Typing Wizard

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For

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1. Problem Definition and Scope

1. Problem Description

The world is moving forward with rapid improvements in the latest technology. The importance of computer skills is at an all-time high, one skill in particular has become an ever-increasing attribute from staff or a prospective candidate - Typing.

Typing used to be a skill taught to people who wished to join the administration industry, now not only is it a must within this industry but every other industry can benefit from the skill.

The productivity of a business depends on how things are done faster. To complete your work faster it is important to develop typing skills. Typing helps you to work comfortably on the computer, it aids in communicating with colleagues and customers, creating documents, and finding new information.

2. Study of Existing System

There are a lot of existing touch-typing guides and practice applications available online.

But their teaching techniques are quite ineffective. The unstructured way of their teaching leads to confusion which in turn makes the user uninterested and they revert back to their original way of typing. It ends up

discouraging them and prevents them from getting better at typing.

Existing systems are available in both free and paid formats. The paid versions are limited in their content unless you make the payment and hence not affordable. On the other hand, free versions are available for free but are full of ads which degrades the performance and is irritating for the user. They do give a report about the speed and accuracy of a user. However, a detailed analysis about the user is preferred.

Also, the joy of learning typing is something which is lost, one could make learning enjoyable by including fun elements like games, existing systems do not provide such elements.

3. Drawbacks of Existing System

Existing systems are time consuming, confusing and not productive because they are filled with ads, they have unstructured way of teaching which does not take into account existing level of typing skills that the user has. These systems are not easily accessible and tiresome to a great extent. Lot of these are available in the form of computer applications which require complex installation, heavy space and reduces the performance of the application.

They do not give a detailed analytical report about the progress of a user. Users find it difficult to find insights

about their progress based on the numerical progress report given by the existing systems.

4. Scope of Proposed System

The main objectives of 'Typing Wizard' are:

1. To teach typing in a standard and structured manner, wherein a user can take any lesson depending on the level of his/her typing skills.

2. Give detailed analysis about the progress of a user by displaying graphs.

3. Provide methods for the user to spend sufficient time practicing typing skills.

4. Provide tests and challenges that enhance overall learning for the user.

5. Provide an element that makes learning more interesting.

2. Feasibility Study

1. Technical Feasibility

Typing Wizard application is a web-based application so it only requires a web browser to run on. Typing Wizard is build using the following technologies:

Front End: HTML, CSS, JavaScript

Back End: PHP

Database: PostgreSQL

Any modern browser with CSS flex support will be able to run the application smoothly. On the backend we use PHP to generate dynamic pages depending on the user input. Also Typing Wizard has a server-side authentication in which we use PHP to login the user. Login session is stored using cookies.

PostgreSQL is used to store Course data and Typing Challenge data. Also, it stores user generated data from Course and Typing Test. PostgreSQL database provides the data plotted on Statistics page.

JavaScript is used to track and generate user typing reports in Course, Typing Test and Typing Challenges. AJAX is used to asynchronously send and receive data from and to the database. Canvas is used to draw and scale the graphs on Statistics page.

From these it's clear that the project is technically feasible.

2. Economical Feasibility

Being a web application Typing Wizard will have an associated hosting and internet cost. Since the application is light weight doesn't have any multimedia data transfer the associated bandwidth for the operation of this application is quite low.

The system will follow freeware software standards no cost will be charged to potential users.

From these it's quite clear that Typing Wizard is economically feasible.

3. Operational Feasibility

1. This project is platform independent and end user can use this on any operating system. Only Firefox browser is required.

2. Navigation bar enables user to easily navigate through the site.

3. End user has zero extra installation cost.

4. The main stakeholder of this this project is a learner who wishes to learn touch typing.

5. Typing Wizard is user friendly being graphically based system and it is easy to use even for a naïve user.

3. Gathering Data Requirements and Functional Requirements

1. Identify End Users of the System

As typing is an important skill which is in demand across various domains, this application can be used by any individual who wishes to enhance or learn typing skills.

2. Input Data to the System

1. User Registration with username and password.

2. At the time of registration, user has to select a forgot password question and answer which will be used in future to recover the password.

3. User can pursue learning from the provided course and the system will track their progress.

4. User can take up Typing Tests and Challenges. Results of typing tests are stored in database.

5. User can play Typing Games for recreation.

3. Output Information from the System

1. User's Top Speed(wpm)

2. User's Average Error(wpm)

3. Total Samples of Typing Test taken

4. Lessons completed from Course

5. Games can be played by the user which will help him improve his typing.

6. Display detailed evaluation for the user in the form of graphs.

7. Graph 1 – WPM vs Test Number

8. Graph 2 – Error vs Test Number

4. Functional or Processing Requirements of the system

1. Users will have to provide login details. That is password and username as per user's choice.

2. If a user is using the System for the first time, he/she will have to register to the System.

3. User can recover password if forgotten using forgot password question.

4. User can take up course that builds up their basics of touch typing.

5. Provide tests where the user can practice. User's typing speed, accuracy will be displayed in the form of graphs using the test scores.

6. Users can also take typing challenges where he/she can practice..

7. The gaming module is where users can learn while playing. Game scores will be displayed and difficulty increases as the level increases.

4. Entity Relationship Modeling

1. Identify the entities and the attributes

1) Entity name: users

Attributes: username, password, forgotQuestionNo, answer.

2) Entity name: forgotPassQuestion

Attributes: qno, question

3) Entity name: lessons

Attributes: lessonId, mockPara, lessonName

4) Entity name: typingChallenges

Attributes: challengeTitle, typingChallengeId, para

5) Entity name: userStats

Attributes: username, topSpeed, averageSpeed, averageError, totalSamples

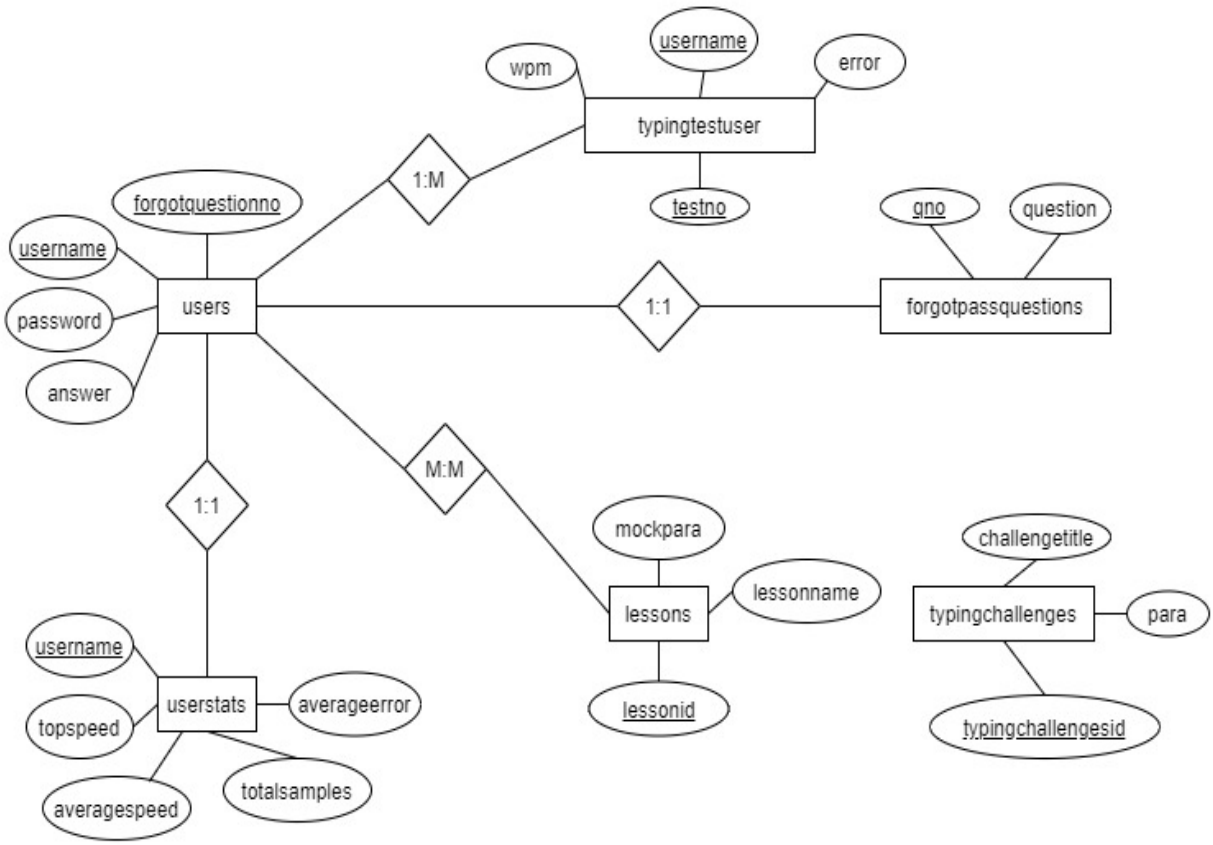
6) Entity name: lessonsCompleted

Attributes: username, lessonId

7) Entity name: typingTestUser

Attributes: testno, username, wpm, error

2. Entity Relationship Diagram



3. Designing the Normalized Database

SNo.	Table1	Relationship	Table2
1.	user	One to One	forgotPassQuestions
2.	user	Many to Many	lessons
3.	user	One to One	userStats
4.	user	One to Many	typingTestUser

TableName: forgotPassQuestions

SNo.	Field Name	Field Type	Description
1.	qno	INT	Identify each question uniquely
2.	question	TEXT	The forgot question which will be asked if user forgets password

TableName: users

SNo.	Field Name	Field Type	Description
1.	username	VARCHAR	Username
2.	password	VARCHAR	Password
3.	answer	TEXT	Answer to the question for password recovery
4.	forgotquestionNo	INT	Foreign Key from forgotPassQuestions Table

TableName: lessons

SNo.	Field Name	Field Type	Description
1.	lessonId	VARCHAR	Unique for each lesson and sub lesson
2.	mockPara	TEXT	Practice paragraph
3.	lessonName	VARCHAR	Lesson's Name

TableName: typingChallenges

SNo.	Field Name	Field Type	Description
1.	typingChallengeId	FLOAT	Challenge Id
2.	para	TEXT	Paragraph for the Challenge
3.	challengeTitle	TEXT	Title for the Challenge

TableName: typingTestUser

SNo.	Field Name	Field Type	Description
1.	testNo	INT	Test Number
2.	username	VARCHAR	Username
3.	wpm	FLOAT	Words Per Minute
4.	error	INT	Errors

TableName: userStats

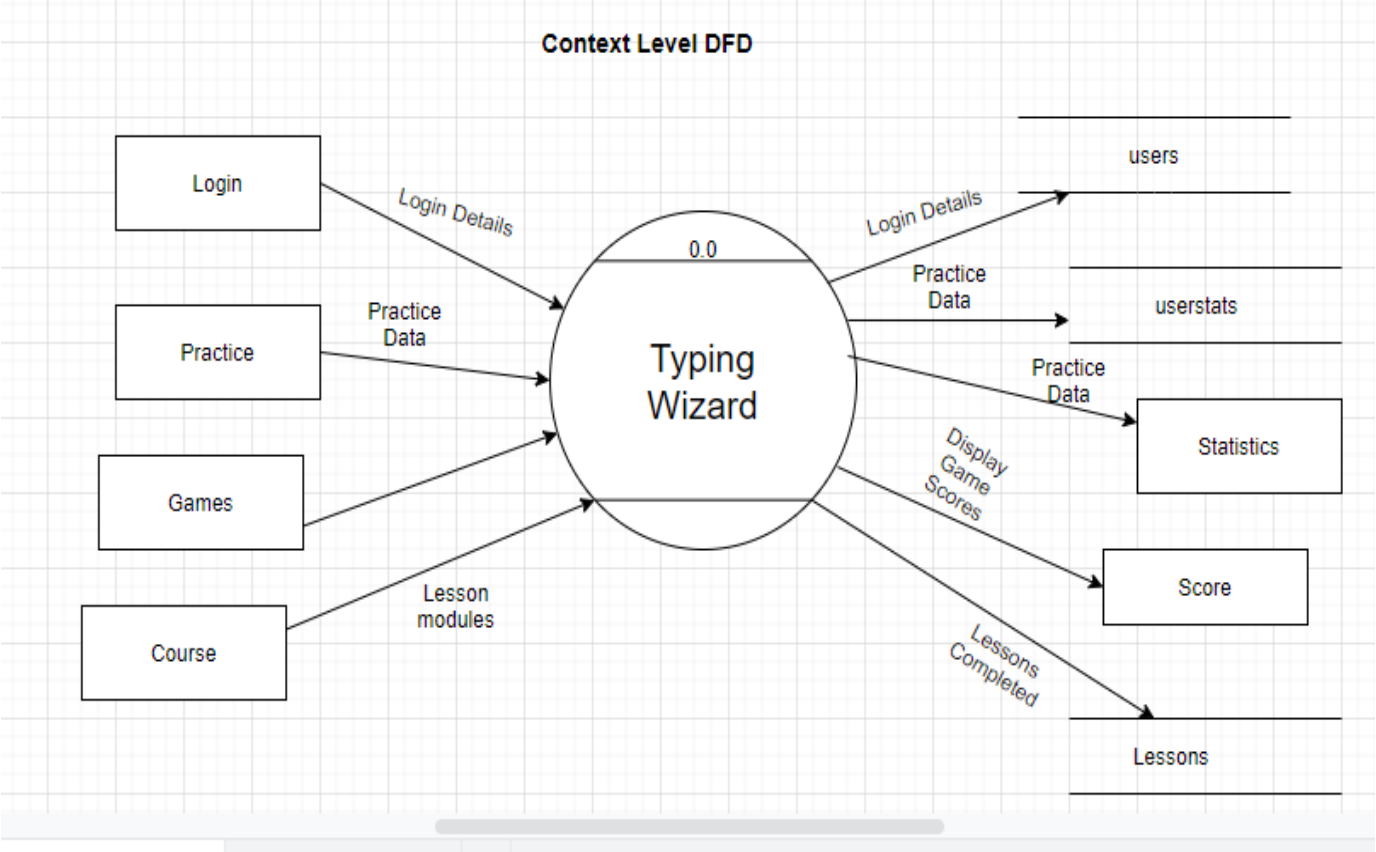
SNo.	Field Name	Field Type	Description
1.	username	VARCHAR	Foreign Key from User's table
2.	topSpeed	FLOAT	User's top speed
3.	averageSpeed	FLOAT	Average typing speed
4.	totalSamples	INT	Total Samples Solved by the user
5.	averageError	FLOAT	Average Error

TableName: lessonsCompleted

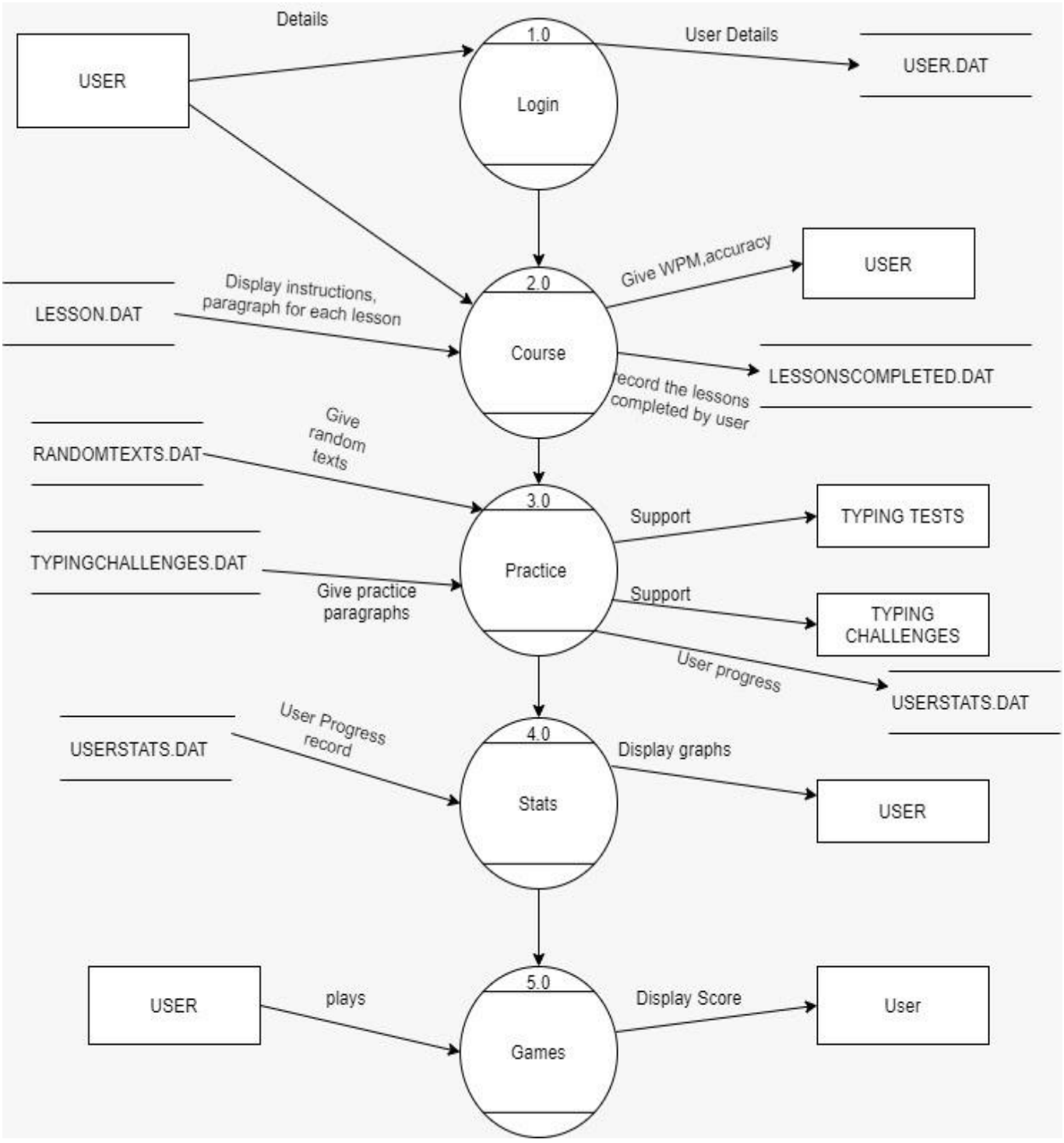
SNo.	Field Name	Field Type	Description
1.	username	VARCHAR	Username Corresponding to Lesson Completed
2.	lessonId	VARCHAR	Last Lesson Id completed by the user. Foreign Key from lessons table

5. Data Flow Diagram

1. Context Level DFD



2. First Level DFD



3. Process Explanation

1. Process Name: Login

   Input data to process: Valid Credentials

   Output data from the process: User Logged in

   Data store required: user.dat

   Description of the process: Provide SignIn and SignUp options carry relevant functions for the same.

2. Process Name: Course

   Input data to process: Various texts for practice

   Output data from the process: WPM and error reports

   Data store required: lesson.dat

   Description of the process: Show various paragraphs for the user to type, as the user is typing, record WPM and error.

3. Process Name: Practice

   Input data to process: Practice paragraphs

   Output data from the process: Typing speed in WPM, errors and time taken

   Data store required: userStats.dat, typingTestUser.dat

Description of the process: Provides typing challenge to the user and store the user statistics

4. Process Name: Statistics

Input data to process: User statistics from the database UserStats.dat, TypingTestUser.dat

Output data from the process: User's performance in graphical form.

Graph 1 : wpm vs test no

Graph 2 : errors vs test no

Data store required: No

Description of the process: Calculates statistics like typing speed in WPM and errors made during typing and display it in graphical form

5. Process Name: Games

Input data to process: Game played by the user

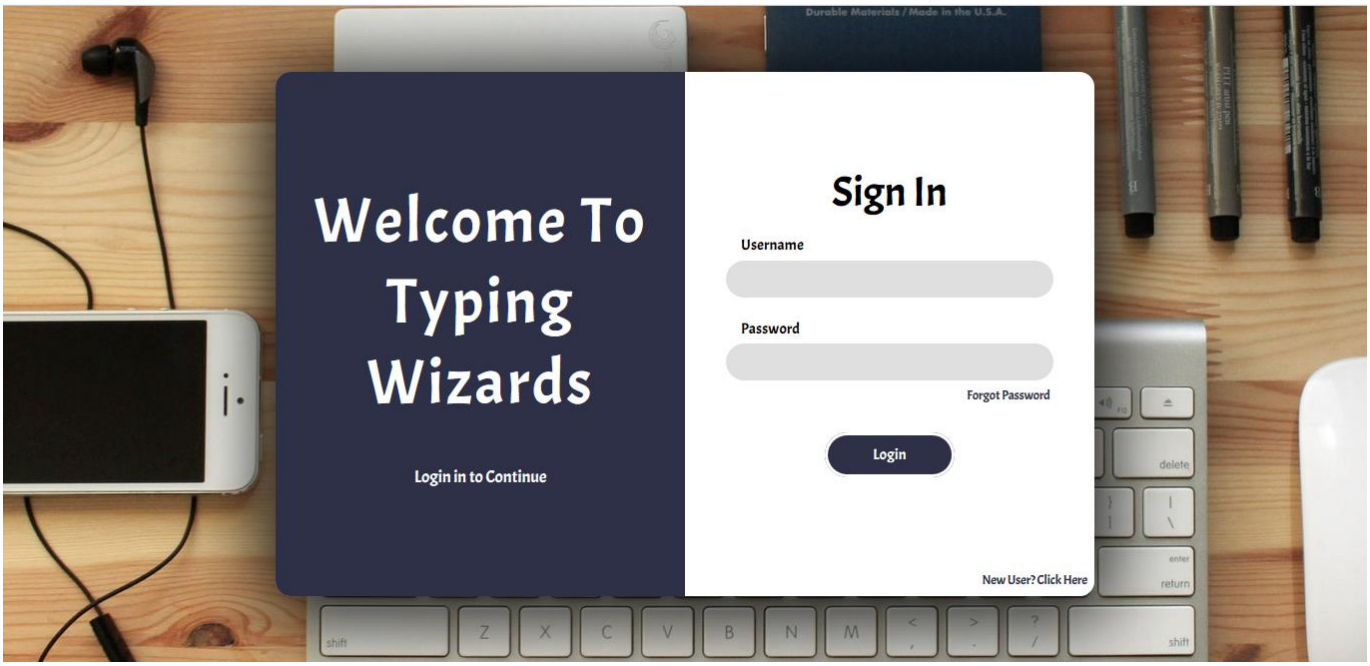
Output data from the process: Game Score

Data store required: No

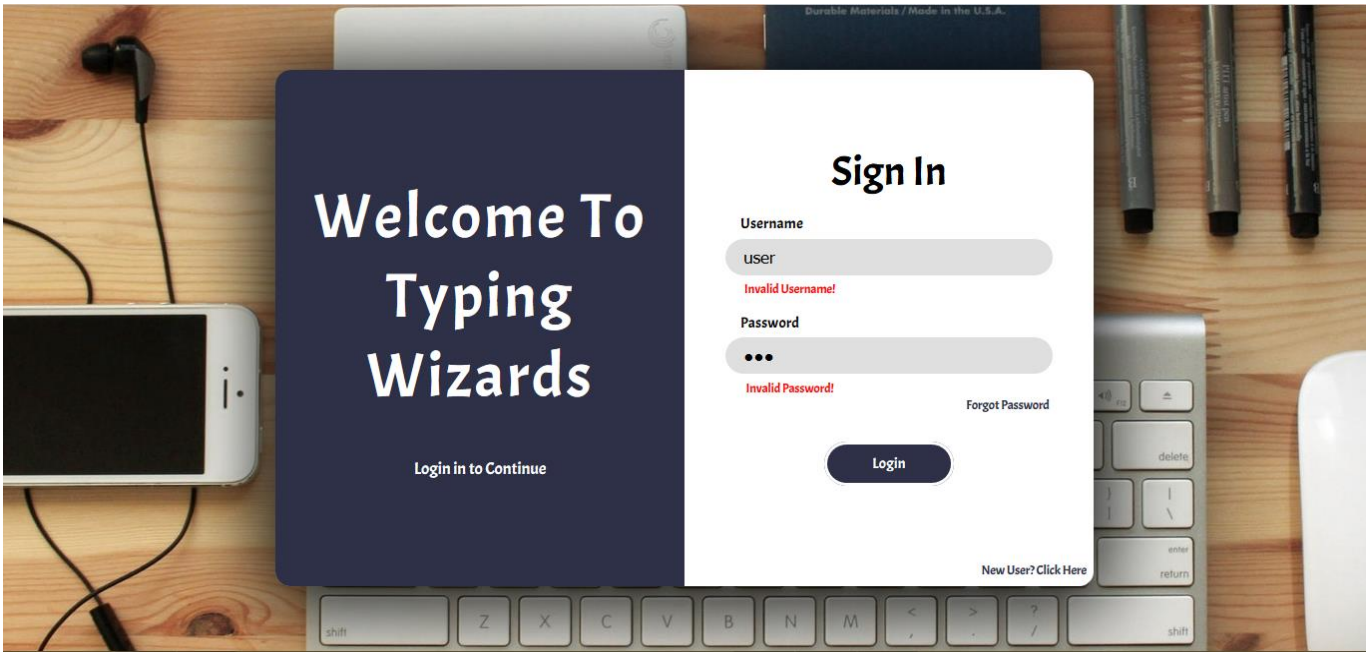
Description of the process: Provide typing related games

6. Input Output Screens

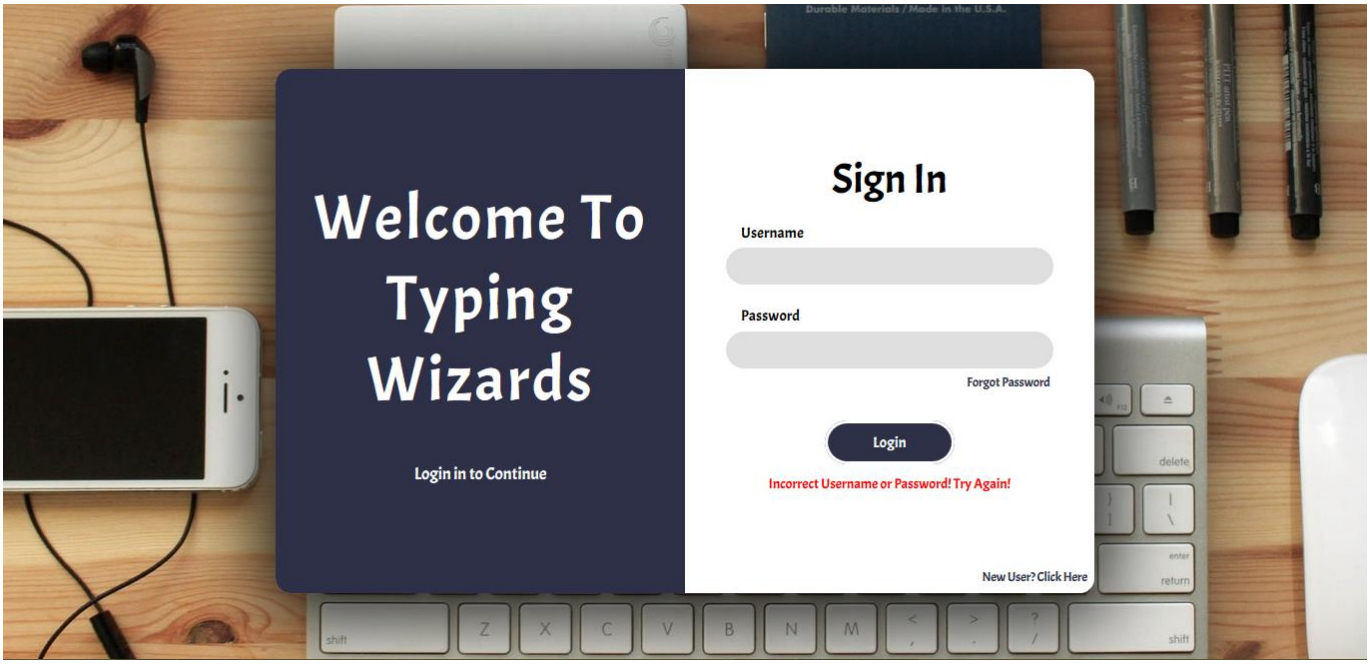
Login Screen



Login Screen

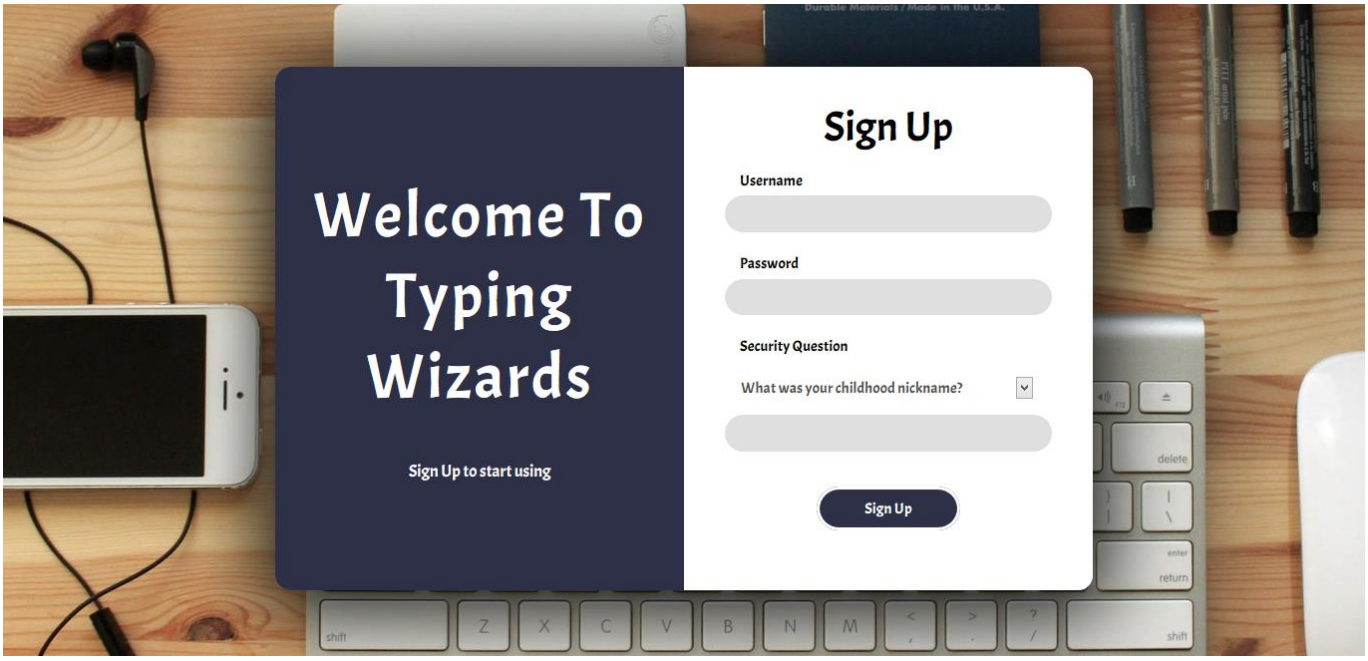


Login Screen with invalid input

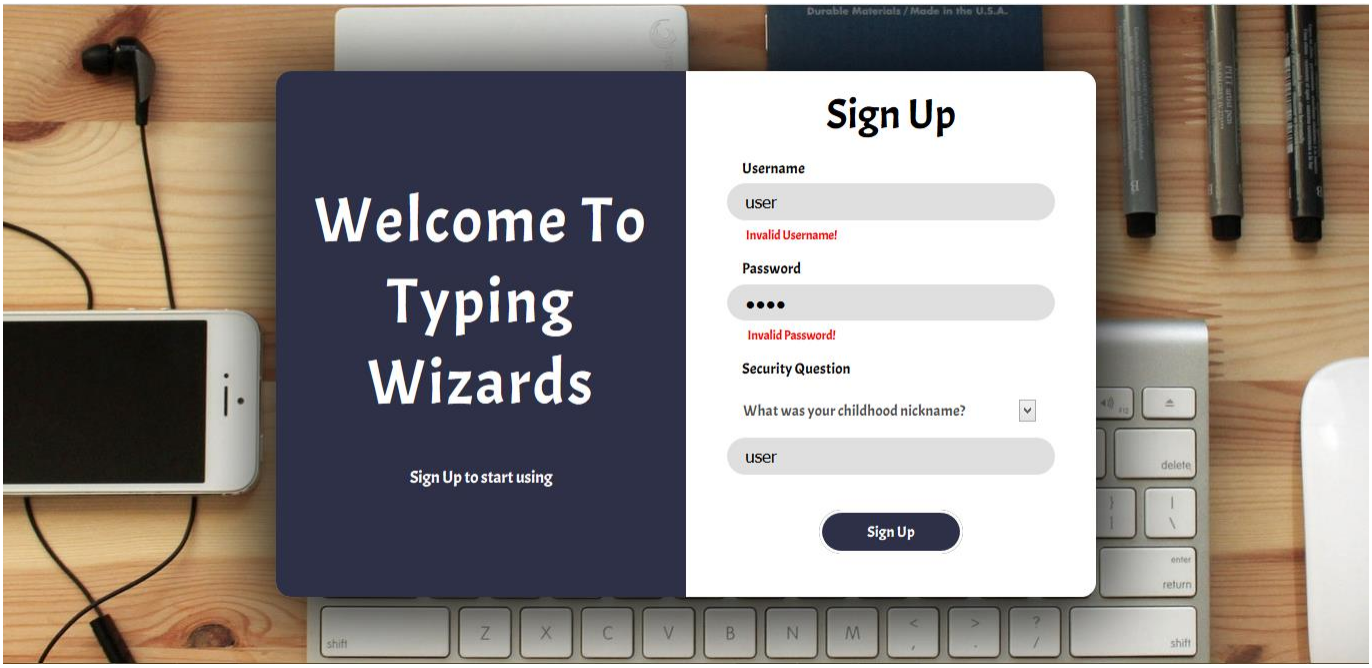


Login Screen with invalid credentials

Signup Screen

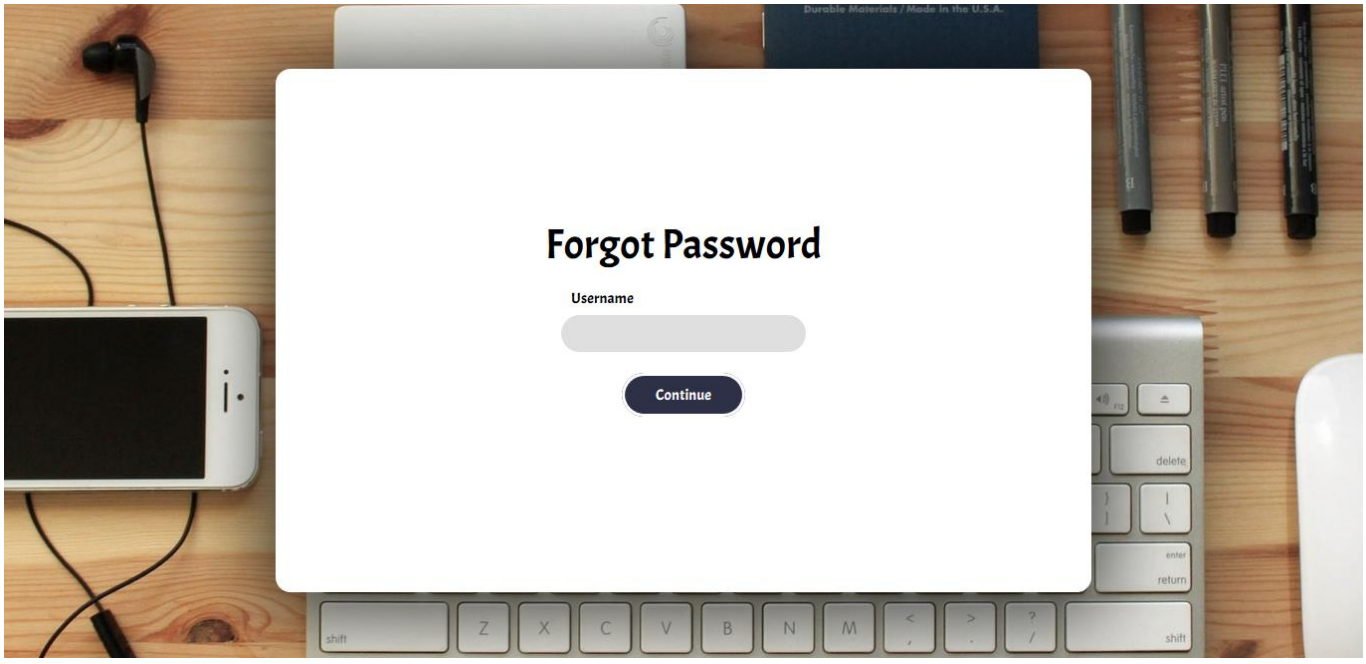


Signup Screen

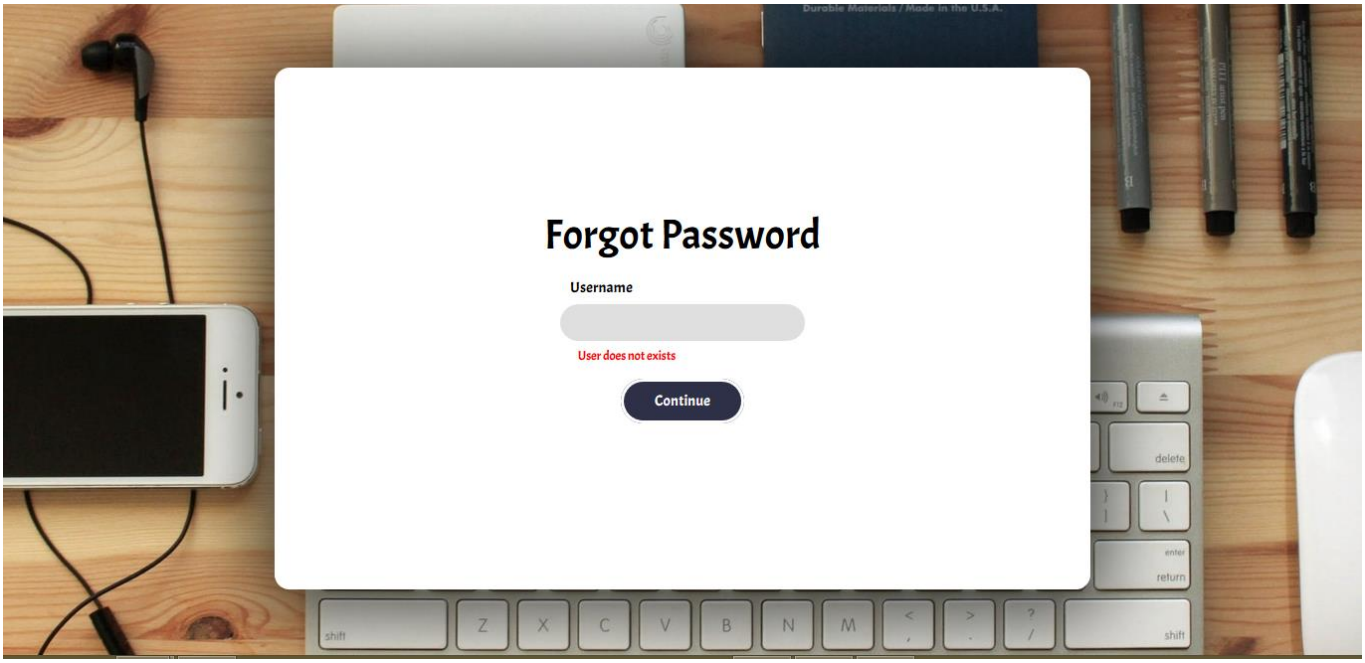


Singup Screen with invalid input

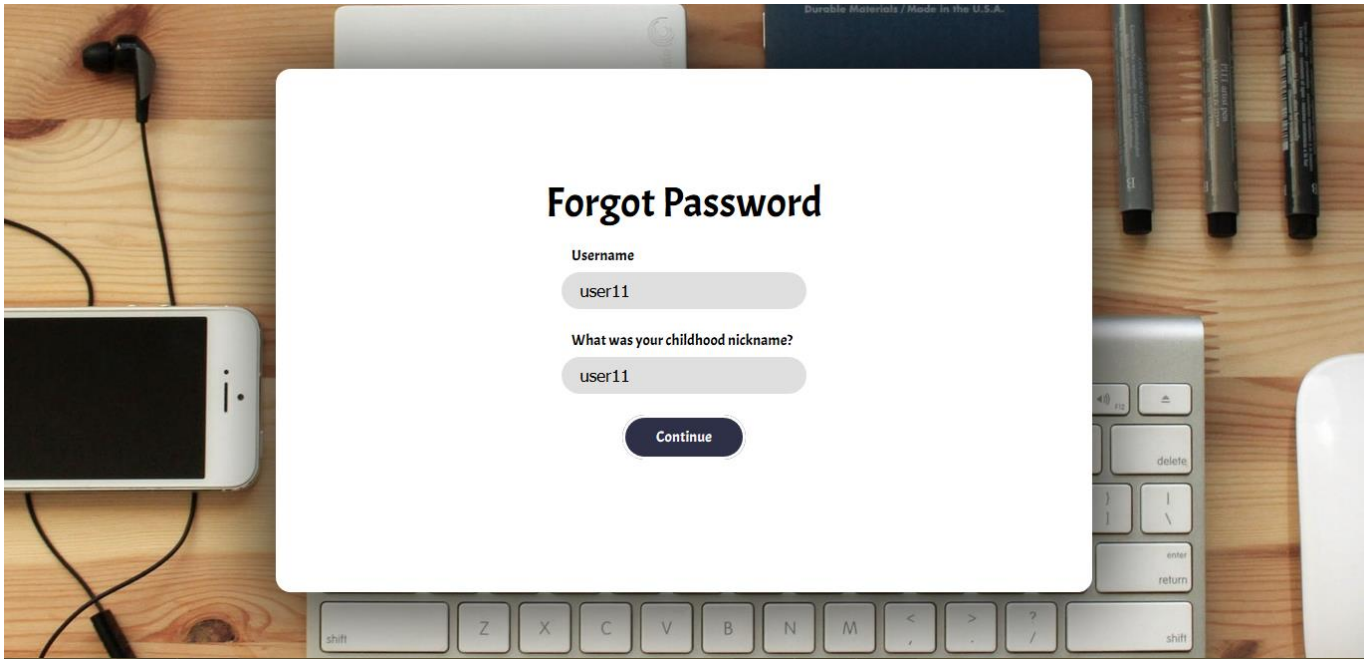
Forgot Password Screen



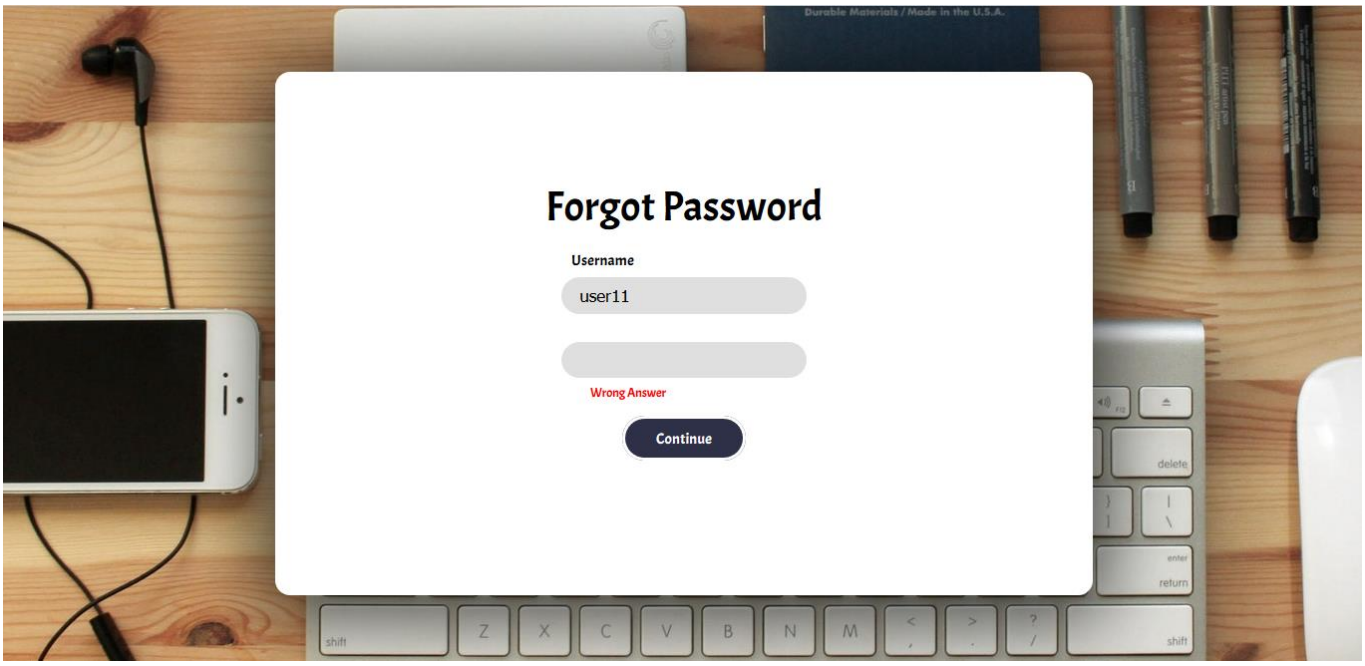
Forgot Password Screen



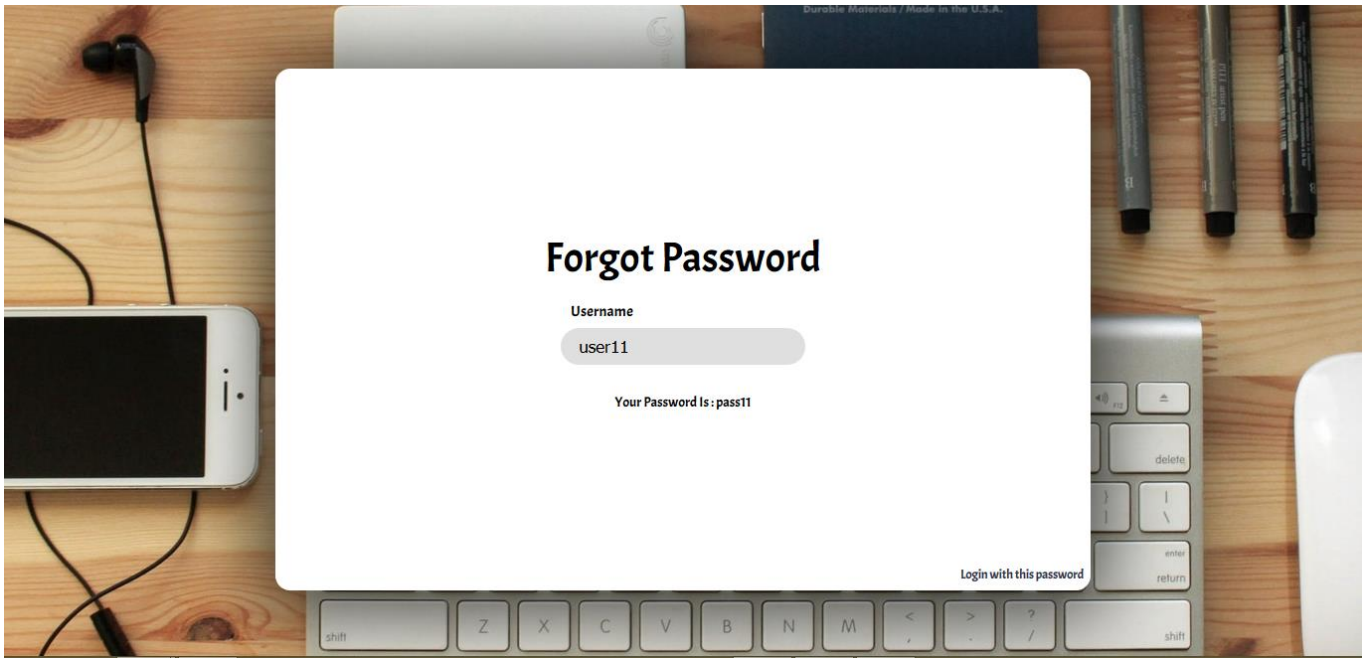
Forgot Password Screen invalid credentials



Forgot Password Screen answering question

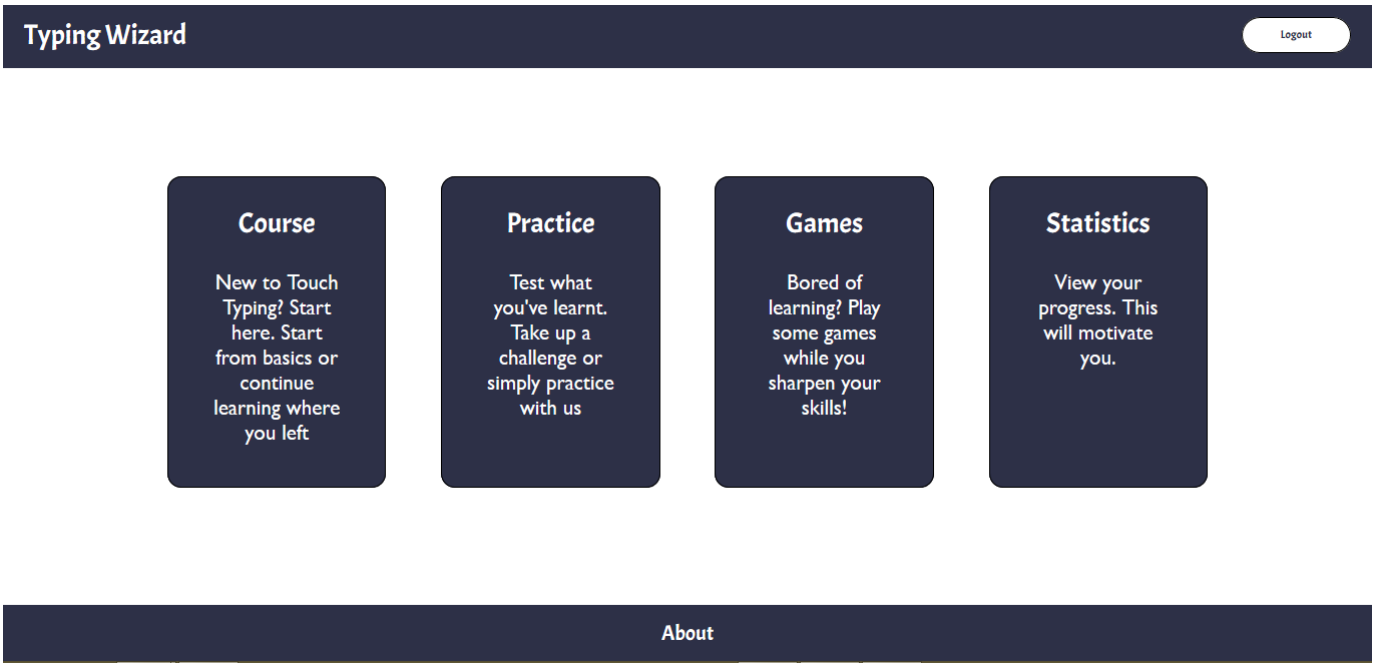


Forgot Password Screen wrong answer



Forgot Password Screen success

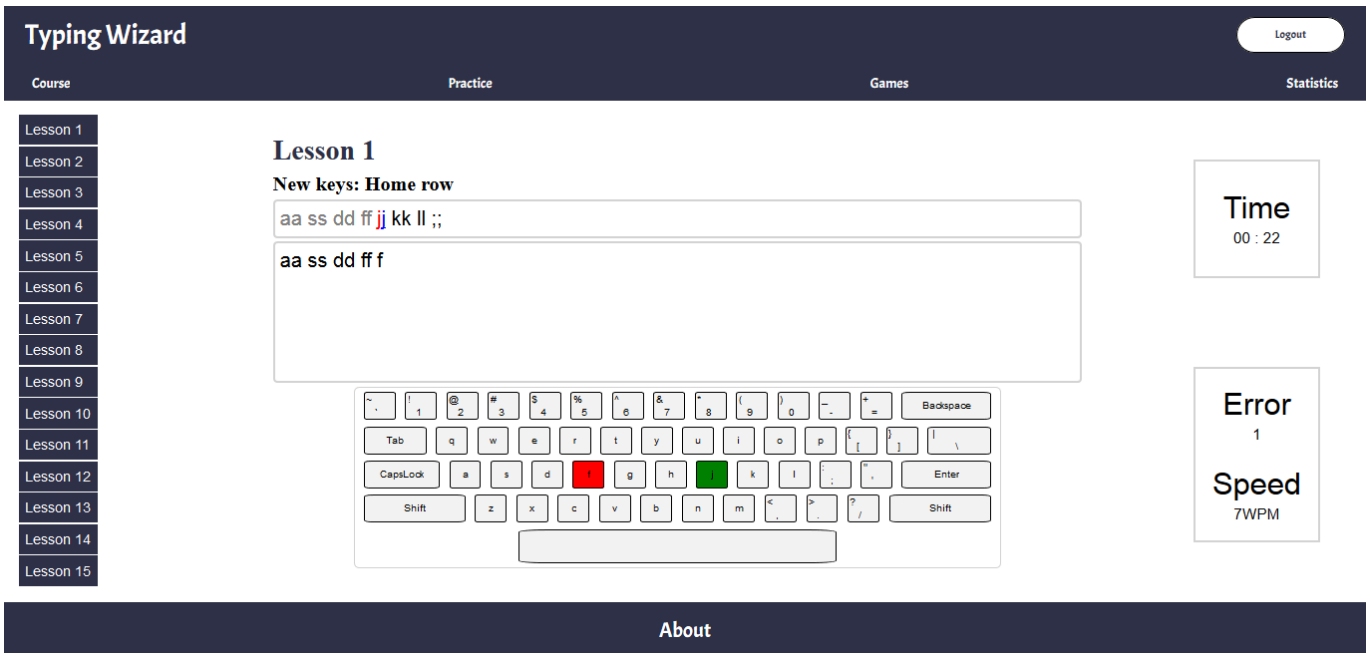
Front Page Screen



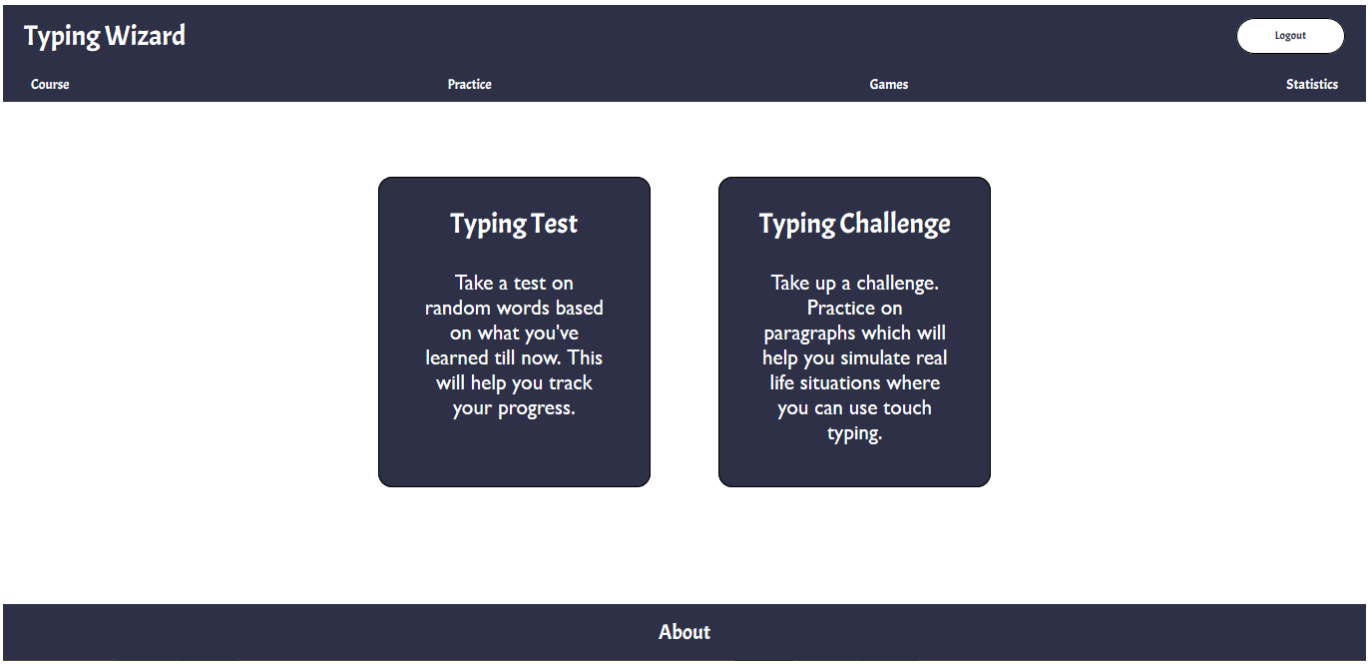
Front Page Screen

Course Page Screen

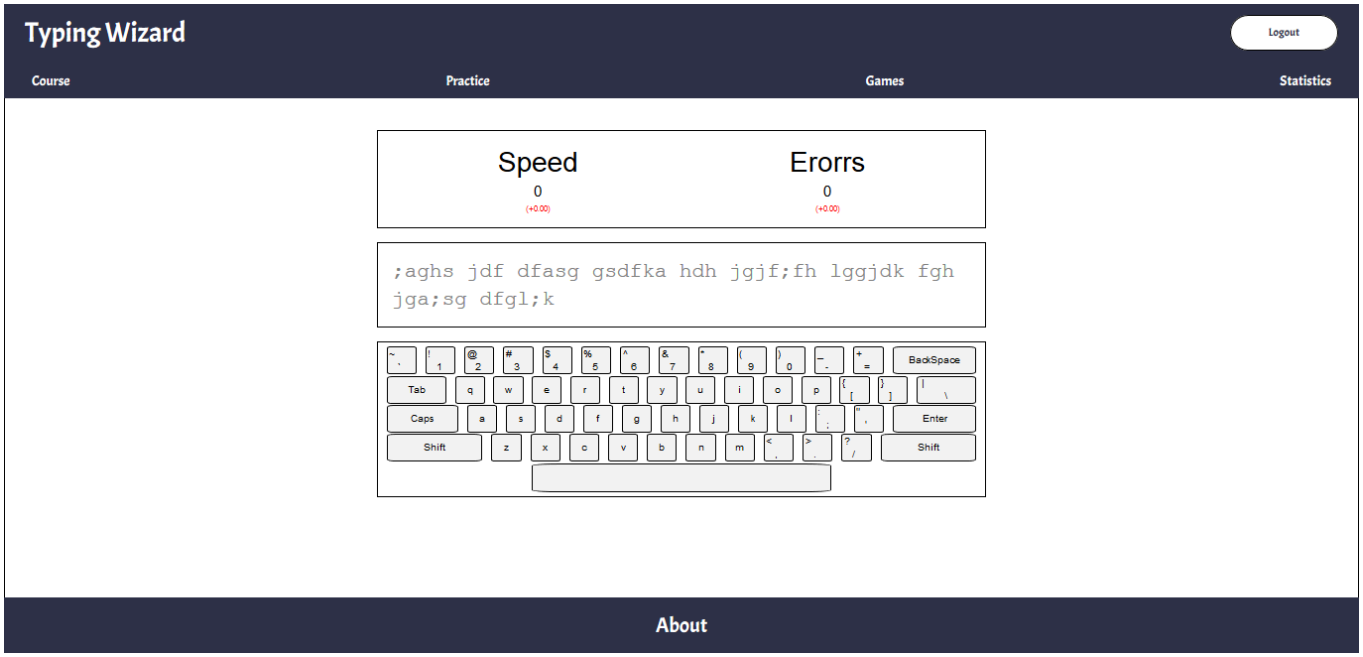

Typing Wizard
Logout
Course
Practice
Games
Statistics
Lesson 1
Lesson 2
Lesson 3
Lesson 4
Lesson 5
Lesson 6
Lesson 7
Lesson 8
Lesson 9
Lesson 10
Lesson 11
Lesson 12
Lesson 13
Lesson 14
Lesson 15
New keys: w and o
New key drill
Key drill 1
Key drill 2
Word drill 1
Word drill 2
Word drill 3
Blind word drill 1
Blind word drill 2
Text drill 1
Text drill 2
Extra key drill
Extra word drill
Lesson 1
New keys: Home row
aa ss dd ff jj kk ll ;;
Time
00 : 00
Error
0
Speed
0 WPM
About


Typing Wizard
Logout
Course
Practice
Games
Statistics
Lesson 1
Lesson 2
Lesson 3
Lesson 4
Lesson 5
Lesson 6
Lesson 7
Lesson 8
Lesson 9
Lesson 10
Lesson 11
Lesson 12
Lesson 13
Lesson 14
Lesson 15
Lesson 1
New keys: Home row
aa ss dd ff jj kk ll ;;
aa ss dd ff f
Time
00 : 22
Error
1
Speed
7WPM
About

Practice Page Screen



Typing Test Screen



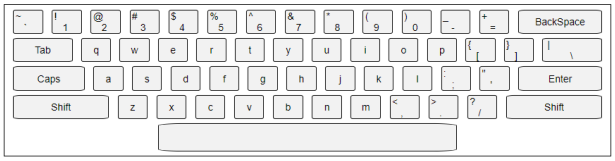
Typing Wizard

Logout

Course | Practice | Games | Statistics

Speed	Erorrs
43.72 (+1.68)	4 (+1.00)

gakl d;adghk d;ah; lghkfd afgl lhdh las ghshlfg l hjs jg;



About

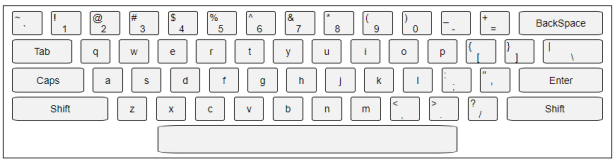
Typing Wizard

Logout

Course | Practice | Games | Statistics

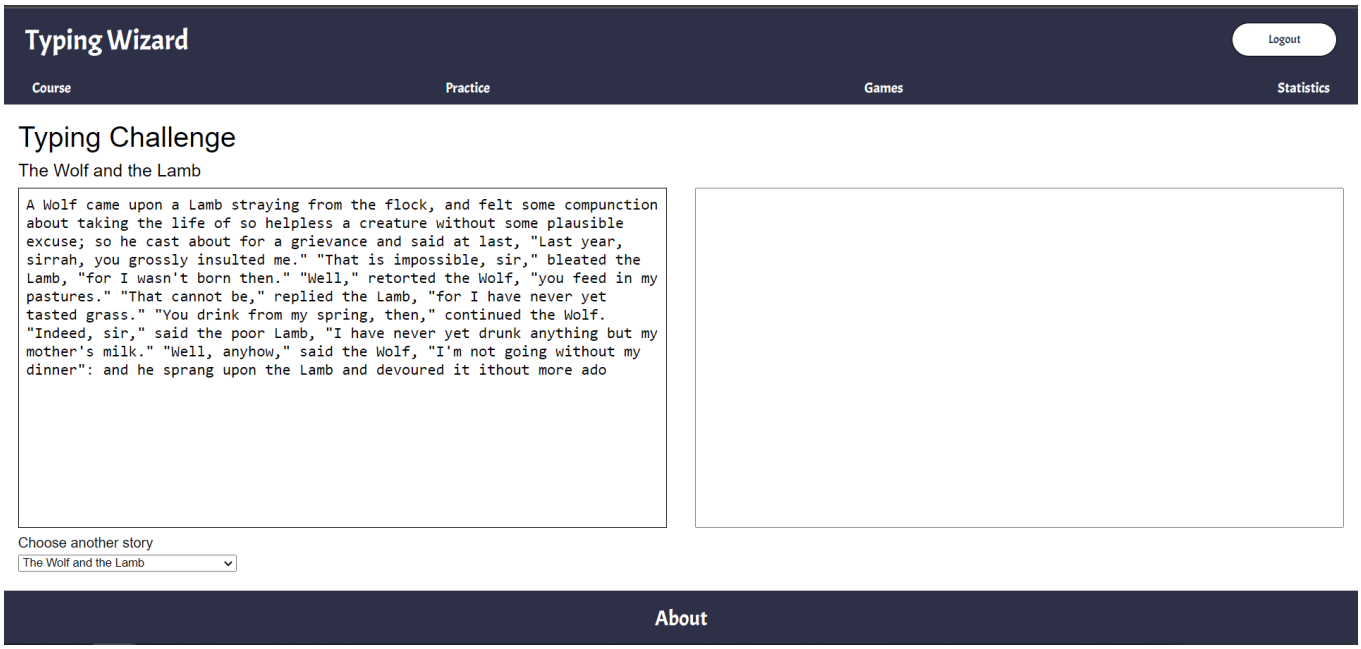
Speed	Erorrs
40.20 (-3.68)	4 (+2.00)

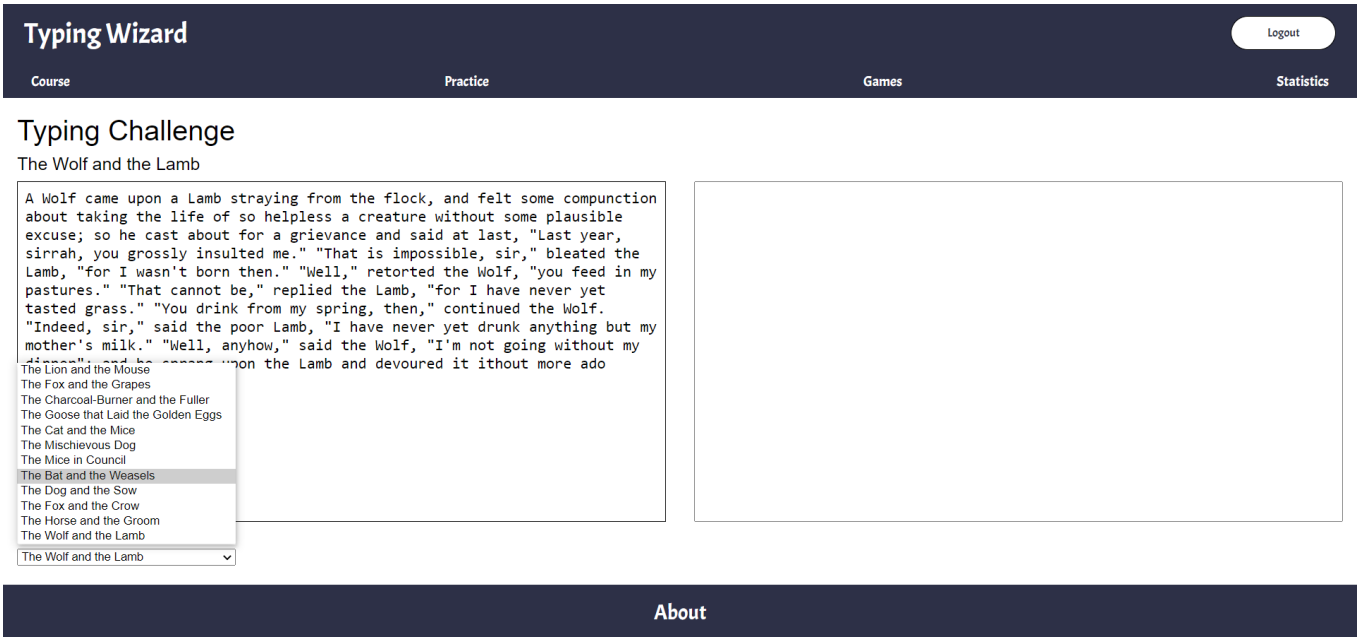
kfdgf afkdl ajsgk dahjag hlsjl ;khakj kdhs s;skgf f agj;d j;lgd



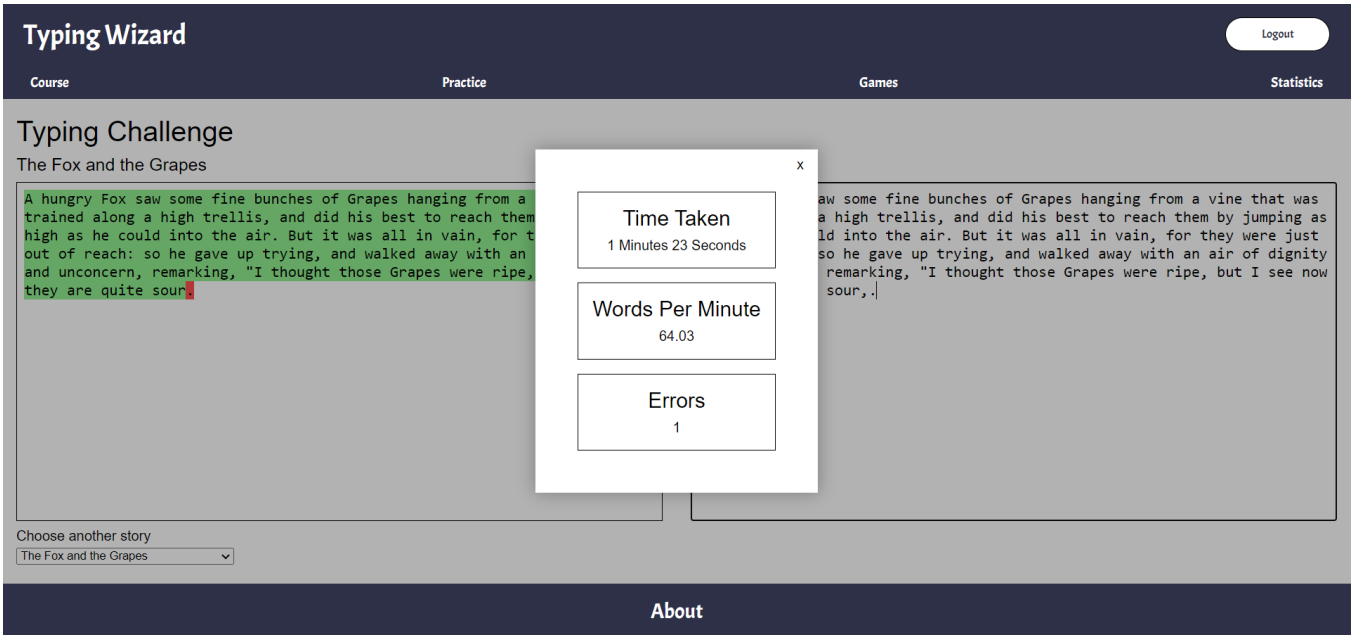
About

Typing Challenge Screen

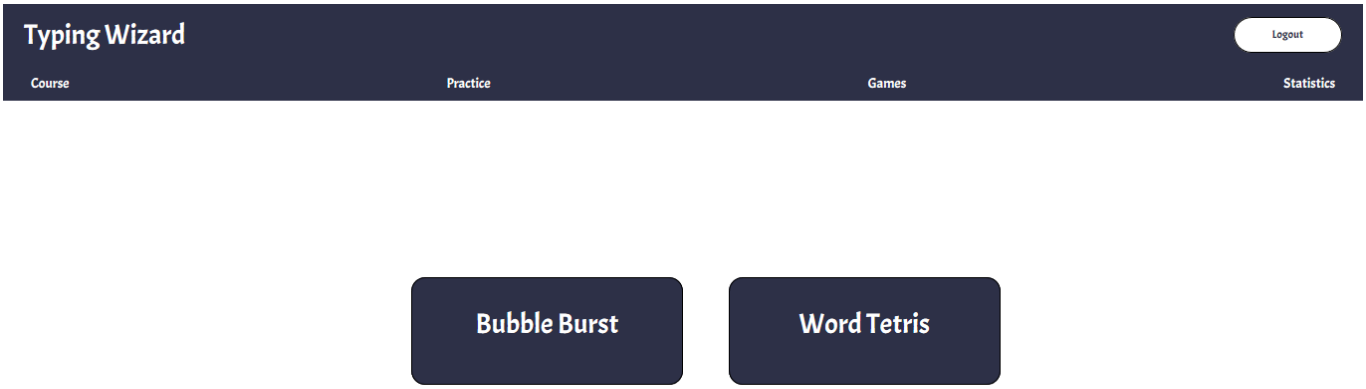




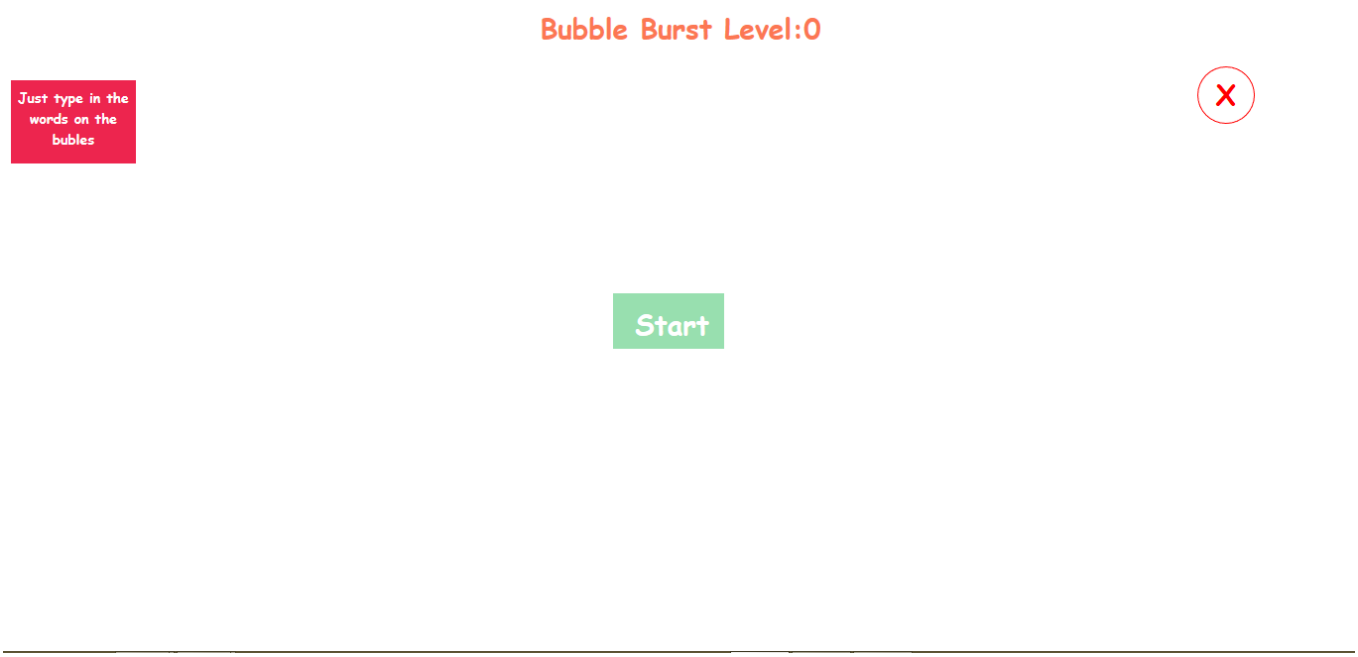

Typing Wizard
Logout
Course
Practice
Games
Statistics
Typing Challenge
The Wolf and the Lamb
A Wolf came upon a Lamb straying from the flock, and felt some compunction about taking the life of so helpless a creature without some plausible excuse; so he cast about for a grievance and said at last, "Last year, sirrah, you grossly insulted me." "That is impossible, sir," bleated the Lamb, "for I wasn't born then." "Well," retorted the Wolf, "you feed in my pastures." "That cannot be," replied the Lamb, "for I have never yet tasted grass." "You drink from my spring, then," continued the Wolf. "Indeed, sir," said the poor Lamb, "I have never yet drunk anything but my mother's milk." "Well, anyhow," said the Wolf, "I'm not going without my dinner": and he sprang upon the Lamb and devoured it ithout more ado
A Wolf came upon a Lamb sgraying from the flock, and felt
Choose another story
The Wolf and the Lamb
About


Typing Wizard
Logout
Course
Practice
Games
Statistics
Typing Challenge
The Fox and the Grapes
A hungry Fox saw some fine bunches of Grapes hanging from a
trained along a high trellis, and did his best to reach them
high as he could into the air. But it was all in vain, for t
out of reach: so he gave up trying, and walked away with an
and unconcern, remarking, "I thought those Grapes were ripe,
they are quite sour.
x
Time Taken
1 Minutes 23 Seconds
Words Per Minute
64.03
Errors
1
aw some fine bunches of Grapes hanging from a vine that was
a high trellis, and did his best to reach them by jumping as
ld into the air. But it was all in vain, for they were just
so he gave up trying, and walked away with an air of dignity
remarking, "I thought those Grapes were ripe, but I see now
sour,.
Choose another story
The Fox and the Grapes
About

Games Screen



Bubble Burst Screen



Bubble Burst Level:1

Just type in the words on the bubles

Score :0

g

d

e

i

h

f

c

j

a

b

k

X

Bubble Burst Level:1

Just type in the words on the bubles

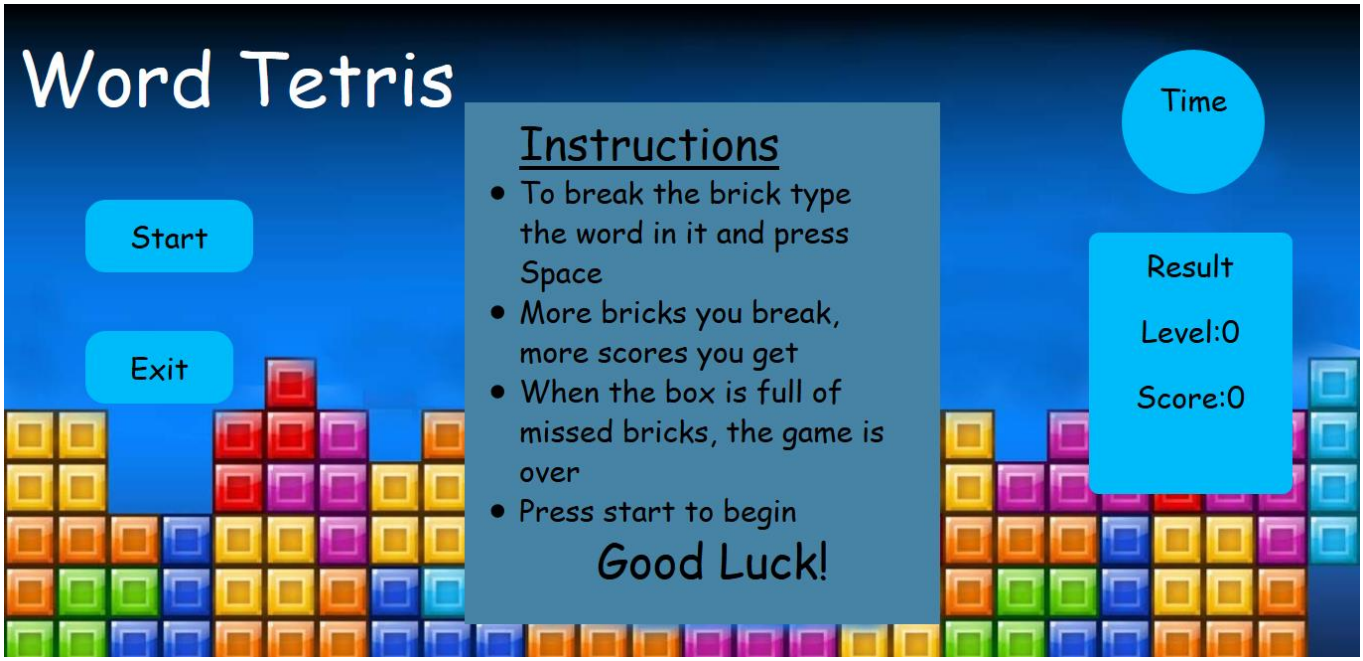
Time Taken: 51.615

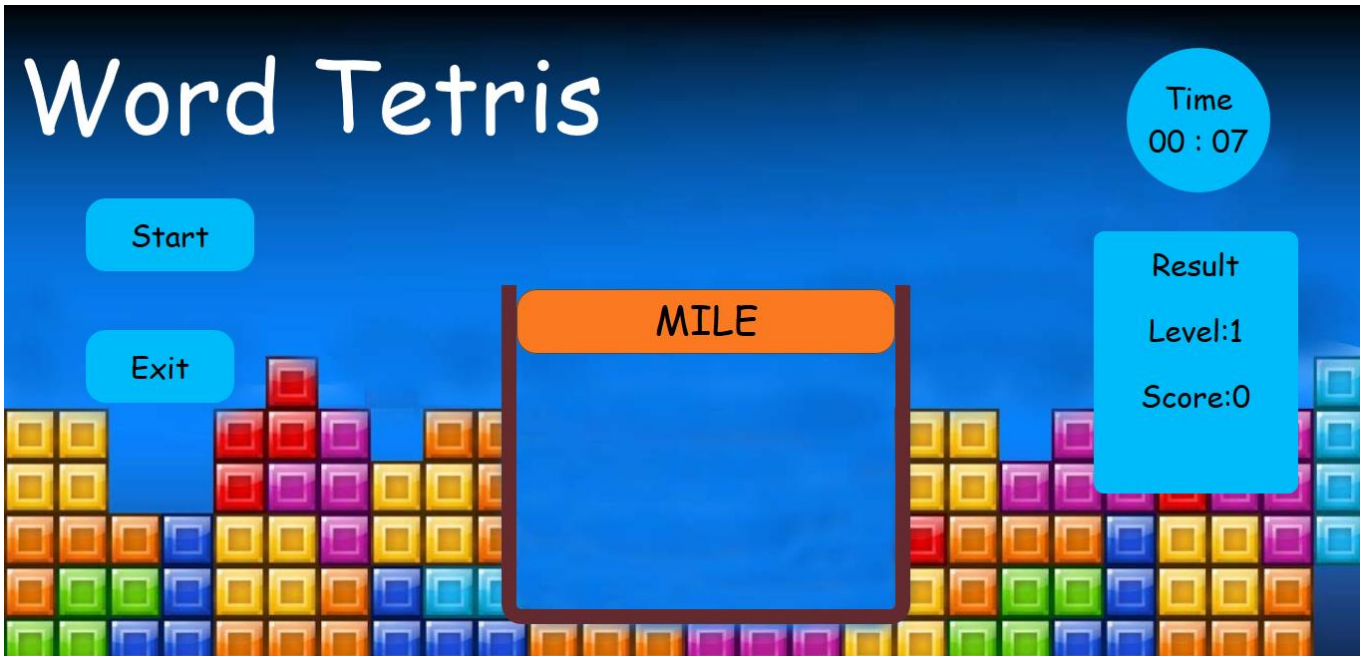
You could'nt clear this round, TRY AGAIN!!!

X

Start

Word Tetris Screen

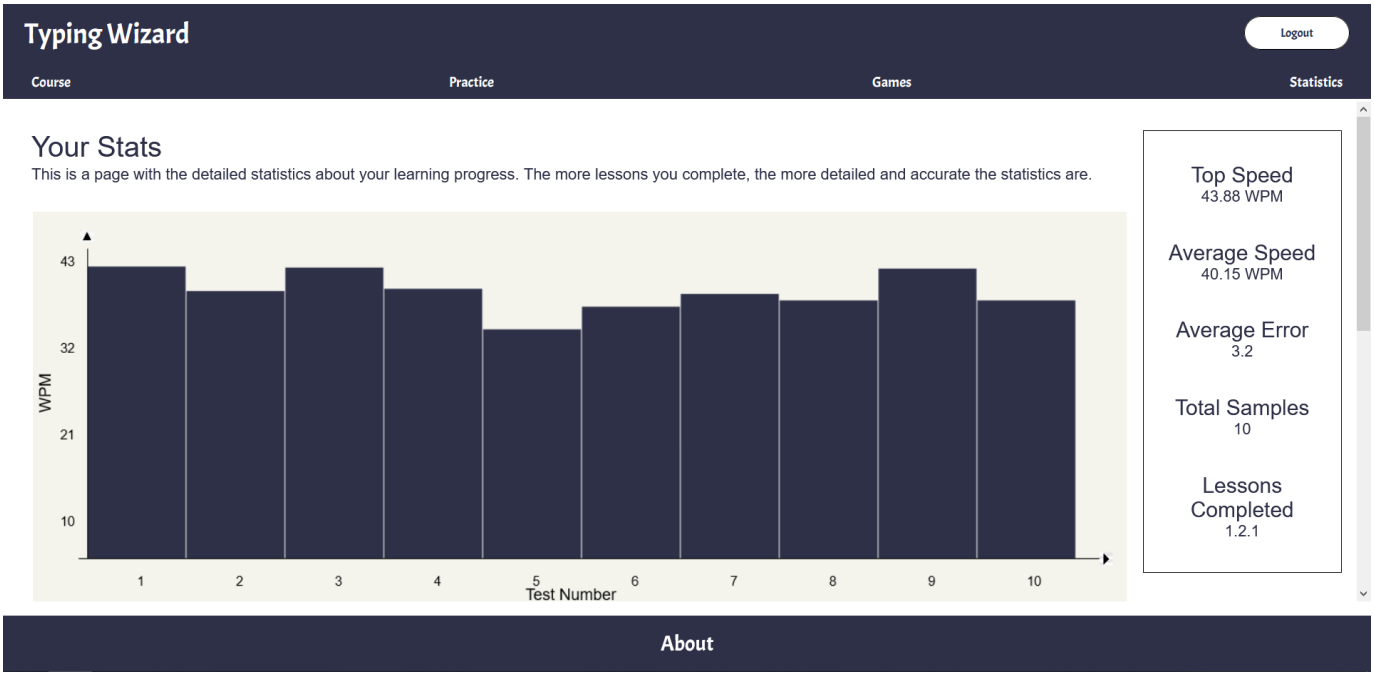




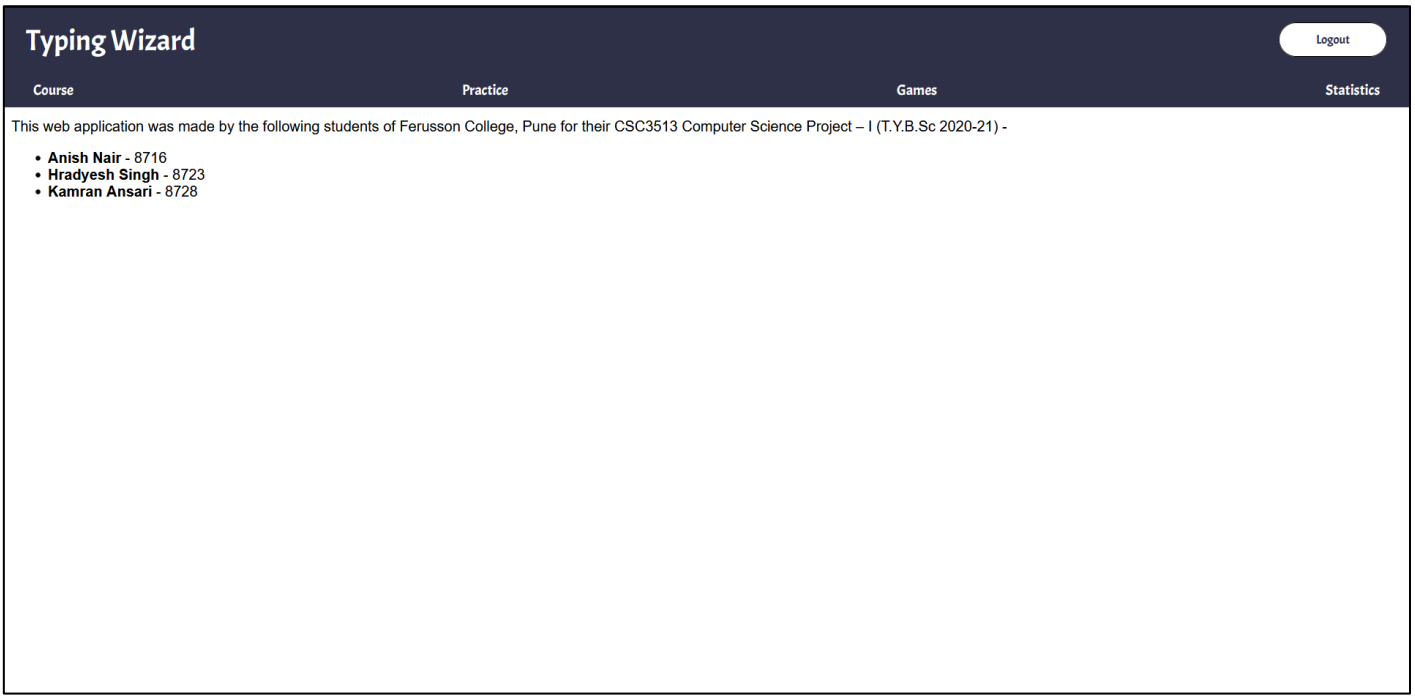

Word Tetris
Time
00 : 36
Start
STRIP
Result
Level:1
Score:0
Exit
GOLDEN
MILE


Word Tetris
Game Over
Press start to play again
Time
01 : 03
Start
Result
Level:1
Score:0
Exit
ROSE
TEMPERATURE
STRIP
GOLDEN
MILE

Statistics Screen



About Screen



Test Case Design

User Registration

Input - Username, Password, Forgot Password Question, Forgot Password Answer

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	Username length not between 6 and 20	User should be notified of the error	User is notified of the error	Pass
2.	Username length is between 6 and 20	User should be able to register with this username	User is able to register with this username	Pass
3.	Password length between 6 and 20	User should be able to register with this password	User is able to register with this username	Pass
4.	Password length not between 6 and 20	User should be notified of the error	User is notified of the error	Pass
5.	Username already exists in the database	User should be requested choose another username	User is requested choose another username	Pass
6.	Valid Username and Password	User's data should be successfully stored in database	User's data is successfully stored in database	Pass

User Login

Input - Username, Password

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	Username length not between 6 and 20	User should be notified of the error	User is notified of the error	Pass
2.	Username length is between 6 and 20	User should be able to register with this username	User is able to register with this username	Pass
3.	Password length between 6 and 20	User should be able to register with this password	User is able to register with this username	Pass
4.	Password length not between 6 and 20	User should be notified of the error	User is notified of the error	Pass
5.	Username does not exist in database	User should be notified and asked to register	User is notified and asked to register	Pass
6.	Username exists but wrong password	User should be notified of the error	User is notified of the error	Pass
7.	Username exists and valid password	User should be logged in successfully	User is logged in successfully	Pass

Forgot Password

Input - Username, Forgot Password Answer

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	Users does not exists in database	User should be notified of the error	User is notified of the error	Pass
2.	User exists	User should be asked the security question	User is asked the security question	Pass
3.	Security Question answer is wrong	User should be notified of the error	User is notified of the error	Pass
4.	Security Question answer is correct	User's password should be shown	User's password is shown	Pass

Course

Input – Lesson data from database, User completes lessons

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	User is not logged in	User should be redirected to login page	User is redirected to login page	Pass
2.	User completes a lesson	Completed lessonid should be stored in the database	Completed lessonid is stored in the database	Pass
3.	Course material retrieval from the database	Correct course data should be retrieved	Correct course data is retrieved	Pass
4.	User attempts a lesson	Correct live statistics should be shown	Correct live statistics is shown	Pass

Typing Test

Input – User completes test, Stats data from database

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	User is not logged in	User should be redirected to login page	User is redirected to login page	Pass
2.	User completes a test	Test stats should be stored in the database	Test stats are stored in the database	Pass
3.	User completes a test	Speed and error gain should be shown	Speed and error gain is shown	Pass

Typing Challenges

Input – User completes challenge, Challenge data from database

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	User is not logged in	User should be redirected to login page	User is redirected to login page	Pass
2.	User completes a Challenge	Challenge Stats should be shown to the user in modal box	Challenge Stats is shown to the user in modal box	Pass
3.	Paragraph retrieved from the database	All correct paragraphs should be retrieved from the database	All correct paragraphs is retrieved from the database	Pass

Typing Challenges

Input – User data from database

S. No.	Test Case	Expected Result	Actual Result	Pass/Fail
1.	User is not logged in	User should be redirected to login page	User is redirected to login page	Pass
2.	User data retrieved from the database	Correct user data should be retrieved from the database	Correct user data is retrieved from the database	Pass
3.	Graphs drawn	Proper scaling of wpm vs testno. And error vs testno. graphs should be done	Proper scaling of wpm vs testno. And error vs testno. graphs is done	Pass