A picture containing night sky

Description automatically generated

INTRO TO SOFTWARE ENGINEERING

(Sprint 1)

**USER STORIES**

&

**STRUCTURED SPECIFICATIONS**

**MASOOD GHAURI (21I-1198)**

**MUHAMMAD EMAN (21I-1140)**

**SHERAZ TARIQ (21I-1188)**

Our project is a **Typing Tutor** which teaches through

lessons, and games, and also takes typing test to test

the typing speed of Users.

Sprint 1 (Lessons)

In our first sprint of this project, **we had to make all**

**the lessons of the typing tutor**. It teaches through some

typing lessons. And for the instance of user, we also made **something like** **dummy fingers** which actually find and

highlight the key which is needed to be pressed by the user for next alphabet in lessons, and if user presses wrong key, it **beeps to indicate the wrong input.** It makes learning easier and more efficient.

The **User Stories** and their **Structured Specification** for this module are as follows:

**Title:**

User-friendly interface

**Priority:**

10

**Story ID:**

01

**User Story:**

As a **user**

I want **a user-friendly interface**

So that **I can navigate easily**.

**Acceptance criteria:**

If it works, then it **should display the layout**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Display a user-friendly UI to make navigation easier and have a nice appearance.

**Description:**

Display a user-friendly UI to make navigation easier and have a nice appearance.

It will improve overall usability and appearance.

**Input:**

No input.

**Source:**

Layout function in code.

**Outputs:**

A nice layout to appear on the screen.

**Destination:**

Wherever it is called

**Action:**

A nice layout will appear on the screen.

**Requirements:**

none

**Pre-conditions:**

none

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Dummy Fingers layout and working

**Priority:**

8

**Story ID:**

02

**User Story:**

*As a* **user**

*I want to* **see a dummy fingers layout which finds and highlights the finger need to be pressed for the next alphabet.**

*So that* **it can help me learning rapidly.**

**Acceptance criteria:**

If it works, **it should draw fingers on the screen and should find and highlight the dummy finger**

Else

it would **display nothing.**

**Structured Specification**

**Function:**

Display dummy fingers and highlight the finger on the screen.

**Description:**

Display dummy fingers on the screen, then find and highlight the finger which need to be pressed for net alphabet.

**Input:**

Text object array in code.

**Source:**

Dummy Fingers Oject in code.

**Outputs:**

Displayed dummy fingers and highlighted the respected dummy finger on the screen.

**Destination:**

In wherever function it is called

**Action:**

Dummy fingers will display on the screen and highlight the dummy finger

**Requirements:**

none

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Intro Tab

**Priority:**

6

**Story ID:**

03

**User Story:**

*As a* **user**

*I want* **to see the intro tab**

*So that* **I can switch to lessons, tests, or typing games**

**Acceptance criteria:**

If it works, then it **should display the intro tab**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Display the intro tab.

**Description:**

It will display the intro tab from which the user can choose whether a test, a lesson, or a game.

**Input:**

No input.

**Source:**

Intro tab in code and the main function.

**Outputs:**

Highlight the dummy finger which needs to be pressed by the user.

**Destination:**

To selected function/page chosen by user

**Action:**

Show intro tab.

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Start Lesson 1

**Priority:**

4

**Story ID:**

04

**User Story:**

*As a* **user**

*I want to* **start lesson 1**

*So that* **I can start learning lesson 1**

**Acceptance criteria:**

If it works, then it **should start lesson 1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the first lesson.

**Description:**

Will start Lesson 1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Profile Object.

**Source:**

Lesson1 function in code

**Outputs:**

Will start Lesson 1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 1.1.

**Action:**

Start Lesson 1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 1.1

**Priority:**

4

**Story ID:**

4.1

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 1.1**

*So that* **I can learn sub-lesson 1.1**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 1.1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 1 of the first lesson.

**Description:**

Will start sub-Lesson 1.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 1.1 Text object array

**Source:**

The intro tab

**Outputs:**

Will start sub-Lesson 1.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 1.2

**Action:**

Start sub-Lesson 1.1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 1.2

**Priority:**

4

**Story ID:**

4.2

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 1.2**

*So that* **I can learn sub-lesson 1.2**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 1.2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 2 of the first lesson.

**Description:**

Will start sub-Lesson 1.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 1.2 text object array

**Source:**

The lesson 1.1

**Outputs:**

Will start sub-Lesson 1.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 1.3

**Action:**

Start sub-Lesson 1.2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 1.3

**Priority:**

4

**Story ID:**

4.3

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 1.3**

*So that* **I can learn sub-lesson 1.3**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 1.3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 3 of the first lesson.

**Description:**

Will start sub-Lesson 1.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 1.3 text object array

**Source:**

The sub-lesson 1.2

**Outputs:**

Will start sub-Lesson 1.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Lesson 2

**Action:**

Start sub-Lesson 1.3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Start Lesson 2

**Priority:**

3

**Story ID:**

05

**User Story:**

*As a* **user**

*I want to* **start lesson 2**

*So that* **I can start learning lesson 2**

**Acceptance criteria:**

If it works, then it **should start lesson 2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the second lesson.

**Description:**

Will start Lesson 2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Profile object

**Source:**

The lesson 1.3

**Outputs:**

Will start Lesson 2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 2.1

**Action:**

Start Lesson 2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 2.1

**Priority:**

3

**Story ID:**

5.1

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 2.1**

*So that* **I can learn sub-lesson 2.1**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 2.1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 1 of the second lesson.

**Description:**

Will start sub-Lesson 2.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 2.1 Text object array

**Source:**

The Sub-lesson 1.3

**Outputs:**

Will start sub-Lesson 2.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 2.2

**Action:**

Start sub-Lesson 2.1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 2.2

**Priority:**

3

**Story ID:**

5.2

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 2.2**

*So that* **I can learn sub-lesson 2.2**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 2.2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 2 of the second lesson.

**Description:**

Will start sub-Lesson 2.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 2.2 text object array

**Source:**

The Sub-lesson 2.1

**Outputs:**

Will start sub-Lesson 2.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 2.3

**Action:**

Start sub-Lesson 2.2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 2.3

**Priority:**

3

**Story ID:**

5.3

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 2.3**

*So that* **I can learn sub-lesson 2.3**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 2.3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 3 of the second lesson.

**Description:**

Will start sub-Lesson 2.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 2.3 text object array

**Source:**

The Sub-lesson 2.2

**Outputs:**

Will start sub-Lesson 2.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Lesson 3

**Action:**

Start sub-Lesson 2.3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Start Lesson 3

**Priority:**

2

**Story ID:**

06

**User Story:**

*As a* **user**

*I want to* **start lesson 3**

*So that* **I can start learning lesson 3**

**Acceptance criteria:**

If it works, then it **should start lesson 3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Display the third lesson

**Description:**

Will start Lesson 3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Profile object

**Source:**

The Sub-lesson 2.3

Lesson 3 function in code.

**Outputs:**

Will start Lesson 3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 3.1

**Action:**

Start Lesson 3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 3.1

**Priority:**

2

**Story ID:**

6.1

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 3.1**

*So that* **I can learn sub-lesson 3.1**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 3.1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 1 of the third lesson.

**Description:**

Will start sub-Lesson 3.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 3.1 text object array

**Source:**

The Sub-lesson 2.3

**Outputs:**

Will start sub-Lesson 3.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 3.2

**Action:**

Start sub-Lesson 3.1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 3.2

**Priority:**

2

**Story ID:**

6.2

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 3.2**

*So that* **I can learn sub-lesson 3.2**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 3.2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 2 of the third lesson.

**Description:**

Will start sub-Lesson 3.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 3.2 text object array

**Source:**

The Sub-lesson 3.1

**Outputs:**

Will start sub-Lesson 3.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 3.3

**Action:**

Start sub-Lesson 3.2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 3.3

**Priority:**

2

**Story ID:**

6.3

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 3.3**

*So that* **I can learn sub-lesson 3.3**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 3.3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 3 of the third lesson.

**Description:**

Will start sub-Lesson 3.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 3.3 text object array

**Source:**

The Sub-lesson 3.2

**Outputs:**

Will start sub-Lesson 3.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Lesson 4

**Action:**

Start sub-Lesson 3.3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Start Lesson 4

**Priority:**

1

**Story ID:**

07

**User Story:**

*As a* **user**

*I want to* **start lesson 4**

*So that* **I can start learning lesson 4**

**Acceptance criteria:**

If it works, then it **should start lesson 4**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Display the fourth lesson

**Description:**

Will start Lesson 4 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Profile Object

**Source:**

The Sub-lesson 2.3

Lesson 4 function in code.

**Outputs:**

Will start Lesson 4 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 44.1

**Action:**

Start Lesson 4

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 4.1

**Priority:**

1

**Story ID:**

7.1

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 4.1**

*So that* **I can learn sub-lesson 4.1**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 4.1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 1 of the fourth lesson.

**Description:**

Will start sub-Lesson 4.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 4.1 text object array

**Source:**

The Sub-lesson 3.3

**Outputs:**

Will start sub-Lesson 4.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 4.2

**Action:**

Start sub-Lesson 4.1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 4.2

**Priority:**

1

**Story ID:**

7.2

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 4.2**

*So that* **I can learn sub-lesson 4.2**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 4.2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 2 of the fourth lesson.

**Description:**

Will start sub-Lesson 4.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 4.2 text object array

**Source:**

The Sub-lesson 4.1

**Outputs:**

Will start sub-Lesson 4.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 4.3

**Action:**

Start sub-Lesson 4.2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 4.3

**Priority:**

1

**Story ID:**

7.3

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 4.3**

*So that* **I can learn sub-lesson 4.3**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 4.3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 3 of the fourth lesson.

**Description:**

Will start sub-Lesson 4.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 4.3 text object array

**Source:**

The Sub-lesson 4.2

**Outputs:**

Will start sub-Lesson 4.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Lesson 5

**Action:**

Start sub-Lesson 4.3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Start Lesson 5

**Priority:**

0

**Story ID:**

08

**User Story:**

*As a* **user**

*I want to* **start lesson 5**

*So that* **I can start learning lesson 5**

**Acceptance criteria:**

If it works, then it **should start lesson 5**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Display the fifth and the final lesson.

**Description:**

Will start Lesson 5 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Profile object

**Source:**

The Sub-lesson 4.3

**Outputs:**

Will start Lesson 5 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 5.1

**Action:**

Start Lesson 5

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 5.1

**Priority:**

0

**Story ID:**

8.1

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 5.1**

*So that* **I can learn sub-lesson 5.1**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 5.1**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 1 of the final lesson.

**Description:**

Will start sub-Lesson 5.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 5.1 text object array

**Source:**

The Sub-lesson 4.3

**Outputs:**

Will start sub-Lesson 5.1 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 5.2

**Action:**

Start sub-Lesson 5.1

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 5.2

**Priority:**

0

**Story ID:**

8.2

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 5.2**

*So that* **I can learn sub-lesson 5.2**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 5.2**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 2 of the final lesson.

**Description:**

Will start sub-Lesson 5.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 5.2 text object array

**Source:**

The Sub-lesson 5.1

**Outputs:**

Will start sub-Lesson 5.2 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Sub-lesson 5.3

**Action:**

Start sub-Lesson 5.2

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.

**Title:**

Lesson 5.3

**Priority:**

0

**Story ID:**

8.3

**User Story:**

*As a* **user**

*I want to* **start sub-lesson 5.3**

*So that* **I can learn sub-lesson 5.3**

**Acceptance criteria:**

If it works, then it **should start sub-lesson 5.3**

else

it would **display nothing.**

**Structured Specification**

**Function:**

Start the sub-lesson 3 of the final lesson.

**Description:**

Will start sub-Lesson 5.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Input:**

Sub-lesson 5.3 text object array

**Source:**

The Sub-lesson 5.2

**Outputs:**

Will start sub-Lesson 5.3 with its Paragraph and show the Dummy fingers to highlight the finger which needs to be pressed.

**Destination:**

Test function

**Action:**

Start sub-Lesson 5.3

**Requirements:**

None

**Pre-conditions:**

None

**Post-conditions:**

None.

**Side Effects:**

None.