

**SWE 482 Human-Computer Interaction
Spring Semester 2024**



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Group Members			
#	Name	ID	Percentage of tasks performed by member
1	Nouv Al-Qahtani	442201905	16.67%
2	Layan Aluwaishiq	442201814	16.67%
3	Sarah Alhajlan	442201329	16.67%
4	Dana Alajaji	442202315	16.67%
5	Weam alahmadi	442200412	16.67%
6	Saadiya Abdulgader	442204801	16.67%

Group Number	2
Section Number	50802

Supervisor: L. Bushra Al-Kadhi

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Chapter 1

This application offers personalized content to help users control anger and stay calm while driving. It plays supplications, Quranic verses, and podcasts based on user preferences. It also enables connections with others during long traffic delays. The app analyzes traffic flow to activate features automatically. Its aim is to assist users in managing emotions and promoting a calm driving experience.

PART 1: PLAN

A) Existing Technologies (at least 3)

<i>Technology</i>	<i>Description</i>	<i>Pros</i>	<i>Cons</i>
Collision Warning System	The system alerts the driver when approaching another vehicle or obstacle dangerously, helping them avoid collisions and maintain calm while driving.	-Helps to avoid accidents and collisions. -Reduces stress and anxiety during driving.	- wrong alerts may occur in some cases. -expensive.
Speed Control System	The system determines the maximum speed and controls acceleration and deceleration automatically, helping to avoid speeding and reducing stress and nervousness.	- Helps maintain a safe speed and avoid speeding. -Reduces stress and fatigue during driving.	- Delay in system response may occur in some cases. -lack of freedom in determining the speed.
Noise and Sound Control System	using sound insulation materials in the vehicle structure and sound enhancement systems to reduce ambient noise and provide a quiet and comfortable environment inside the vehicle.	- Reduces the impact of annoying noise on focus and comfort.	- expensive.

OUR STAKEHOLDERS

Users: The individuals who will be using the application to control their anger and calm their nerves while driving.

Developers and Designers: The team responsible for creating and maintaining the application.

Content Providers: The individuals or organizations that provide the supplications, Quranic verses, and podcasts. They play a crucial role in ensuring that the application offers a variety of relevant and engaging content for the users.

INTERVIEW PLAN

Hi, my name is // and I'm a software engineering student.

Could you Introduce yourself?

- 1- Do you face anger issues on the road, and what are the sources of your anger while driving?
- 2- How much does this affect your mental health? How do you deal with it? Are there any applications or techniques to help you calm your anger and improve your mood, such as listening to podcasts?
- 3- What are the drawbacks of the application or technology you use?
- 4- What are the advantages of the application or technology you use?
- 5- What are the most important features you would like to see in the application?
- 6- Do you believe that having information about real-time traffic conditions could help reduce instances of road rage? And why?
- 7- How willing are you to use a mobile application specifically designed to address this issue?
- 8- Is there anything else you would like to share about your struggles or needs related to anxiety and anger on the road as a driver?

PART 2: DISCOVERY

A) Summary of the Interviews

<i>Participant</i>	<i>Age</i>	<i>Gender</i>	<i>Characteristics</i>
<i>Participant1</i>	23 years old	Female	She is a university student and has been driving for two years.
<i>Participant2</i>	20 years old	Female	She is a university student and has been driving for one year.
<i>Participant3</i>	23 years old	Female	She is a university student who has been driving for three years.
<i>Participant4</i>	22 years old	Female	She is a university student and has been driving for two years.
<i>Participant5</i>	22 years old	Female	She is a university student and has been driving for two years.
<i>Participant6</i>	20 years old	Female	She is a university student and has been driving for one year.
<i>Participant7</i>	20 years old	Female	She is a university student and has been driving for two years.
<i>Participant8</i>	24 years old	Male	He is an employee and has been driving for four years.

B) Summary of the Interviews

Summary of Interview Findings on Road Rage:

The interviews conducted on road rage provided valuable insights. Participants emphasized the effectiveness of certain activities in mitigating anger while driving, such as listening to podcasts and engaging in conversations. They also expressed concerns about distractions from the road for safety reasons and the inability to use mobile devices while driving.

PART 3: BRAINSTORMING


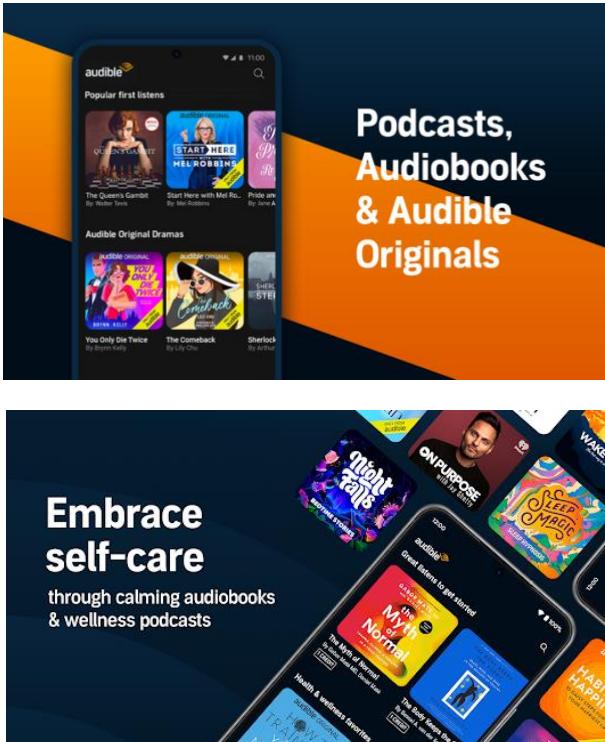
#	Fears
1	Safety violations: Because of safety concerns, we are afraid that the application will be distracting and lead to accidents.
2	The legal consideration: Due to our lack of complete knowledge of traffic violations and laws related to car drivers since we will design an application that drivers uses.
3	Unavailability of Wi-Fi : due to unavailability of Wi-Fi for some users The application will become ineffective .
4	Time consuming: As a result of the difficulty of using the application or the fact that it contains several steps that waste the driver's time.
5	Less usability: As a result of the difficulty of using the application, it is difficult for some categories of users to use the application due to the different ages and technical knowledge of drivers.

#	Needs
1	calming Reminders: To better control their road rage, users want the application to offer calming reminders. These prompts could be to breathe deeply and to be patient.
2	Audio Responsiveness: Users desire audio features that can respond to their commands or prompts. This includes the ability to play calming music or broadcast audio content, such as guided meditations or podcasts, to help them relax and reduce stress while driving.
3	Suggesting Distractions: Users have expressed a need for the application to provide suggestions for substitute activities that will take their minds from occurrences involving road rage. These recommendations ought to be safe and non-distracting such as making a phone call to a friend or engaging in other calming strategies.
4	Real-time Road Status: Users need the application to give them up-to-date information on road conditions in real-time, such as presence of accidents, traffic congestion, or other relevant incidents. Users need this information to plan routes efficiently, make wise judgments, and proactively avoid situations that could incite road rage.

5	Distraction-free Design: Because of safety concerns, users place a high value on an application's design that reduces distractions while using it. In addition to including voice-activated controls or other capabilities that make it simple and safe to engage with the interface while driving.
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#	Brainstormed Features	Need or fear associated with the features
1	Implement Calming Reminders for deep breathing, patience, and stress reduction techniques.	calming Reminders
2	Implement Voice-Activated Controls for hands-free app interaction through voice commands.	Audio Responsiveness
3	Implement Distraction-Free Suggestions by providing safe activity recommendations, including making phone calls, listening to audiobooks, or broadcasting audio content.	Suggesting Distractions
4	Implement Real-Time Road Alerts to deliver voice notifications about upcoming road conditions, helping users stay informed and proactively avoid situations that could incite road rage.	Real-time Road Status
5	implement a minimalist and intuitive user interface that minimizes visual distractions such as Clear Typography and Utilize clear and recognizable icons to represent actions or functions.	Distraction-free Design
6	Implement an interface that appears at the beginning of opening the application that explains instructions about the general driving laws.	The legal consideration
7	Implement functionalities that can be used without needing to have wi-fi.	Unavailability of Wi-Fi
8	Implement interfaces contain few steps so as not to waste the user's time.	Time consuming
9	Implement interfaces that is user-friendly so that any user, regardless of their category, can use the application.	Less usability

PART 4: FINDING INSPIRATION

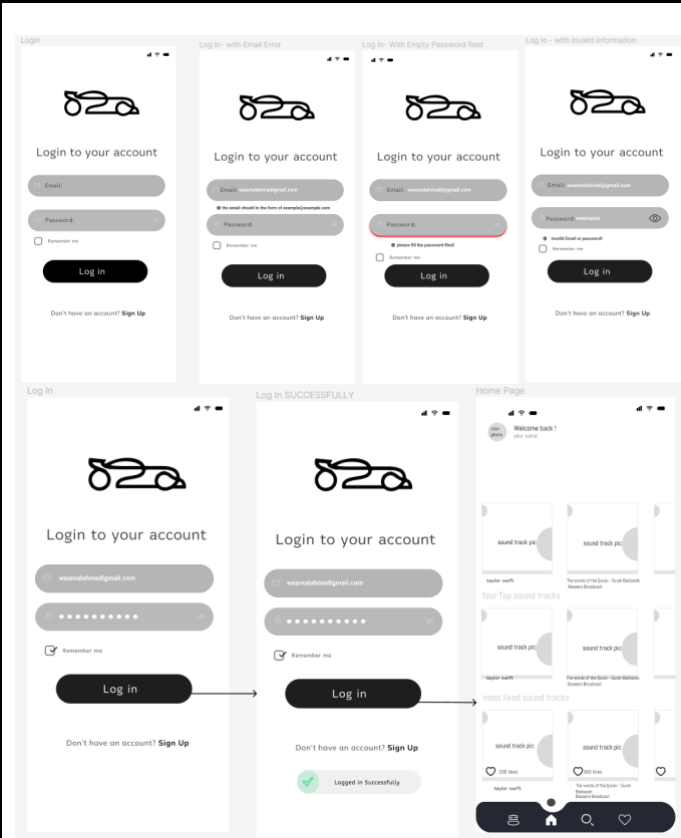
#	Inspiration/ Design Idea (textual description, image, sketch, diagram, etc.)	Explanation of why you chose that inspiration or design (What did you take away from it? What did you learn from it?...In other words, why did it inspire you?)
1	<p style="text-align: center;">Podcast player</p> 	<p>Most of the interviewees said that listening to something while driving is very helpful and makes them feel more comfortable. They may be less likely to experience road rage if they use this technique to prevent themselves from these situations. So, we need to focus on this point in our project and consider it a top priority to make our system useful to solve this problem. And these images are for one of the highly used podcast apps we need to inspire from. One of the features of this application that inspired us is the ability for the user to choose topics that interest him so that the suggested podcast in this app are based on the user's preferences.</p>
2	<p>our inspiration was Audible, audiobook and podcast platform owned by Amazon.</p> 	<p>Listening to an audiobook was one of the top hints for our interviewees to reduce road rage. The app allows users to browse and purchase audiobooks, create custom collections, and adjust playback settings to suit their preferences.</p> <p>The app provides features like bookmarking, adjustable playback speed, and syncing across devices, which enhance the user's ability to consume content while on the go.</p> <p>So, a customizable app for the drivers inspires us and provides valuable insights into designing an app that focuses on audio content consumption.</p>

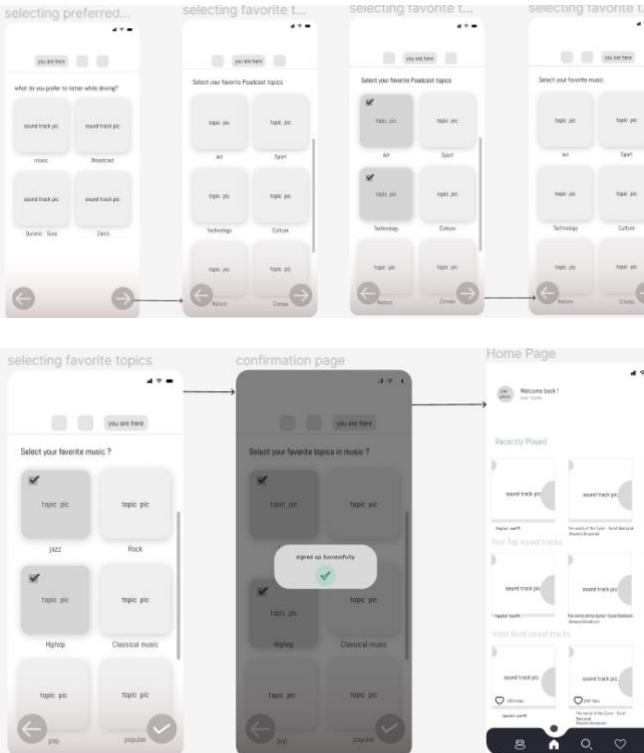
Chapter 2

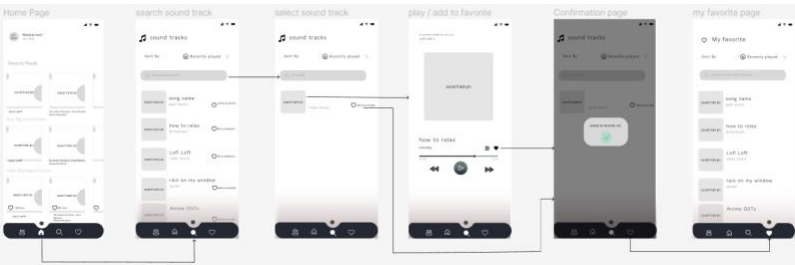
We carefully selected the features for our application based on maximum suitability and enjoyment. After considering the participants' diverse needs, we decided to incorporate Audio Responsiveness and Suggesting Distractions by integrating Siri and a chatbot that respond to voice commands. We also addressed the desire for a distraction-free design, allowing users to immerse themselves in their favorite soundtracks. To accommodate the need for offline usage, we implemented the ability to save favorite soundtracks for Unavailability of Wi-Fi situations. Additionally, our app offers curated options such as viewing recent, top, and most liked soundtracks by everyone, as well as the ability to select preferred types and topics of soundtracks, making it time-consuming and user-friendly.

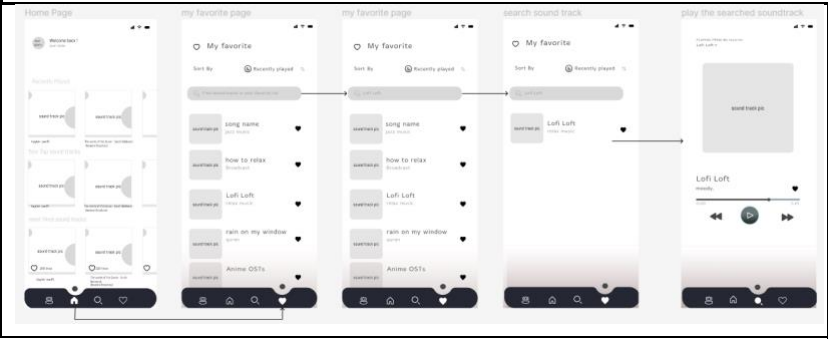
PAPERPROTOTYPE

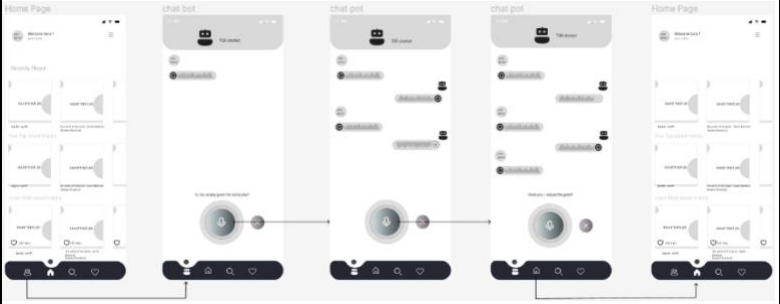
Note: if you'll like to display high quality of our app, here is [Figma link](#) , we make sure the link is available.

Screen shot of the interface	captions
Log in	
	When the user enters an invalid email format.
	When the user press on the log in button without entering the password, it will show an error message.
	When the user enters invalid email or password.
	When the user enters valid email and password it will show a conformation message after pressing the log in button.

Screen shot of the interface	captions
Selecting the favorite soundtrack to listen and topics	
	When the user signs up and starts using the app for the first time so the application can filter the soundtrack types and topic the user selections.
	The user will select the type of soundtrack they prefer to listen to while driving.
	The user will select the topic of broadcast they prefer to listen to while driving.
	The user will select the topic of music they prefer to listen to while driving.
	After signing up and selecting the favorite soundtrack to listen to and topics it will appear a conformation message.

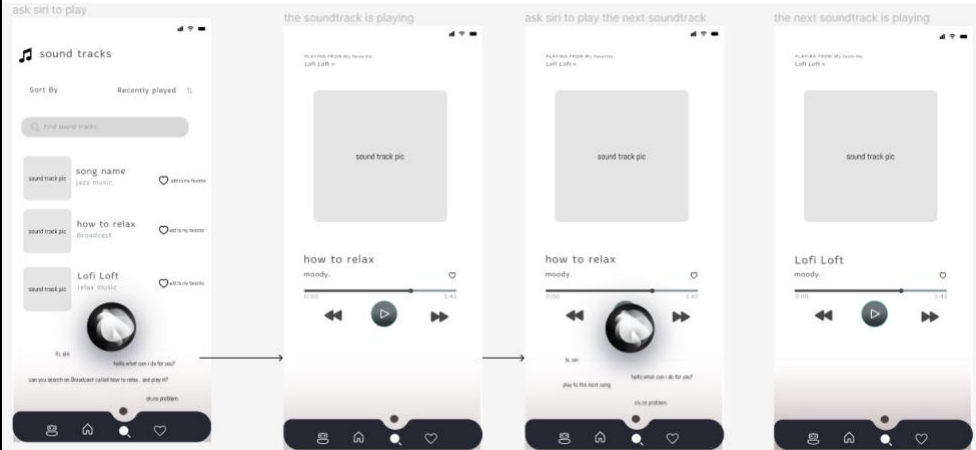
Screen shot of the interface	captions
Search soundtrack and add it to my favorite	
	When the user logs in it will appear a home page that has recently played soundtrack, and the top sound tracks they listen to and most liked one by everyone who use the application.
	The user will click on the search bottom in the navigation bar it will navigate to search page
	Then the user will search soundtrack in the search bar
	The user can click on the soundtrack and listen and click on the heart icon to add it the favorite page or by only clicking the heart icon after searching.
	And if the user searches a non-existing soundtrack, it will show an error message.

Screenshot of the interface	captions
Search soundtrack in my favorite	
	the user logs in it will appear a home page
	The user will click on the heart bottom in the navigation bar it will navigate to favorite page
	Then the user will search soundtrack in the search bar
	Then click on soundtrack to play it
	And if the user searches a non-existing soundtrack, it will show an error message.

Screenshot of the interface	captions
Ask the chatbot to recommend podcasts or give sound games	
	When the user logs in it will appear a home page that has recently played soundtrack, and the top sound tracks they listen to and most liked one by everyone who uses the application.
	To initiate interaction with the chatbot, the user clicks on the microphone icon. This allows the user to speak commands and questions to the chatbot without needing to touch the screen, making it suitable for use while driving.
	The user responds by clicking on the microphone icon and provides their answer or input for the game. The chatbot processes the user's response and proceeds with the game accordingly.
	Throughout the interaction, the chatbot's responses are communicated to the user through audio output, allowing the driver to hear the chatbot's voice without the need for visual distractions.
	Once the user is finished with the chatbot or the game, they can choose to end the conversation.

Screenshot of the interface	Captions
View and Edit profile	
	When the user clicks on the account above the page, a menu will be displayed, and the user will be able to click on (profile) or (log-out) to view his/her profile or log out from his/her account respectively.
	When the user clicks on (profile), a profile page will be displayed.
	The user has two options (edit the profile or go back to the previous page).
	When the user clicks on edit, an edit page will be displayed.
	Then, the user will be able to edit his/her information and save it (or cancel the edits).
	If the user clicks on the save button, a page that shows that the editing process has succeeded will be shown
	The home page of the application will be displayed at the end of the editing profile process.

Screenshot of the interface	Captions
Log out page	
	When the user clicks on the profile picture above the page, a menu will be displayed, and the user will be able to click on (profile) or (log-out) to view his/her profile or log out from his/her account, respectively.
	When the user clicks on (log out), an alert message will be displayed to ask the user if he really wants to log out of his/her account.
	If the user clicks on (No) option, it will go back to the home page.
	When the user clicks on (yes) option the log-out will be successfully done.
	Then, a message will conformation message that the log out has been successfully done.
	The log in page will be displayed.

Screenshot of the interface	captions
search and ask Siri to play a soundtrack	
	<p>The user asks Siri by voice to play a soundtrack on any page and asks play for the next soundtrack as an example.</p> <p>Siri will play the soundtrack.</p>

Chapter 3

Uizard is a powerful AI-powered UI design tool that offers numerous advantages for users looking to streamline their design process. However, we eventually decided to transfer our workflow to Figma due to certain limitations in Uizard. These limitations included the need for a subscription and restrictions on the number of pages and components we could create. As a result, we were unable to fully realize our vision of creating a fully functional prototype in Uizard. Nevertheless, we made the most of the available AI tools in Uizard to gain insights and learn about the various AI capabilities that could facilitate our work in future usage.


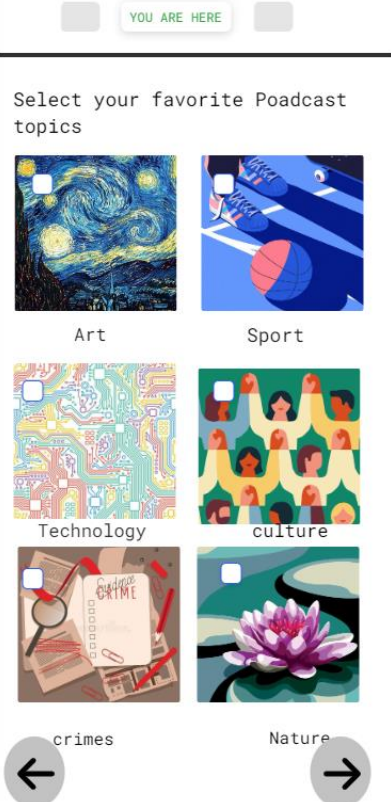
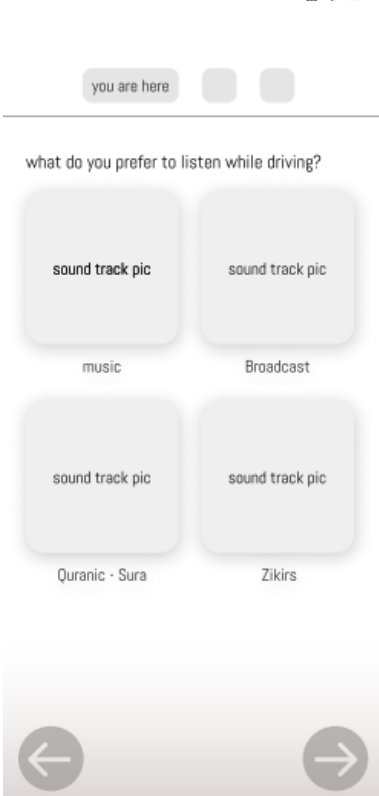
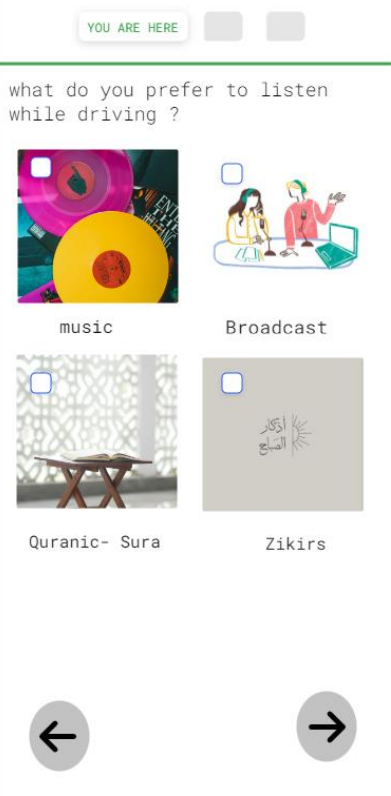
Pros:

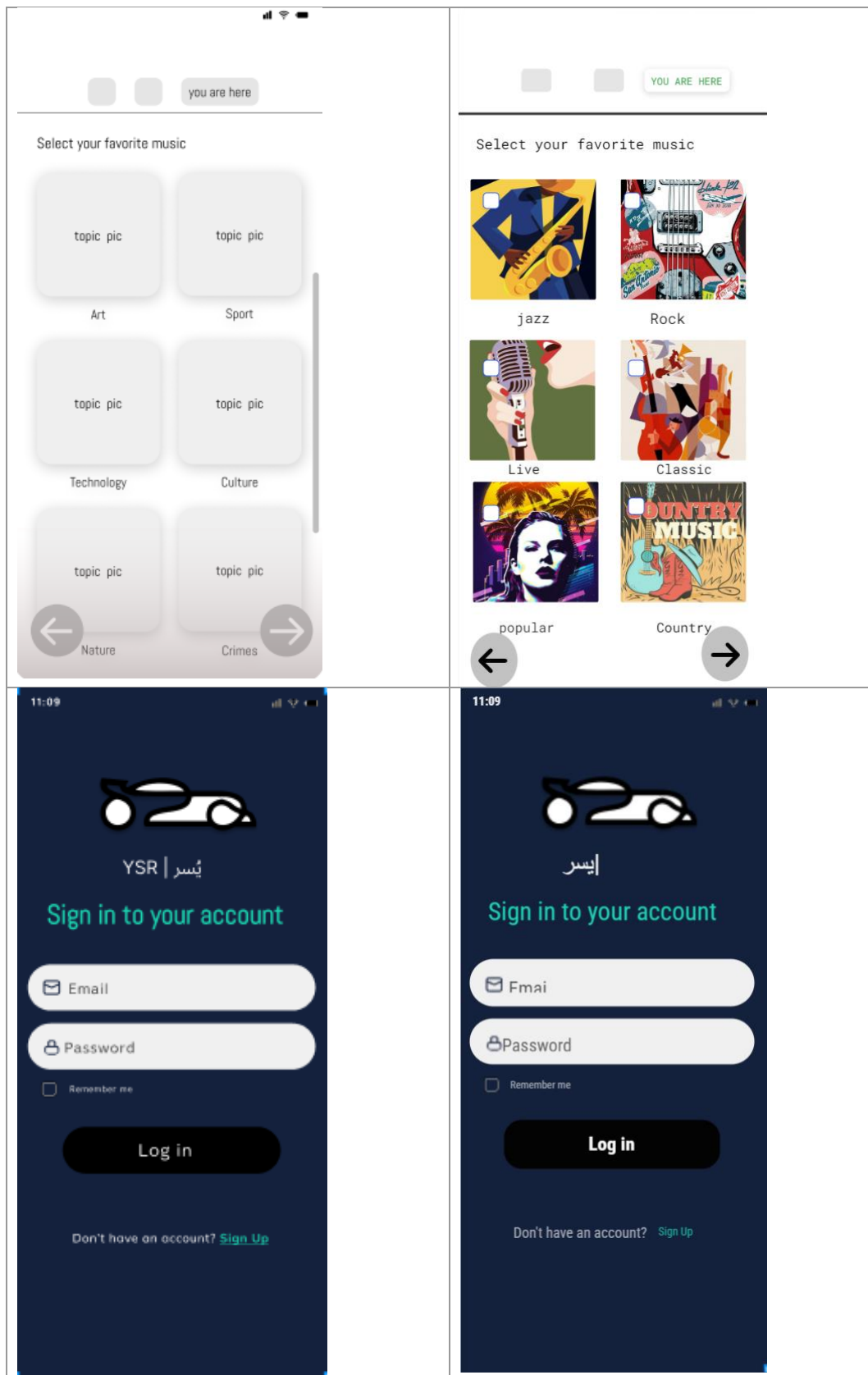
- **Fast and efficient:** Uizard allows users to generate UI designs from simple text prompts, saving time and effort.
- **Precise and versatile design options:** The drag-and-drop editor provides a wide range of design components and themes, ensuring flexibility and creativity in the design process.
- **Seamless integration with screenshots:** The Screenshot Scanner feature enables users to transform screenshots into editable mockups, facilitating fast iteration and design improvements.
- **Easy transformation of wireframes:** Uizard simplifies the process of converting wireframes into fully designed and colorful pages, and vice versa, with just a click of a button.
- **Collaboration and real-time feedback:** The tool enables seamless collaboration with team members and stakeholders, allowing for real-time feedback and review of design ideas.

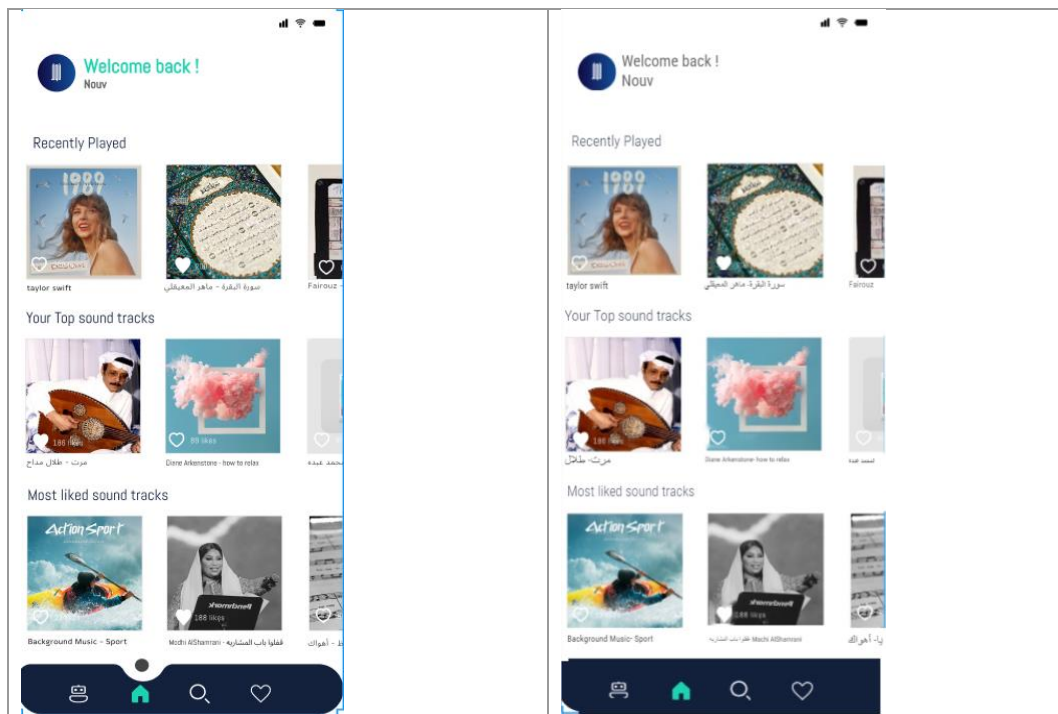
Cons:

- **Limited component and screen usage for free trials:** The free trial version of Uizard may have limitations in terms of the number of components and screens available, which can impact the full exploration of the tool's capabilities.
- **Pricing policy:** Some users, particularly students or those with budget constraints, might find the pricing packages of Uizard to be a challenge, as they may not have sufficient funds for a monthly subscription.
- **Risk of creating generic designs:** Depending solely on AI-generated designs may result in interfaces that are too similar, generic, or boring for users. Some customization and personal touch may be required to ensure unique and engaging designs.


Overall, Uizard offers a convenient and efficient solution for UI design, particularly for those who value speed, precision, and collaboration in their design process. However, users should consider the limitations of free trials and pricing when deciding whether to choose Uizard as their UI design tool.

the Screen shot uploaded to Uizard (before)	Ai generated and customized design (after)
 <p>The original design features a header with a 'you are here' label. Below it, a title 'Select your favorite Poadcast topics' is followed by a 3x2 grid of placeholder boxes labeled 'topic pic'. The grid categories are Art, Sport, Technology, Culture, Nature, and Crimes. Navigation arrows are at the bottom.</p>	 <p>The AI-generated design features a header with a 'YOU ARE HERE' label. Below it, a title 'Select your favorite Poadcast topics' is followed by a 3x2 grid of image placeholders. The grid categories are Art (Starry Night), Sport (Baseball), Technology (Circuit board), culture (People), crimes (Crime scene), and Nature (Lotus flower). Navigation arrows are at the bottom.</p>
 <p>The original design features a header with a 'you are here' label. Below it, a title 'what do you prefer to listen while driving?' is followed by a 2x2 grid of placeholder boxes labeled 'sound track pic'. The grid categories are music, Broadcast, Quranic - Sura, and Zikirs. Navigation arrows are at the bottom.</p>	 <p>The AI-generated design features a header with a 'YOU ARE HERE' label. Below it, a title 'what do you prefer to listen while driving ?' is followed by a 2x2 grid of image placeholders. The grid categories are music (Vinyl records), Broadcast (People at a laptop), Quranic- Sura (Quran on a table), and Zikirs (Arabic calligraphy). Navigation arrows are at the bottom.</p>

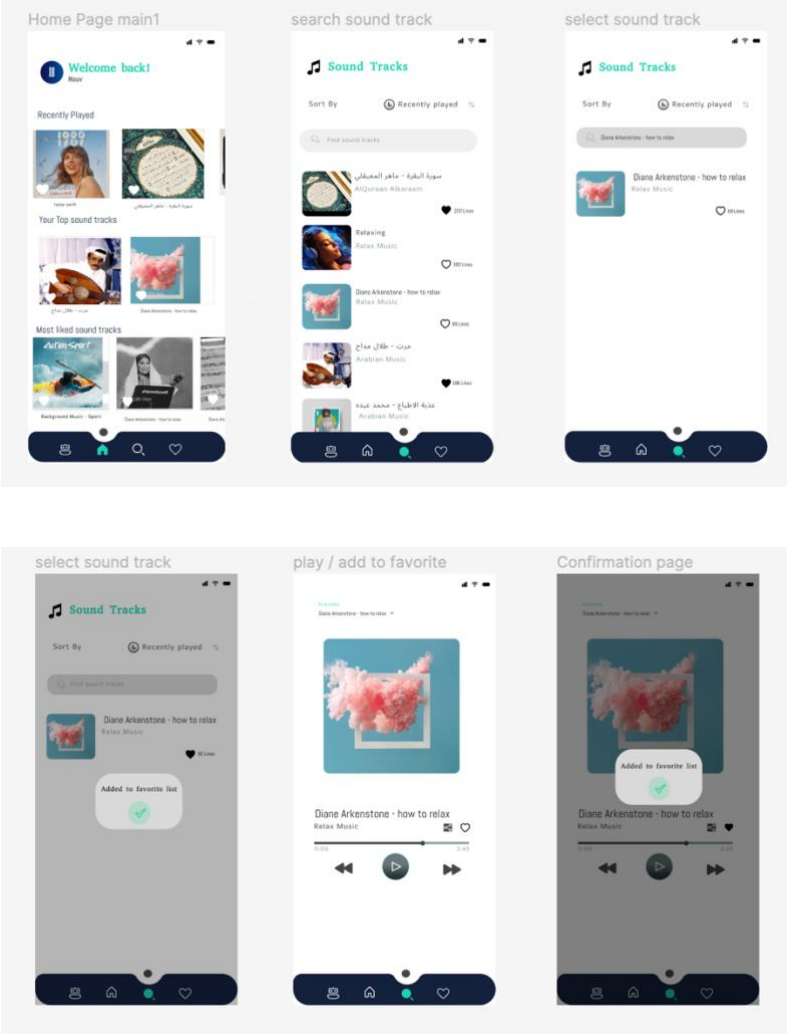




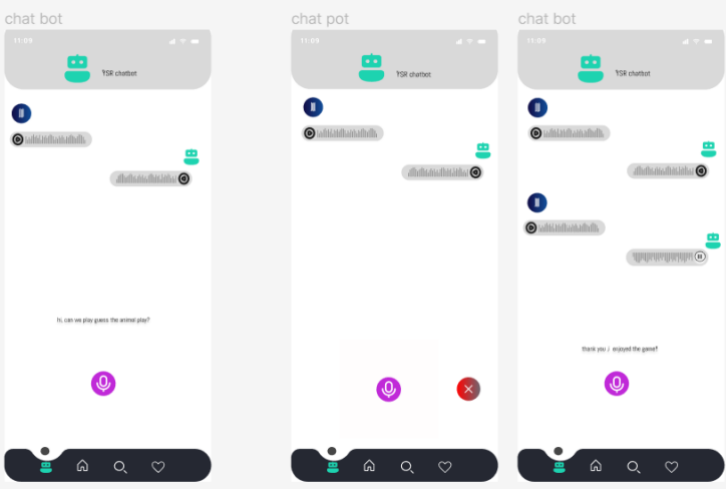
Note: if you'd like to try the functional prototype of our app, here is [Figma link](#), we make sure the link is available.

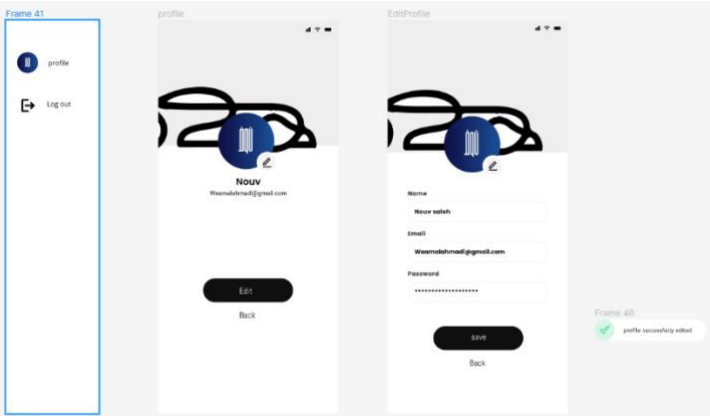
Screen shot of the interfaces	Captions
Sign in & Sign up	
	<p>When the user starts using the app for the first time the app will display the Sign-up page to fill his/her information and if the user fills his/her information, the app will display a that the sign up is succeed and move the user to the next page (Selecting the favorite soundtrack to listen and topics)</p> <p>If the user has an account in the app , he/she should go to the sign in page and fill the email and password field , if the user filled his/her right information , a message that tells the user about the successful sign in operation will be displayed and the app will display the home page to the user.</p> <p>But if the user entered the wrong email/password, an alert message will be displayed, and the app will display the sign in page again until the user enters his/her right information..</p>

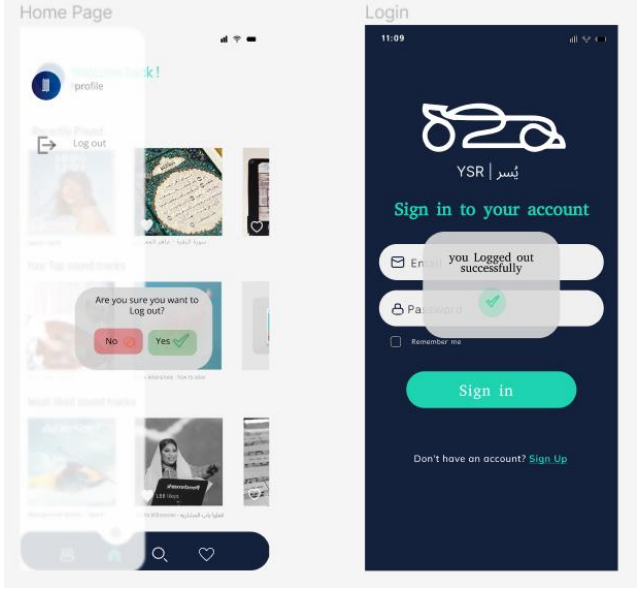
Screen shot of the interfaces	captions
Selecting the favorite soundtrack to listen and topics	
	The user selects their preferred type of soundtrack to listen to while driving.
	The user will select the topic of broadcast they prefer to listen to while driving.
	The user will select the topic of music they prefer to listen to while driving.
	After selecting the favorite soundtrack to listen to and topics it will appear a conformation message.

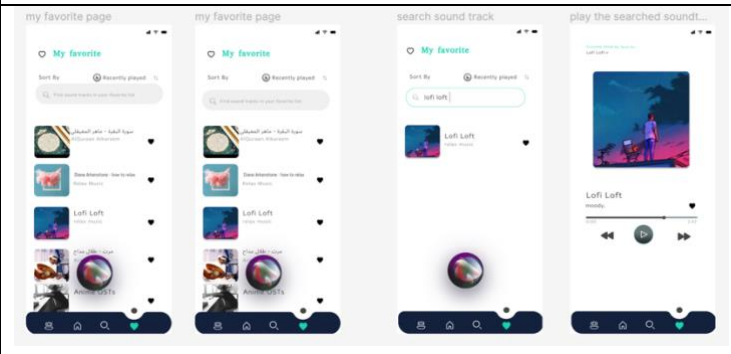
Screen shot of the interfaces	captions
Search soundtrack and add it to my favorite	
	When the user logs in it will appear a home page that has recently played soundtrack, and the top sound tracks they listen to and most liked one by everyone who use the application.
	The user will click on the search bottom in the navigation bar it will navigate to search page.
	Then the user will search soundtrack in the search bar
	The user can click on the soundtrack and listen and click on the heart icon to add it the favorite page or by only clicking the heart icon after searching.

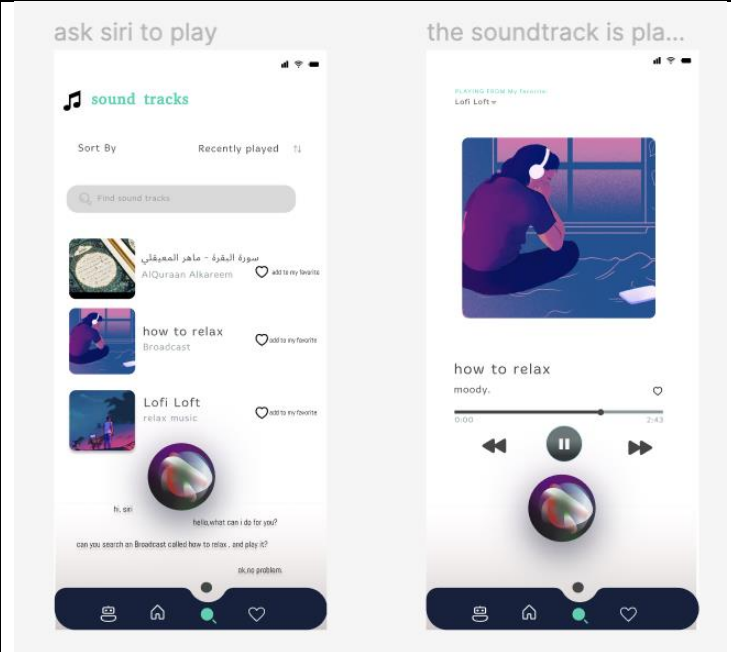
For the flow that we mentioned in Chapter 2 it says, “If the user searches a non-existing soundtrack, it will show an error message.” Note that We did not implement this feedback flow because it conflicts with the conformational feedback, and because the project does not have a backend, we were unable to set conditions to clarify this situation.

Screen shot of the interfaces	captions
Ask the chatbot to recommend podcasts or give sound games.	
	To initiate interaction with the chatbot, the user clicks on the microphone icon. This allows the user to speak commands and questions to the chatbot.
	Figure 2: The user responds by clicking on the microphone icon and provides their answer or input for the game. The chatbot processes the user's response and proceeds with the game accordingly.
	Throughout the interaction, the chatbot's responses are communicated to the user through audio output, allowing the driver to hear the chatbot's voice without the need for visual distractions.
	Once the user is finished with the chatbot or the game, they can choose to end the conversation.

Screen shot of the interfaces	Captions
View and Edit profile.	
	When the user clicks on the account above the page, a menu will be displayed, and the user will be able to click on (profile) or (log-out) to view his/her profile or log out from his/her account respectively.
	When the user clicks on (profile), a profile page will be displayed.
	The user has two options (edit the profile or go back to the previous page).
	When the user clicks on edit, an edit page will be displayed.
	Then, the user will be able to edit his/her information and save it (or back the edits).
	If the user clicks on the save button, a page that shows that the editing process has succeeded will be shown
	The home page of the application will be displayed at the end of the editing profile process.

Screen shot of the interfaces	Captions
Log out page.	
	When the user clicks on the profile picture above the page, a menu will be displayed, and the user will be able to click on (profile) or (log-out) to view his/her profile or log out from his/her account, respectively.
	When the user clicks on (log out), an alert message will be displayed to ask the user if he really wants to log out of his/her account.
	If the user clicks on (No) option, it will go back to the home page.
	When the user clicks on (yes) option the log-out will be successfully done.
	Then, a message will conformation message that the log out has been successfully done.
	The log in page will be displayed.

Screen shot of the interfaces	Captions
search in my favorite page.	
	<p>When the user clicks on the Favorite icon the my favorite page will be displayed which includes all favorite sounds.</p> <p>When the user clicks search bar and type the soundtrack that he/she wants the soundtrack option will be displayed.</p>

Screen shot of the interfaces	Captions
search in the my favorite page	
	<p>When the user clicks on Siri icon, the user will be able to ask Siri to play the soundtrack that he/she wants.</p> <p>After the user say what soundtrack he/she wants to play, the soundtrack will be played.</p>

Note: In the prototype, we have implemented a clickable Siri icon to simulate the voice activation feature. However, it is important to note that in a real user environment, there would be no need for the user to click on it. The voice recognition functionality would be seamlessly integrated, allowing users to interact with the app solely through voice commands without the need for manual activation.

Chapter 4

PART 1: EVALUATION PLAN

Usability testing is a critical process in which the design or product is evaluated by testing it with real users. This process is instrumental in enhancing the user experience by identifying potential areas of improvement and estimating the time required to complete specific tasks. It also assists in detecting design errors that might have been missed during the design phase.

Observing the behavior of users as they attempt to perform tasks during the test can provide invaluable insights into the effectiveness of the design or product. These insights can then be utilized to make necessary improvements, thereby enhancing the overall user experience.

For a usability test to be effective, certain aspects need to be clearly defined:

Goal: *The primary tasks that will be tested are outlined. This provides a clear direction for the usability test and ensures that the most critical aspects of the design or product are evaluated.*

Remember, the ultimate aim of usability testing is to create a product or design that meets the needs of the end-user, thereby ensuring a positive and seamless user experience.

To see EXPERINCE SCRIPT in includes Introduction, Pre-test questionnaire and Post-test questionnaire in the Appendix

- *Introduction, Pre-test questionnaire:*

<https://forms.gle/oczCBZxay2b5yo8d9>

- *Post-test questionnaire:*

https://docs.google.com/forms/d/e/1FAIpQLSeO3_T-iPyBuyL6dzQ1sqQC46fv7dNejOyEyvNg9-OQq5EHQ/viewform

While the facilitator script of the test is provided in Appendix 1: Facilitator Script

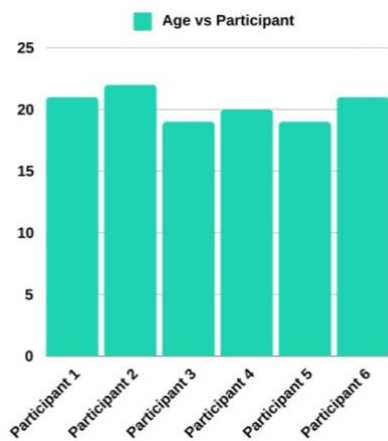
Tasks (Scenarios) that we will test it:

- 1-selecting favorites topics
- 2-view recently,Top,and most liked sound tracks
- 3-search sound track and add it to my favorite
- 4-ask chatbot to give sound games
- 5-search in my favorite page
- 6-ask siri to play a sound track
- 7-view and edit profile
- 8-log out
- 9-log in

Recording of usability testing session and each consent forms are accessible via the following link:

<https://drive.google.com/drive/folders/1Nyx7ZHEKl0lEdpYAqiKzyTOOaNlZbZhc>

<i>Participant name</i>	<i>age</i>	<i>Gender</i>	<i>Average Knowledge of similar systems (1-5)</i>	<i>Use of handheld device or computers (1-5)</i>
<i>Participant 1</i>	21	Female	3	5
<i>Participant 2</i>	22	Female	3	5
<i>Participant 3</i>	19	Female	4	5
<i>Participant 4</i>	20	Female	4	4
<i>Participant 5</i>	19	Female	4	4
<i>Participant 6</i>	21	Female	4	5



Age vs Participant:

Mean: 20.3

Median: 19.5

Mode: 19.21



Knowledge of similar app vs Participant:

Mean: 3.67

Median: 4

Mode: 4

2.2 Timeline

<i>Participant name</i>	<i>Day</i>	<i>Date</i>	<i>Start session time</i>	<i>Finish session time</i>	<i>Duration of session</i>
<i>Participant 1</i>	Tuesday	02/04/2024	5:25 AM	5:28 AM	3:40 min
<i>Participant 2</i>	Monday	15/04/2024	4:30 PM	4:32 PM	2:32 min
<i>Participant 3</i>	Monday	15/04/2024	8:40 PM	8:44 PM	3:56 min
<i>Participant 4</i>	Monday	15/4/2024	8:16 PM	8:18 PM	2:08 min
<i>Participant 5</i>	Monday	15/4/2024	6:00 PM	6:03 PM	3:29 min
Participant 6	Monday	15/4/2024	6:01:00 AM	6:02:36 AM	1:36 min

2.3 Context of the Testing

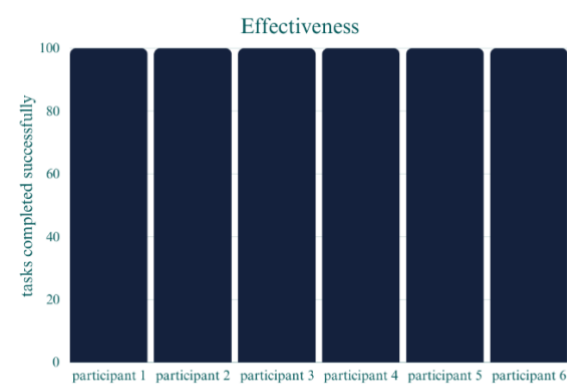
Participant	location
<i>Participant 1</i>	Google meet
<i>Participant 2</i>	Self-conducted
<i>Participant 3</i>	Zoom
<i>Participant 4</i>	Self-conducted
<i>Participant 5</i>	Self-conducted
<i>Participant 6</i>	Zoom

2.4 Performance Measures and Feedback

Metric	How was it measured?	How was the data created/captured?
Effectiveness ^[1]	Using the effectiveness metric, we assess completed usability by evaluating the completion rate, which quantifies the proportion of successfully completed tasks out of those initially undertaken.	<p><i>Effectiveness = (number of successfully task / number of task) * 100 =</i></p> <p><i>Participant 1 : (12/12) * 100 = 100 %</i></p> <p><i>Participant 2 : (12/12) * 100 = 100 %</i></p> <p><i>Participant 3 : (12/12) * 100 = 100 %</i></p> <p><i>Participant 4 : (12/12) * 100 = 100 %</i></p> <p><i>Participant 5 : (12/12) * 100 = 100 %</i></p>

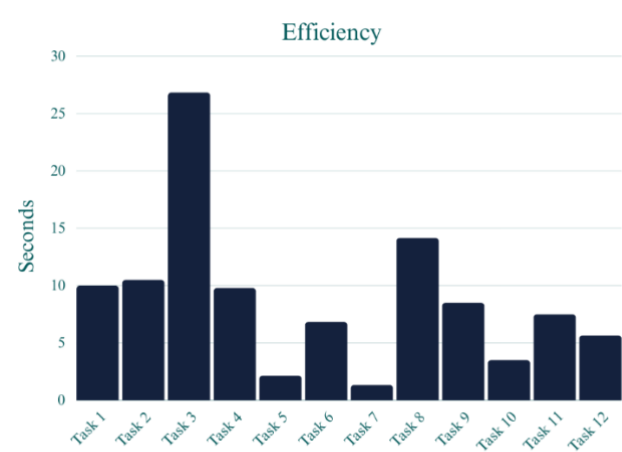
		<p><i>Participant 6 : (12/12) * 100 = 100 %</i></p> <p><i>Average of Effectiveness = 100%</i></p>
Efficiency ^[2]	<p>Time on Task</p> <p>Efficiency = average time to complete a task = Total time spent on task by all participants / number of participants.</p> <p>Such that: Task time = Task end time in seconds – Task start time in seconds.</p> <p>We collected data by analyzing the usability test recordings.</p>	<p><i>Task1: (11+10+9+9+13+8) /6 = 10 sec.</i></p> <p><i>Task 2: (14+3+18+5+18+5) /6 = 10.5 sec.</i></p> <p><i>Task 3: (26+25+25+33+26+26) /6 = 26.83 sec.</i></p> <p><i>Task 4: (6+5+9+10+10+19) /6 = 9.8 sec.</i></p> <p><i>Task 5: (4+2+2+1+1+3) /6 = 2.16 sec.</i></p> <p><i>Task 6: (6+7+6+8+7+7) /6 = 6.83 sec.</i></p> <p><i>Task 7: (1+1+1+1+2+2) /6 = 1.33 sec.</i></p> <p><i>Task 8: (11+15+22+14+15+8) /6 = 14.16 sec.</i></p> <p><i>Task 9: (5+5+7+6+25+3) /6 = 8.5 sec.</i></p> <p><i>Task 10: (6+4+3+2+3+3) /6 = 3.5 sec.</i></p> <p><i>Task 11: (9+12+4+7+9+4) /6 = 7.5 sec.</i></p> <p><i>Task 12: (5+5+5+4+8+7) /6 = 5.66 sec.</i></p>
Satisfaction ^[3]	<p>Using CSAT, or customer satisfaction score.</p> <p>CSAT= (Number of satisfied users (those rating 4 and 5)/Total number of responses) x100</p> <p>(we collected by post-test questionnaire ask users about their satisfaction)</p>	<p>Number of satisfied users (rating 4 and 5) = Number of users who rated it 4 or 5 = 4 (rated 5) + 2 (rated 4) = 6</p> <p>CSAT = (Number of satisfied users / Total number of responses) x 100 = (6 / 6) x 100 = 100</p> <p>Therefore, the CSAT score for satisfaction is 100%.</p>

[1] Effectiveness bar chart.



This bar chart illustrates the number of tasks completed successfully by each participant. It is gratifying to see that all participants successfully completed every assigned task.

[2] Efficiency bar chart.



The efficiency bar chart presents the time taken to complete tasks in seconds. Notably, task 3 required a longer duration, possibly because it involved selecting favorites topics, which are typically more time-consuming due to specifying field requirements.

[3] Refer to [**Appendix 7: User Satisfaction**] for satisfaction rate responses.

2.5 Tasks

Task #	Task	Objective of the task
1	Signup	The aim of this task is to identify how intuitive and efficient the sign-up process is for new users.
2	login	This task aims to measure the ease of access for users when they try to sign into their accounts.
3	select favorites topics	The aim of this task is to evaluate how straightforward it is for users to locate the favorites topics.
4	search sound	This task aims to measure the ease of searching for the sound they want.
5	add sound to the favorites list	The aim of this task is for users to customize their favorite sounds.
6	search in favorites page	The aim of this task is for users to search in favorites page about a sound, so they can find it easily.
7	view liked sound	The aim of this task is for users to view the liked sound so they can remove it from their favorite sounds or play it.
8	ask chatbot to give sound games	The aim of this task is for users to ask the chatbot to give sound games, this functionality holds significant importance as it directly measures efficiency and ease of use
9	ask Siri to play sound	The aim of this task is to play sound by asking Siri to search and find it, this measures the effectiveness of the system with Siri.
10	view profile	The aim of this task is to assess the intuitiveness and efficiency with which users can view their profile in the profile settings.
11	edit profile	The aim of this task is to assess the intuitiveness and efficiency with which users can modify their personal information in the profile settings.
12	logout	The aim of this task is to determine how user-friendly and clear the logout process is ensuring users feel secure as they end their session.

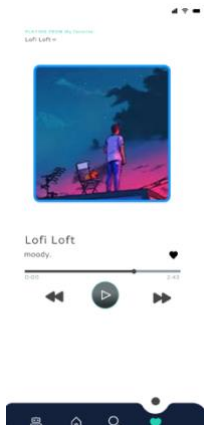
3.1 Critical Problems

- 3.2.1 – Lack of navigation back button in the soundtrack player interface

Explanation:

The problem is that the soundtrack player interface does not have a navigation back button, making it difficult for users to go back to the previous page or screen.

- **Participant 1 recording spanning from minutes 2:04 to 2:08.**



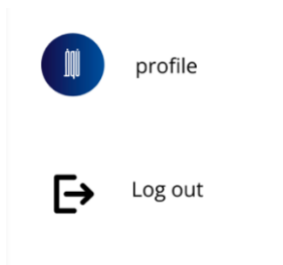
3.2 Major Problems

- 3.1.1 – Difficulty finding the edit profile page

Explanation:

The problem lies in the lack of a clear explanation or indication within the user interface for editing profiles. This makes it challenging for users to identify the correct location to edit their profiles.

- **Participant 2 recording spanning from minutes 1:54 to 1:57.**

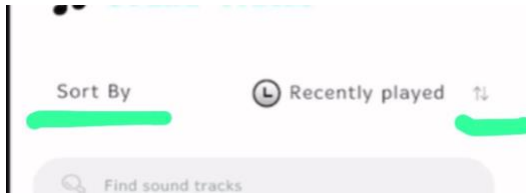


- 3.2.2 –confusing design of Sort By feature

Explanation:

The problem is that the symbol of Sort By is not next to the phrase directly, so when the users intend to sort the page, they will feel little bit confused because they don't know which one of them should they click on to sort their page.

- **Participant 6 recording spanning from minutes 00:46 to 00: 50**



3.3 Minor Problems

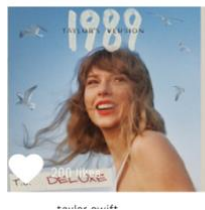
- 3.3.1 – visibility of the like icon and the number of likes

Explanation:

The problem reported by the user is related to the visibility of the like icon and the number of likes in an interface. According to the user, the like icon appears white and unclear, making it difficult to see or discern the number of likes associated with a particular soundtrack on the home page.

- **Participant 1 recording spanning from minutes 1:03 to 1:11.**

Recently Played

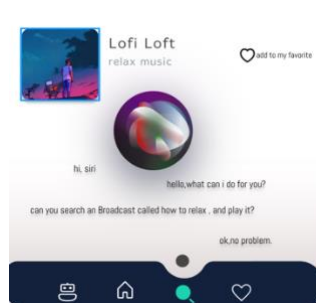


- 3.3.2 – Siri conversation text is unclear

Explanation:

The problem is the unclear and small appearance of the conversation with Siri. The text is difficult to read and comprehend due to its small size

- **Participant 1 recording spanning from minutes 2:22 to 2:26.**



Usability Issue	Recommendation	Severity
<i>Difficulty finding the edit profile page</i>	<p><i>Put the edit choice with the menu that lists the profile and logout choices.</i></p> <p><i>So that it became clear and easy to find the edit profile page.</i></p>	<i>Major</i>
<i>Lack of navigation back button in the soundtrack player interface</i>	<p><i>Put a navigation back button in the soundtrack player interface.</i></p> <p><i>So that it became easy for users to return to the previous page.</i></p>	<i>Critical</i>
<i>confusing design of Sort By feature</i>	<p><i>Put the sort text with the icon of sort in a single label on the same side.</i></p> <p><i>So that the user doesn't get distracted on which side to press.</i></p>	<i>Major</i>
<i>visibility of the like icon and the number of likes</i>	<p><i>Change the color of the text and make the text bigger.</i></p> <p><i>So that it became clear to users to see the like icon and the number of likes.</i></p>	<i>Minor</i>
<i>Siri conversation text is unclear</i>	<p><i>Make the text bigger and choose a clearer line of conversation.</i></p> <p><i>So that it became clear to users to see the whole conversation with Siri clearly.</i></p>	<i>Minor</i>

ChatGPT is an AI-powered language model that generates human-like responses in interactive conversations. Trained on vast text data, it comprehends questions, provides detailed answers, and excels in applications like customer support and virtual assistants. With its versatility and natural language processing capabilities, ChatGPT is an invaluable tool for enhancing communication and delivering intelligent responses. We utilize ChatGPT as a guiding tool in developing our project, leveraging its capabilities to assist us in various aspects. Such as:

- **Generation of interview questions:** Chat GPT aids in generating insightful interview questions that delve deeper into the needs and preferences of users. This helps us gather comprehensive information and gain a better understanding of their requirements.
- **Task recommendation:** By analyzing the results of the interviews, Chat GPT can recommend user tasks that align with the users' needs and objectives. This ensures that the solutions we design are relevant and tailored to their specific requirements.
- **Suitability assessment for driving tasks:** Chat GPT can play a role in evaluating the suitability of user tasks for implementation in driving scenarios. This is crucial for ensuring that the selected tasks are safe, non-distracting, and align with the regulations and guidelines associated with driving.
- **Enhanced pre-test questionnaire:** Chat GPT assists us in enhancing the clarity and effectiveness of our pre-usability test questionnaire. This ensures that we gather meaningful insights from the target users who will be testing our application.

Appendix 1: Facilitator Script

السلام عليكم ورحمة الله وبركاته

في البداية، أشكرك على فرصة المشاركة في تجربة النموذج الأولي لتطبيق "يسر"، هذا التطبيق يهدف إلى تقليل غضب الطريق وجعل تجربة القيادة أمرًا هينًا!

نقدر وقتك وجهودك في تقييم وتحسين أداء التطبيق لتلبية احتياجات المستخدمين بشكل أفضل.

سنقوم بجمع ملاحظاتك واختباراتك لتحديد نقاط القوة والضعف في التطبيق. ستساعدنا هذه الملاحظات في تحسين أداء التطبيق وجعله أكثر سهولة وراحة للمستخدمين.

هدف هذه التجربة هو قياس مدى سهولة استخدام التطبيق، سنقوم بتنفيذ مجموعة من المهام والتحدث بصوت مسموع أثناء تنفيذ كل مهمة.

أنا هنا لمساعدتك خلال هذه التجربة وفي اختبار مهام تصميم التطبيق، وليس لاختبار مهاراتك الشخصية. إذا واجهتك أي مشكلة أو استفسار خلال التجربة، فلا تتردد في طرحها.

ونؤكد لك أنه ليس هناك حاجة لإدخال معلومات شخصية عند تسجيل الدخول أو الاشتراك في التطبيق، حيث سيراعي التطبيق تعبئة هذه المعلومات تلقائيًا. نحن نولي اهتمامًا بالغًا لخصوصية بياناتك ونتعهد بحفظها بأمان واستخدامها فقط لأغراض التحسين والتقييم الداخلي. جميع السجلات والملاحظات التي سيتم جمعها من خلال هذا الاختبار ستكون سرية وستتم مشاركتها فقط الدكتوراة بشرى القاضي وأعضاء الفريق.

ولبدء التجربة الرجاء نرجو بفتح الاستمارة التي تم إرسالها من قبل والتي تحتوي على المهام وبدء تنفيذها بالتسلسل، وتعبئتها.

Appendix 2: Pre- Test Questionnaire

System to reduce the road rage | YSR يسر

introduction :

Welcome to our survey on designing an application aimed at managing road rage among drivers. As traffic congestion continues to rise in Riyadh city, the prevalence of road rage incidents and aggressive behaviors on the road has become a pressing concern. These incidents involve drivers responding to traffic situations or perceived offenses with verbal outbursts, gestures, or, in some cases, even physical confrontations, thereby jeopardizing the physical and mental well-being of all parties involved.

In this survey, we are interested in learning more about you as a user and your personal experiences in dealing with road rage. Additionally, we aim to gauge your interest and willingness to utilize a dedicated application that specifically targets the reduction of road rage incidents.

nouvbutti@gmail.com [Switch accounts](#)

Not shared Draft saved

Participant Number

1

On a scale of 1 to 5, how would you rate your computer skills? (1 being low, 5 being high)

1 2 3 4 5

☐ ☐ ☒ ☐ ☐

[Clear selection](#)

Have you used any existing applications or tools that aim to reduce road rage incidents?

☒ Yes

☐ No

[Clear selection](#)

On a scale of 1 to 5, how would you rate your experience using these methods or tools? (1 being low, 5 being high)

1 2 3 4 5

☐ ☐ ☒ ☐ ☐

[Clear selection](#)

How effective do you think it would be to use an app that offers the ability to listen to your favorite soundtracks and save them for later?

☐ Very effective

☒ somewhat effective

☐ neutral

☐ not very effective

[Clear selection](#)

How interested would you be in using a game chatbot that responds to voice commands while driving?

☐ very interested

☐ interested

☒ neutral

☐ not very interested

☐ not interested

[Clear selection](#)

How important is it for you to have a distraction-free design while using an app while driving such as asking Siri to play a soundtrack ?

☒ very important

☐ important

☐ neutral

☐ not very important

☐ not important

[Clear selection](#)

[Submit](#) [Clear form](#)

Appendix 3: Post- Test Questionnaire

usability test post-survey (YSR | يسر)

This is a standard questionnaire that measures the overall usability of a system. Please select the answer that best expresses how you feel about each statement after using the website today.

تم حفظ المسودة
[تحميل الحساب](#) saadiya495@gmail.com

غير مشترك

* تشير إلى أن السؤال مطلوب

* please choose the participant's number

▼
6

1 . I think I would like to use this tool frequently *

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly Disagree ☐

2 . I found the tool unnecessarily complex *

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

3 . I think I would like to use this tool frequently *

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly Disagree ☐

3 . I thought the tool was easy to use *

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

4 * I think that I would need the support of a technical person to be able to use this system.

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

6 * I thought there was too much inconsistency in this tool

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

5 . I found the various functions in this tool were well integrated *

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

7 . I would imagine that most people would learn to use this tool very quickly *

Strongly Agree ☐

Somewhat Agree ☐

Neutral ☐

Somewhat Disagree ☐

Strongly Disagree ☐

* .I found the tool very cumbersome to use .8

- Strongly Agree ☐
- Somewhat Agree ☐
- Neutral ☐
- Somewhat Disagree ☐
- Strongly Disagree ☐

* .I needed to learn a lot of things before I could get going with this tool .10

- Strongly Agree ☐
- Somewhat Agree ☐
- Neutral ☐
- Somewhat Disagree ☐
- Strongly Disagree ☐

* .I felt very confident using the tool .9

- Strongly Agree ☐
- Somewhat Agree ☐
- Neutral ☐
- Somewhat Disagree ☐
- Strongly Disagree ☐

* ?How likely are you to recommend this website to others .11

- 10 9 8 7 6 5 4 3 2 1 0
- Extremely likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all likely

* How would you rate satisfaction of using the system out of 5

- 5 4 3 2 1
- ☐ ☐ ☐ ☐ ☐

Appendix 4: Consent form template

نموذج طلب موافقة على المشاركة في بحث علي

عنوان الدراسة: تقييم استخدام نموذج أولي لتطبيق "يسر" يهدف إلى معالجة مشاكل الغضب في الطريق.

اسم الباحث الرئيسي:

اسم المشرف على البحث: د. بشرى القاضي

ملخص البحث :

يهدف هذا البحث إلى تقييم استخدام النموذج الأولي لتطبيق "يسر" الذي يستهدف معالجة مشاكل الغضب لدى السائقين أثناء القيادة. نظراً لزيادة حركة المرور في مدينة الرياض، أصبح الأشخاص أكثر عرضة للغضب والسلوكيات العنيفة على الطرق. سيضمحل البحث مشاركة المشاركين في تجربة استخدام النموذج الأولي لتقييم فعالية التطبيق ويتطلب ذلك مشاركة الأفراد الراغبين في استخدام التطبيق وتجربته في سياق الدراسة.

معلومات عن العينة المنتقاة والفترة الزمنية المقدرة لاستكمال المقابلة أو الاستبيان:

تم انتقاء عينة من السائقين الذين يعانون من مشاكل الغضب على الطرق للمشاركة في تجربة التطبيق. يعتبر هؤلاء المشاركون مصدراً قيماً ومفيداً لتقييم النموذج ومشاركة تجاربهم ومعلوماتهم. من المتوقع أن تستغرق جلسات المقابلة حوالي 10 دقائق أو أقل لاستكمالها. نؤكد أن المشاركة في البحث هي طوعية تماماً، ولا يوجد أي ضغط على المشاركين للمشاركة إذا لم يكونوا مستعدين أو مهتمين.

المخاطر المتوقعة والخصوصية :

تتضمن هذه الدراسة تسجيل المقابلات صوتياً وتدون بعض الملاحظات أثناء المقابلات، والنقاط الصور أثناء استخدام بعض الأدوات. ومع ذلك، نؤكد أن جميع هذه المعلومات ستظل سرية داخل فريق البحث ولن يتم مشاركتها مع أي شخص آخر بخلاف مشرف البحث وأعضاء الفريق. تم اتخاذ جميع الإجراءات اللازمة لضمان الحفاظ على خصوصية المشاركين وسرية المعلومات المسجلة. يتم تطبيق الإجراءات اللازمة لحماية الخصوصية والأمان في جميع جوانب البحث وتعامل مع البيانات المسجلة.

المنافع المتوقعة:

من المنافع المتوقعة لمشاركتك في هذا البحث واختبار النموذج الأولي لتطبيق "يسر" لحل مشاكل الغضب على الطرق هي فهم أفضل للصعوبات والتحديات التي يواجهها السائقون في استخدام التطبيقات أثناء القيادة لتقليل مشاكل الغضب، وتحسين صحتهم النفسية ورفاهيتهم الشخصية. بالإضافة إلى ذلك، يمكن لمشاركتك في الاختبار أن تساهم في تطوير وتحسين التطبيق من خلال تقديم ملاحظات قيمة وتعليقات حول أدائه وفاعليته في حل مشاكل الغضب. كما تساهم مشاركتك في تطوير مجال حلول الغضب على الطرق وتوسيع المعرفة والفهم حول التحديات والحلول الممكنة. ونود التأكيد أن مشاركتك هي طوعية وسرية المعلومات وحفاظ خصوصيتك مضمون.

أعضاء الفريق البحثي:

- ونام الأحمدي
- نوف القحطاني
- سارة آل هجلان
- دانه العجاي
- سعدية عبدالقادر
- ليان العويشق

طريقة التواصل مع الباحث:

يمكنك التواصل مع

عن طريق (رقم الهاتف

{ إذا كانت لديك بعض الأسئلة عن الدراسة.

موافقة أو توقيع المشارك في البحث:

حصلت على شرح مفصل عن الدراسة وأهدافها وإجراءاتها، ومنافعها، والمخاطر المحتملة وعن الحرية الكاملة للمشاركة. أفهم كل المعلومات التي قدمت ووصلتني إجابة على كل أسئلتي.

☐ أوافق على أن أشارك في هذه الدراسة بطوعية وبدون أي نوع من الإكراه أو الضغوط. أفهم أن بإمكانني التوقف عن المشاركة في أي وقت.

☐ أوافق على (تسجيلي بالصوت أو بالصورة) بطوعية وبدون أي نوع من الإكراه أو الضغوط. أفهم أن بإمكانني التوقف عن المشاركة في أي وقت.

الاسم :

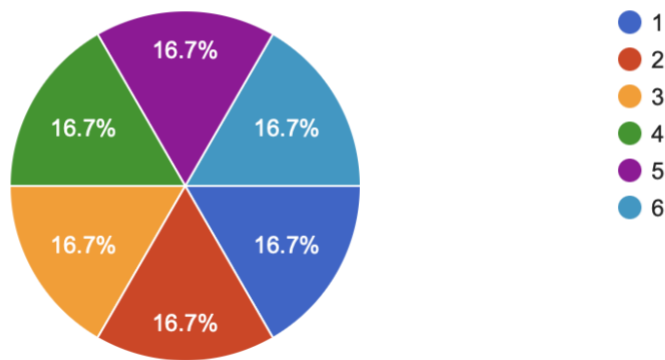
التوقيع :

التاريخ :

Appendix 5: Pre-test questionnaire results

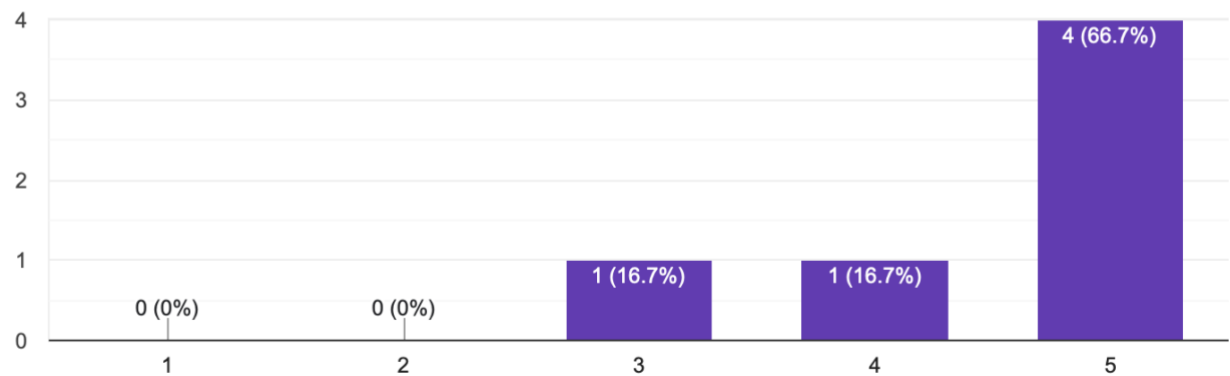
Participant Number

ردود 6



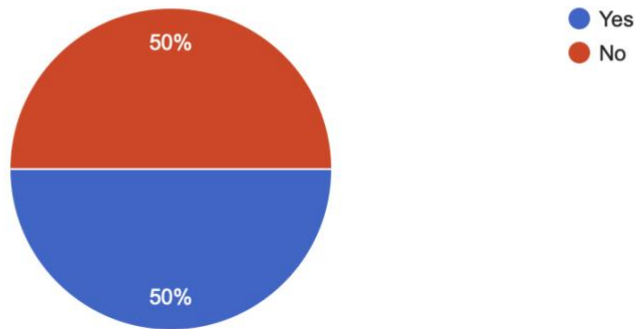
On a scale of 1 to 5, how would you rate your computer skills? (1 being low, 5 being high)

ردود 6



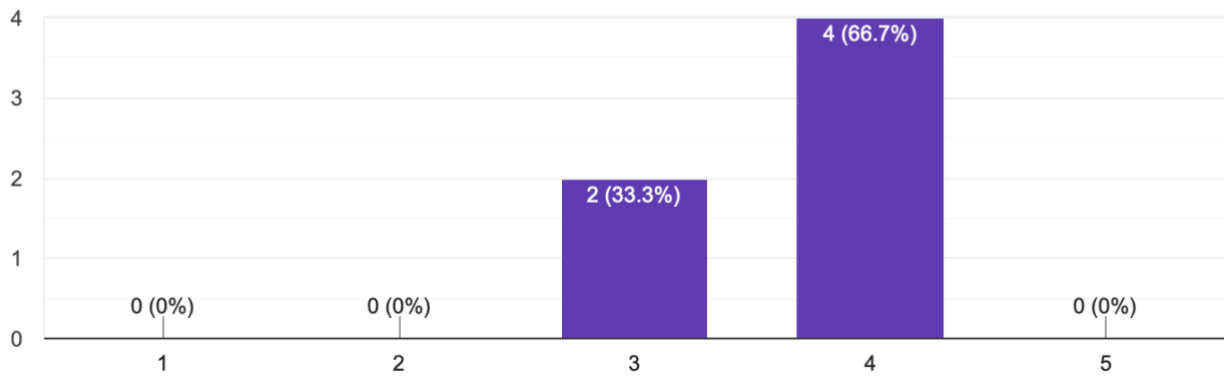
?Have you used any existing applications or tools that aim to reduce road rage incidents

6 ردود



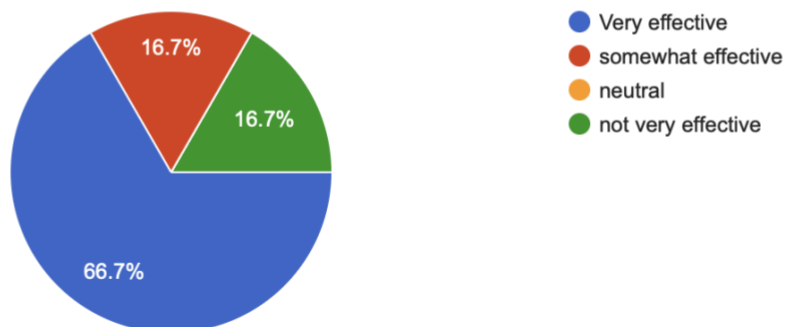
On a scale of 1 to 5, how would you rate your experience using these methods or tools?
(1 being low, 5 being high)

6 ردود



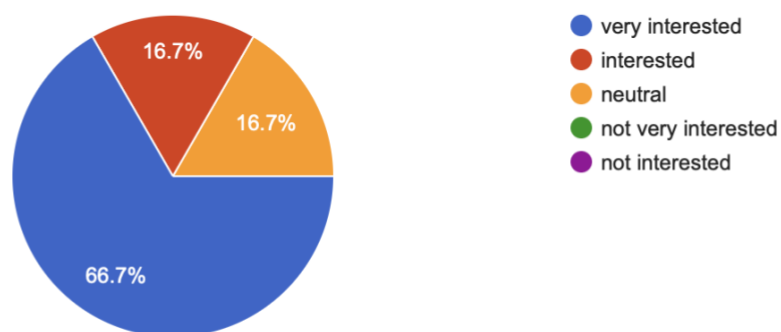
How effective do you think it would be to use an app that offers the ability to listen to
your favorite soundtracks and save them for later

6 ردود



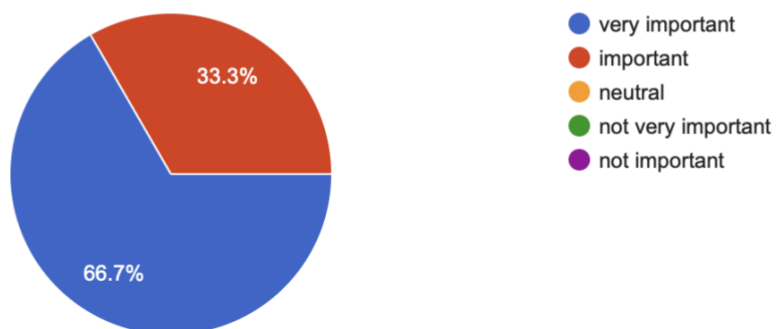
How interested would you be in using a game chatbot that responds to voice commands
while driving

6 ردود



How important is it for you to have a distraction-free design while using an app while
? driving such as asking Siri to play a soundtrack

6 ردود

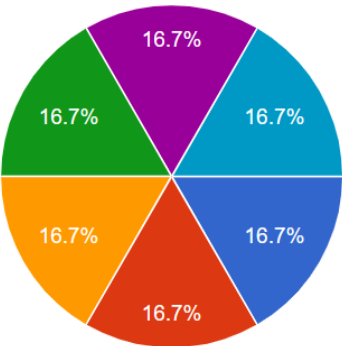


Appendix 6: Post-test questionnaire results



please choose the participant's number

12 ردًا

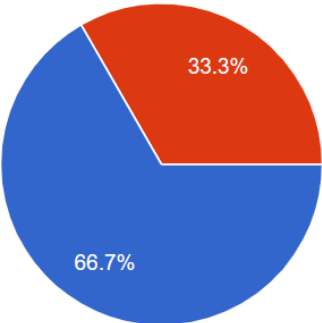


- 1
- 2
- 3
- 4
- 5
- 6



.1 I think I would like to use this tool frequently

12 ردًا

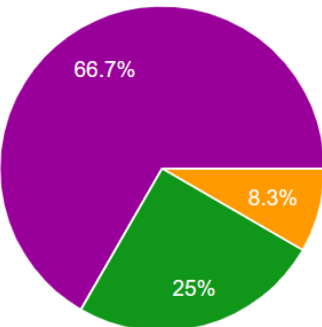


- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree



.2 I found the tool unnecessarily complex

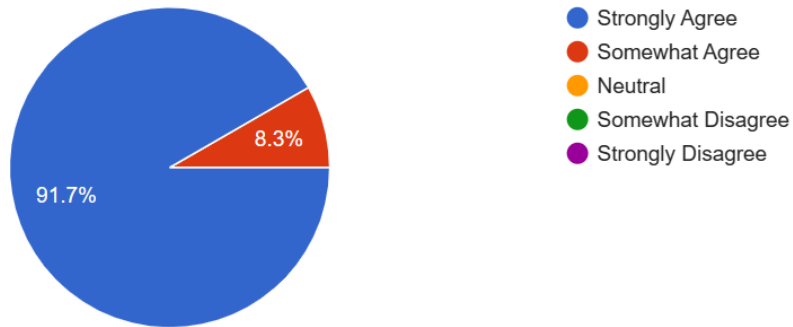
12 ردًا



- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

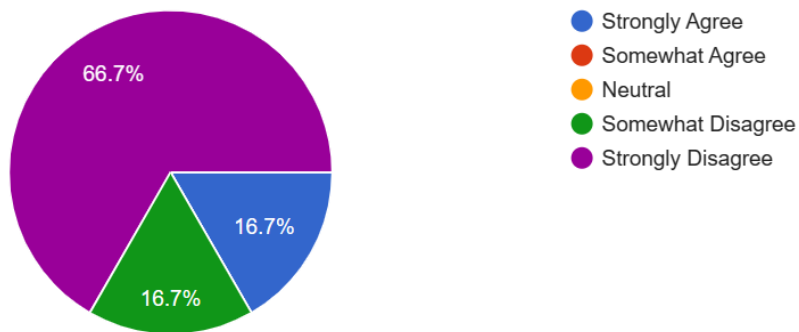
.3 I thought the tool was easy to use

12 ردًا



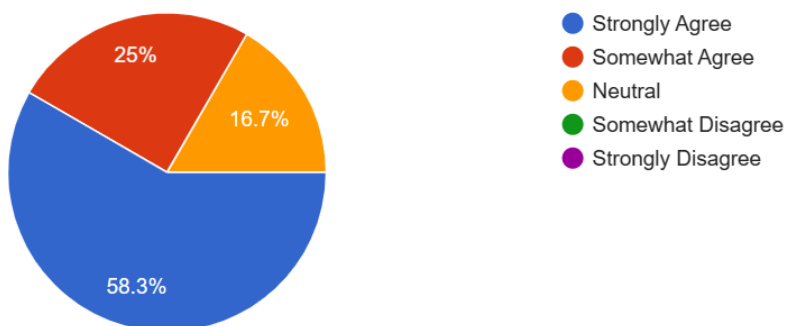
.4 I think that I would need the support of a technical person to be able to use this .system

12 ردًا



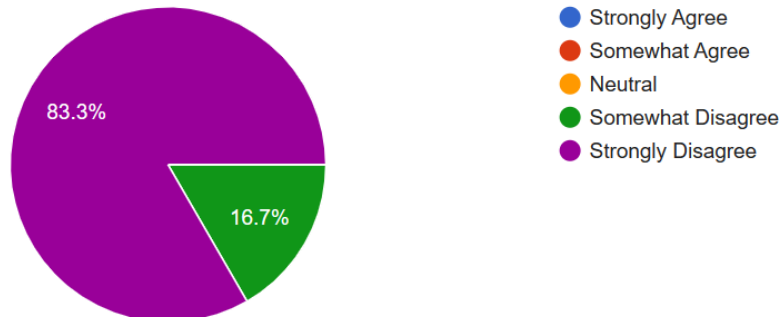
.5 I found the various functions in this tool were well integrated

12 ردًا



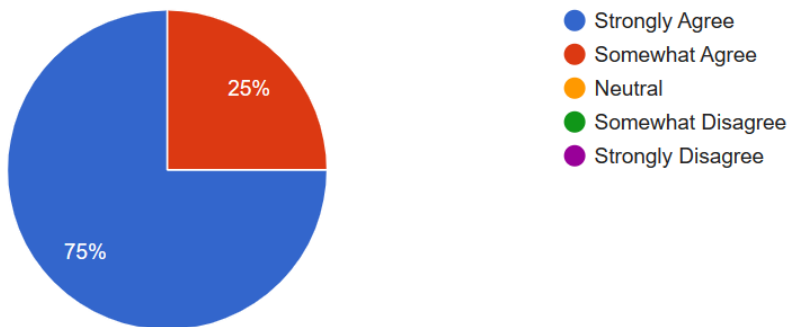
.6 .I thought there was too much inconsistency in this tool

12 ردًا



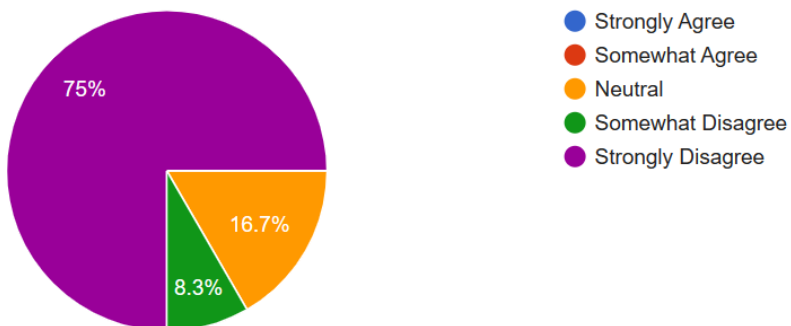
.7 .I would imagine that most people would learn to use this tool very quickly

12 ردًا



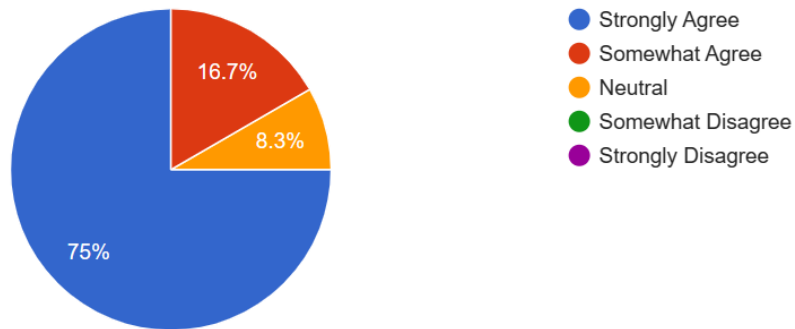
.8 .I found the tool very cumbersome to use

12 ردًا



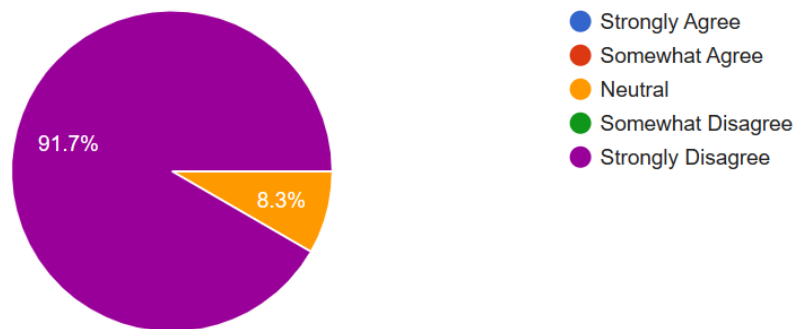
.I felt very confident using the tool .9

ردًا 12



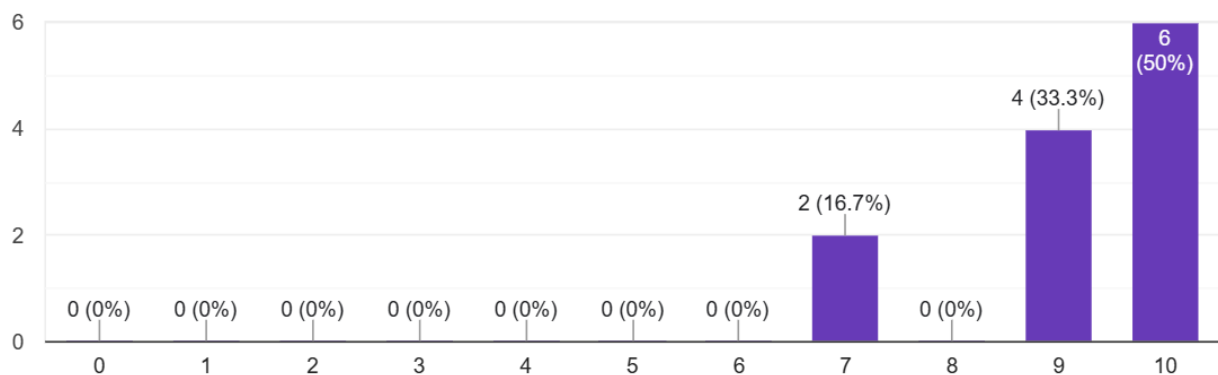
.I needed to learn a lot of things before I could get going with this tool .10

ردًا 12



?How likely are you to recommend this website to others .11

ردًا 12

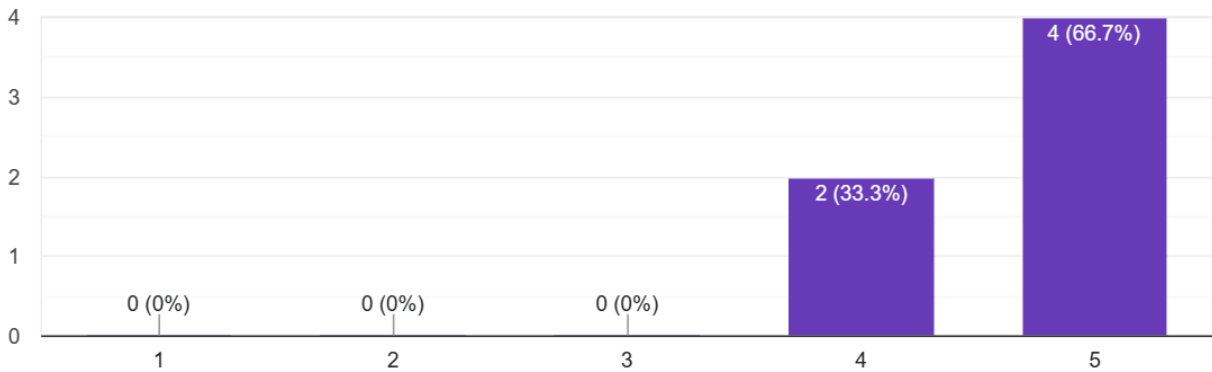


Appendix 7: user *satisfaction*



How would you rate satisfaction of using the system out of 5

ردود 6



Chapter 5

CONCLUSION

Based on YSR | يُسر that designed to solve the problem of traffic congestion boredom and provide an enjoyable experience for users, the following conclusions can be drawn:

- 1. Solving the problem of traffic boredom:** YSR | يُسر was designed to provide entertainment and enjoyment during periods of traffic congestion. It offers diverse content of songs and recitations of the Quran to users, helping them entertain themselves and alleviate feelings of boredom and frustration.
- 2. Multi-choice user experience:** Through the ability to search for their preferred content, users can choose what they want to listen to, whether it's songs or Quran. YSR | يُسر provides a flexible and multi-choice user experience, allowing individuals to customize their experience according to their personal interests.
- 3. Leveraging technology to solve everyday problems:** YSR | يُسر demonstrates the use of technology to provide solutions to everyday problems. By designing a downloadable application for mobile phones, users' access to their favorite content is facilitated, offering a seamless and convenient viewing and listening experience.
- 4. Enhancing comfort and relaxation:** YSR | يُسر aims to provide a relaxing and comfortable experience for users during periods of traffic congestion boredom. By listening to their favorite songs or Quran, individuals can reduce stress and relax while in the car.

In summary, YSR | يُسر works to provide an innovative solution to the problem of traffic congestion boredom by offering an entertaining and comfortable experience for users. It promotes relaxation and entertainment, allowing individuals to enjoy music and the Quran during their daily journeys, thereby improving their quality of life and overall experience.