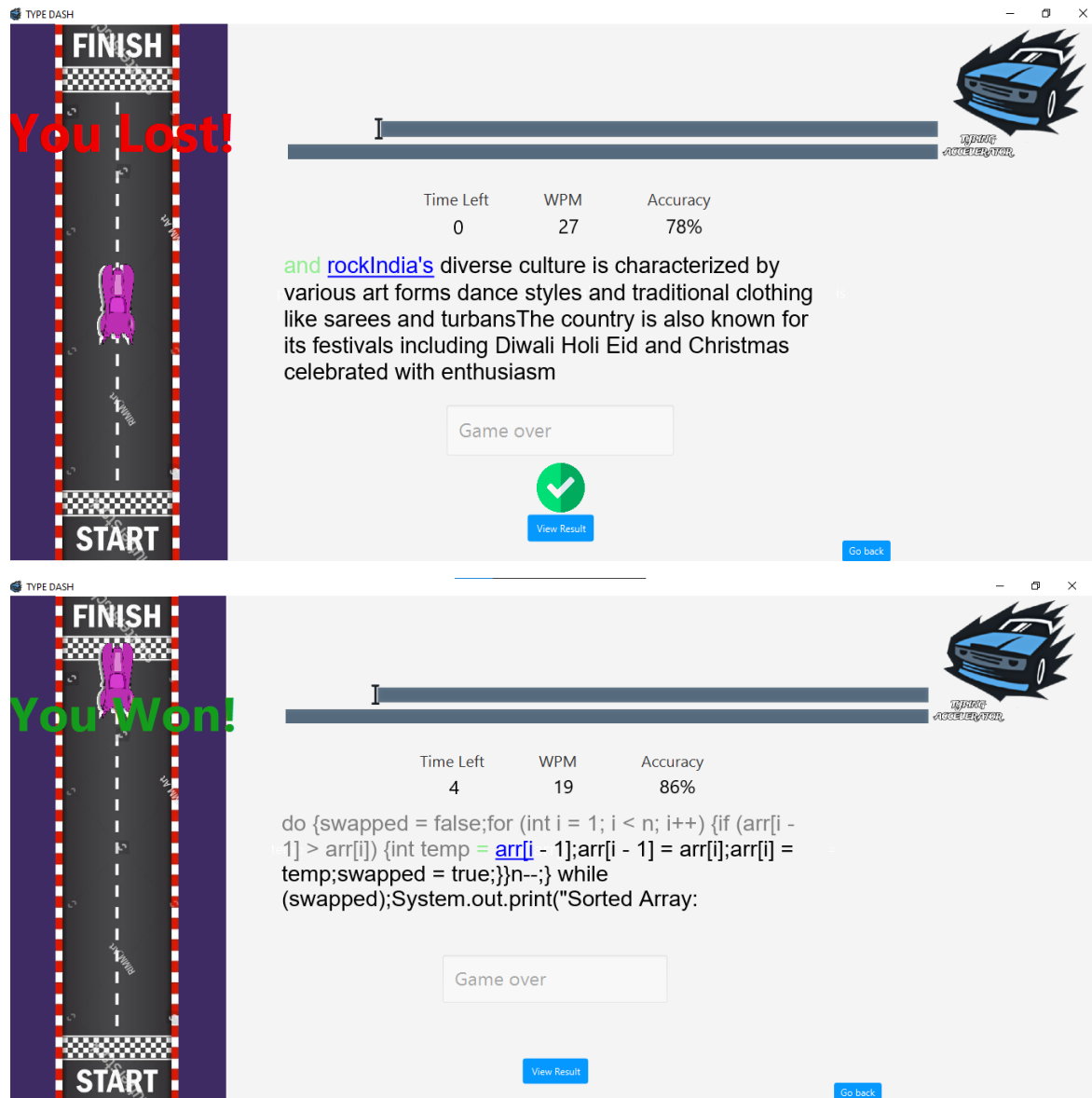




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**Fig 4.3.f Game status**

This being the interface of the game wherein the player types the passage fig 4.3.f

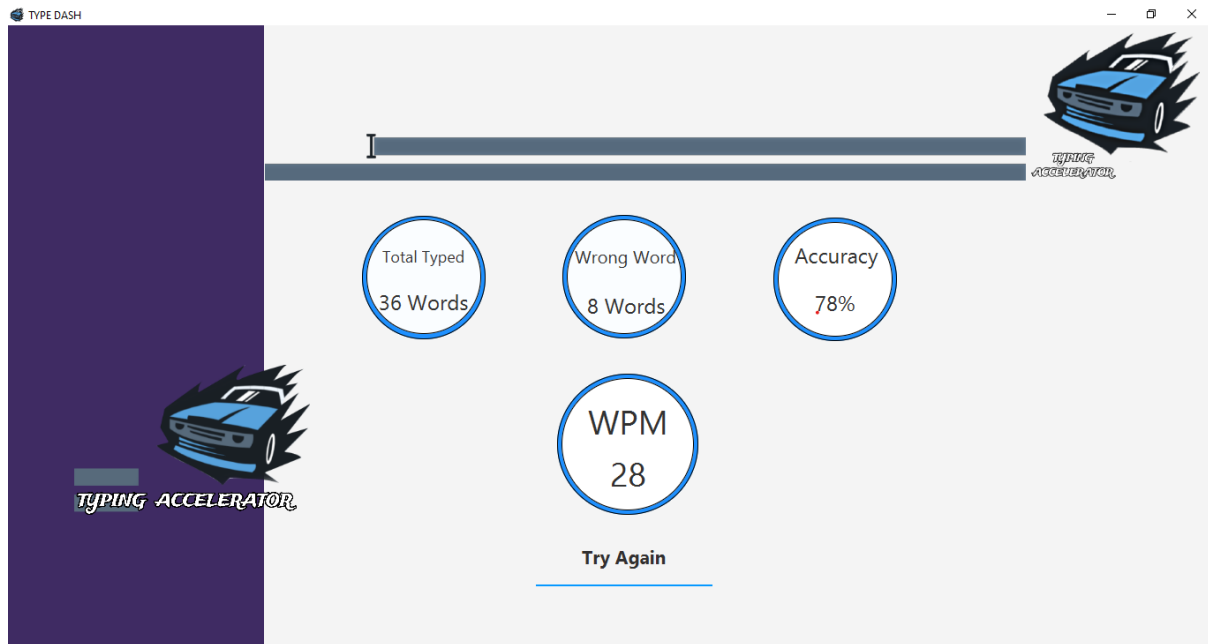
- If the user finishes typing the paragraph or the passage given ,the payer gets the “You Won “ page in front of him
- If the user is not able to complete the paragraph or the passage given ,the payer gets the “You Lost “ page in front of him



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**Fig 4.3.g Results of user after a game**

After every game the report of the user is shown to them refer fig 4.3.g

With the results of his/her total words typed , wrong words, accuracy and the most important thing in typing WPM.

The user signup and login functionality was successfully implemented, allowing users to create accounts and securely log in to the platform. Over the project's duration, a notable number of users registered, demonstrating the system's effectiveness in attracting and engaging users. User feedback and experience metrics related to the signup and login process were positive, with many users finding the system user-friendly and secure. Regarding the game interface system, we observed a user-friendly process. Interactive and creativity through the platform, indicating its practicality and accessibility. User feedback and satisfaction ratings regarding the dynamic display of the games largely positive, with users commending the ease of use and convenience. The players database was well-structured and efficiently organized. It stored a substantial amount of data, including user information ,login details(username and password), WPM ,accuracy ,wrong words and total words, contributing to the effective management of the data of the game. Usability testing and user feedback played a crucial role in enhancing the platform's overall



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user experience. Based on user input, several improvements were made to streamline processes and ensure a smoother and more intuitive user journey. The project had a positive impact on typing speed of the users , as evidenced by the increased number of users accessing typing practice through the platform. Several case studies and success stories were documented, illustrating instances where the platform played a pivotal role in keeping a track of the improvement of the typing speed of the users.

The successful implementation of the project's components has significantly improved the typing speed of the users and kept a track of the improvement of the typing speed of the users. First, the user registration and login functionality attracted and retained users, with high registration numbers. User feedback emphasized the importance of a secure and user-friendly registration system. The appointment booking system streamlined healthcare access, with a substantial number of appointments booked. Positive user feedback and satisfaction ratings highlighted its convenience. Efficient organization of the appointment database maintained data integrity and streamlined operations, handling a significant amount of information. User feedback and usability testing enhanced the user experience, showcasing the project's adaptability to user needs. Increased user access improved healthcare accessibility, supported by case studies illustrating better health outcomes. Enhancements in patient experiences and user-friendly interfaces positively impacted interactions and usability. Efficient functionality, reflected in response times and performance metrics, ensured the system's reliability. In conclusion, these achievements signify the project's potential to contribute to more efficient, accessible, and patient-centric healthcare management. Ongoing maintenance and updates will be vital for its continued relevance in the healthcare landscape.



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## **Chapter 6**

# **Conclusion and Future Scope**

### **6.1 Conclusion**

The "Typing Accelerator" project represents an innovative and dynamic response to the ever-increasing need for proficient typing skills in today's digital age. Our journey in developing this platform has been driven by a vision to make typing practice engaging, enjoyable, and productive. By infusing gamification into the learning process, we have created an environment where users challenge themselves to accelerate their virtual cars by improving their typing speed and accuracy.

This approach not only fosters self-improvement but also harnesses the competitive spirit within us. As we reflect on the project's journey, it is evident that "Typing Accelerator" holds significant potential in equipping individuals of all ages and backgrounds with a valuable skill set for enhanced digital literacy. The platform's user-centric design, interactive features, and commitment to efficient typing have positioned it as a valuable resource for learners. Believing that this project stands as a testament to the importance of combining education with fun and challenges, making learning not just a necessity but a delightful endeavor. With room for future growth and expansion, "Typing Accelerator" is poised to continue playing a pivotal role in the ongoing discourse of digital literacy and education. We remain excited about its potential and look forward to the contributions it can make in the ever-evolving digital landscape.

It's apparent that "Typing Accelerator" embodies the convergence of education and entertainment, making the journey of mastering typing skills not only productive but also enjoyable. It has emerged as a valuable tool, equipping users of all backgrounds and ages with the crucial skill of fast and accurate typing. The project's user-centric approach, intuitive interface, and commitment to efficiency have established it as a worthwhile resource for learners. Moreover, its potential for future expansion and improvement in response to evolving technology and educational needs is promising. "Typing Accelerator" is not just an embodiment of effective digital literacy enhancement, but also a testament to the incredible possibilities that arise when learning is infused with fun and competition. The journey continues, and we are excited about the ongoing contributions this project can make to digital literacy and education.



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### 6.2 Future Work

The "Typing Accelerator" project has the potential to continually evolve and adapt to the ever-changing demands and opportunities in the realm of typing proficiency, making it a valuable resource for individuals seeking to enhance their typing skills in the digital age.

- 1. Advanced Typing Challenges:** Introduce a variety of typing challenges, including transcribing audio, catering to a broader audience with diverse typing needs.
- 2. Multilingual Support:** Expand the platform to include typing exercises in multiple languages, making it accessible to users worldwide.
- 3. Social Integration:** Allow users to challenge friends, share achievements, and participate in typing competitions, fostering a sense of community and friendly competition.
- 4. Progress Analytics:** Develop a comprehensive analytics system to provide users with detailed insights into their typing progress, helping them set and achieve goals effectively.
- 5. Mobile Application:** Create a mobile app for "Type Accelerator," enabling users to practice on the go and access their typing challenges from any device.
- 6. Educational Partnerships:** Collaborate with educational institutions to incorporate "Type Accelerator" as a standard tool for improving students' digital literacy.
- 7. VR/AR Typing:** Explore the integration of virtual reality (VR) and augmented reality (AR) technology to offer users an immersive typing experience.
- 8. Professional Certifications:** Provide certification options for users to validate their typing proficiency, which can be beneficial for job seekers and employers.
- 9. Data Security:** Enhance data security measures to ensure user information remains safe and private.



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