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SEN3304

Human Computer Interaction Project

**Team Selena**

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| **Submitted by:** | **Ediz Özdil (Project Manager)** | **1906811** |
|  | **Çağatay Tuğcu** | **1903204** |
|  | **Güngör Parlak** | **1904463** |
|  | **Aslıhan Gök** | **1904390** |
|  | **Doğa Yıldız** | **1903558** |
|  | **Kaan Şahin** | **1904493** |

**Mehmed Arslan Aras 1902935**

**Doruk Üngör 1902978**

**Subject to: Assoc. Dr. Yücel Batu Salman**

**Project Topic: Transportation Portal Mobile Application**

**Project Scope:**

This project's objective is to assess and create an interface. The fundamental goal of this initiative, which is based on human computer interaction, is to take into account people's characteristics and make things simple for them. In this project, a frontend for the Transportation Portal website was created. Transportation Portal website mainly focused on that enables city residents and guests to learn more about a city’s transportation-related features. Aspects include details about available public transportation, schedules, costs, money-handling procedures, and other things (tutorial). The application may also offer current bus and other public transportation locations in real-time.

**c) Objectives And Sub-objectives**

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| Objectives | Sub-objectives |
| The application allows the user to choose the destination route by creating alternative transport routes. In this way, ensure customer satisfaction. | We create at least 3 routes. Among these routes, we show the closest distance first. |
| Increase comfort with the different modes on the website. | Provides different color choices for people with see or mobility impairments. |
| Satisfy users with the charge calculation system. | Filtering system to help the user find the route they can afford. |
| Provide an easy-to-use and functional interface. | Price is offered according to user’s pricing groups.  Provides options based on the user’s arrival or departure time.  Shows the starting and last trips of public transport. |
| Make sure that the users have a hassle-free experience. | Provide live support service to respond to the user’s problems.  Surveys are sent to users at certain time intervals to get feedback. |
| Makes recommendations to users. | Users are presented with a list of places to visit in the city.  It predicts which road may have less traffic on the road users selected. |

**d) User Needs And Observations**

A transport application should allow users to plan their journeys seamlessly, offering flexibility and control over their travel plans. Users expect information on various modes of transport, such as public transportation, ride sharing, car rentals, and rental services. They want a transparent and accurate method for calculating charges, accurate estimations, and user-friendly interfaces. They also expect real-time updates on delays, cancellations, and route changes, and personalized recommendations based on travel experiences, preferences, and interests.

**e) User Profiles, Personas And Scenarios**

**User Profile 1:**

**Name:** Seda

**Age:** 28

**Occupation:** Business Management

**City of Residence:** Istanbul

**Frequency of Public Transportation Usage:** Daily

**Persona 1:**

Seda is a young professional with a busy work schedule. She relies on public transportation to commute from home to work and vice versa in Istanbul every day. To avoid traffic congestion and parking issues, she prefers a combination of buses and metros. Seda uses the Selena app daily to travel quickly and efficiently. She needs access to up-to-date and real-time information such as current routes, transfer points, and estimated arrival times.

**Scenario 1:**

Every morning at 8:00, Seda leaves her house to go to work and opens the Selena app. The app shows Seda how to get to the nearest bus stop from her location and then directs her to the most convenient metro station. She manages to reach the metro station without missing the bus and later gets off at the metro station near her workplace. The Selena app continuously updates Seda with live directions and provides her with the expected arrival time, allowing her to arrive at work on time by being aware of traffic and public transportation changes.

**User Profile 2:**

**Name:** Kenan

**Age:** 42

**Occupation:** Teacher

**City of Residence:** Ankara

**Frequency of Public Transportation Usage:** Weekly

**Persona 2:**

Kenan is a high school teacher living in Ankara. He uses public transportation on a weekly basis as he mostly prefers his own car. However, he occasionally turns to the Selena app to avoid traffic congestion or parking issues. Kenan checks the app to verify the current bus and metro schedules and relies on real-time information to estimate travel times.

**Scenario 2:**

On Saturdays, Kenan uses the bus for shopping purposes. He opens the Selena app and checks the bus schedules heading to the nearby shopping mall. The app displays the closest bus stop and the relevant bus lines for him to use. Kenan keeps an eye on the estimated arrival time of the bus and determines the appropriate stop to get off. As a result, he arrives at the shopping mall smoothly and hassle-free.

**f) Task Analysis**

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**g) Low Accuracy Prototypes and Feedback**

We showed our low-quality prototype to 10 different people and asked them for their opinions.

Feedback on the prototype. Considering all the criticisms, we realized that

users basically mentioned 3 insufficient features.

● On the first page

● On the "transportation preference" page, users can see:

● page with information about transportation options

The first is from the first page. When asking which one to continue with,

it's just the letters on the buttons. So they demanded accessibility options in the home

The page is not easily understood by everyone.

The second feature has to do with your location and destination. the user can select exact points using the map. However, most users want detailed information about it.

address, so it is better to add a map under the contact information. the user must confirm the correct points on the map.

Another feedback we've received is giving users a choice of a few favorite destinations. we have embedded options in our prototypes that can be examples of this.

Another feedback is that they can choose their own means of transportation and see detailed details about the destination. We have created a separate page for this.

They can see the hours and the map in detail.

Our last feedback is about membership, here accurate and precise information is very important for user safety.

More detailed information in this area.

Below are some low quality prototypes of the website:

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**h) Software Based Prototypes**

**Home Screen,**

**A screenshot of a map

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**With magnifier option,**

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**In light mode,**

**A screenshot of a website

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**Sign-in page,**

**A screenshot of a computer screen

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**Profile page,**

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**Vehicles Page,**

A map of buses and buses

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**Vehicle Details,**

A screenshot of a bus route

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**Popular Routes Page,**

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**Location Page,**

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**Route Page,**

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**Live Contact Page,**

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**Contact Us Page,**

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**i) Details About The Prototype**

In line with all the criticism and feedback we received, we made additions to the interface of our site. It allows us to make a high accuracy prototype according to the project we are redesigning.

First, a large search box welcomes us on the home page of our site. We can search for the address or place we want by typing or by clicking the microphone button next to the search box, by speaking through the microphone of the device we use. With the live contact button at the bottom right, we instantly answer users' problems or confusing questions. With the moon sign in the upper left, we can put our site in dark mode when we are uncomfortable with the light or when our eyes are tired. In dark mode, the colors are reflected on the screen in a darker and easier way.

In addition, there are 5 buttons at the top of the screen that welcome us. These buttons are "Home", "Profile", "Popular Routes", "Vehicles" and "Contact Us". We can navigate between pages with these buttons. Finally, you can register to our site with the Log In and Sign Up buttons on the top right of the screen, then log in and personalize your information. In this way, we can offer you a more specific and special way of use. Finally, when we enter a location and search, we will see various routes with various transportation vehicles and we will choose one or more of them and start getting directions.

Here are the details and techniques of our prototype in general.

metin, ekran görüntüsü, yazı tipi, harita içeren bir resim

Açıklama otomatik olarak oluşturuldu

**j) Evaluation Procedure**

For the evaluation of my interactive public transportation application, we plan to employ a combination of qualitative and quantitative methods. First, We will conduct an online survey to gain feedback from users about their experience with the application. The survey will include both open-ended questions and multiple choice questions that assess user satisfaction, usability, and accessibility.

Next, We will use lab-based usability testing to determine how users interact with the interface, as well as any problems they encounter. We will also ask participants to complete a variety of tasks while providing feedback on their experience. For example can you go to Beşiktaş via recommended transportation given by application. To increase the validity of our results, We plan to use both experienced and inexperienced users for these tests.

Finally, We will conduct an online A/B test to compare two versions of the application. The test will involve randomly assigning users to view different versions of the interface and then measuring their satisfaction levels with each version. This will help us identify which version is more effective for our target audience.

By using a variety of evaluation techniques, we can gain valuable insights into how people interact with our public transportation application and make adjustments as needed in order to provide the best possible experience for our users.

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| Nielsen’s Heuristics | Problem Description | Severity | Solution |
| Visibility of System Status | feedback to users in order to keep them informed about the actions they have taken and the state of their application. | Major | providing visual cues to indicate progress, clear labels that indicate states, and data that can be referenced in the interface. |
| Match between System and Real World | enabling users to understand the application by relating it to their own familiar experiences or context so that they feel comfortable using it. | Major | concepts being presented in a way that is consistent with real-world terminology, metaphors, and symbols; and allowing user actions to be consistent with their mental models. |
| User Control and Freedom | users the opportunity to make mistakes, undo them, and learn from them without negative consequences. | Major | providing an effective "undo" or "redo" functionality; allowing users to customize settings; and offering a clear exit strategy for ending tasks quickly and safely. |

**References:**

1-) <https://aese.psu.edu/research/centers/cecd/engagement-toolbox/evaluating-engagement-efforts/evaluation-phases-and-processes#:~:text=In%20general%2C%20evaluation%20processes%20go,in%20your%20program%20or%20intervention>

2-) <https://www.userspots.com/rehber/kullanilabilirlik-testi-nasil-yapilir#kullanilabilirlik_testi_nasil_yapilir>

3-) <https://www.canva.com>

4-) <https://www.nngroup.com/articles/ten-usability-heuristics/>