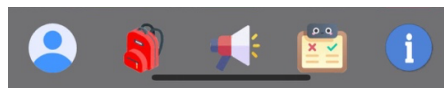


## Game Info

Gezdir is an engaging mobile game developed by EYESOFT that combines fun and learning. The game starts by requesting the user to download 3.99 MB of additional resources post-registration, followed by a prompt for GPS access. As can be seen from Figure 1, on the game's main screen, there are four key sections: the profile, backpack, announcements, and game rules.



*Figure 1. Gezdir App Menu Bar*

To acquire diverse gift packages, players must physically move to various spots on the campus. The Gezdir App includes a "backpack" function that displays all the items players have gathered in a specific location, allowing them to track their progress in the game. This feature enriches the gaming experience by encouraging players to enlarge their collections and gather more items, thereby increasing their engagement with the game. The backpack section displays items collected during gameplay, including Hearts (Eyesoft\_Kalp), Teddy Bears (Ayıcık), Apple (Elma), and question marks (Bil Bakalım) objectives.

In the profile section, users can find their personal information, options for password changes, account deletion, and language of the application. The announcements section keeps users updated with game news – during my testing, there were messages welcoming users and wishing good days to them. The game rules section provides information on the terms of use, gameplay rules, and personal data protection laws. Players uncover the objects inside the gift packets by physically moving around Sabanci University and approaching these packets. To successfully discover an object, players need to walk through the campus, aiming to bring the

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gift packets within their Zone Circle. I tested the game at Sabanci University, where items were randomly scattered on the map within a specified radius, likely determined using GPS data. As I gathered items, my score increased. Collecting question marks triggered trivia questions, either true/false or multiple-choice. My gameplay session lasted around an hour, with most of the time spent navigating the interface and the rest actively scoring points. I ended up with 58 points by collecting objects: 32 Eyesoft\_Kalp, 14 Teddy Bears, and 12 Question Marks. The point distribution seemed random, and soon I found myself exploring the campus more than focusing on the score. The results of my experience are depicted in Figure 2.

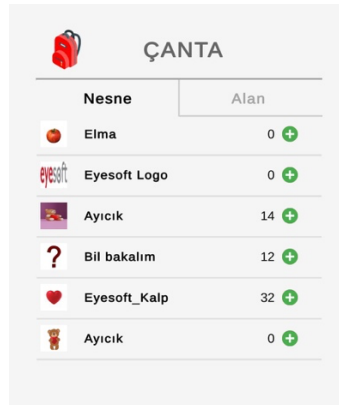


Figure 2. Gezdir App Collected Objects

## Heuristics Evaluation

Heuristics	Explanation of the Problems Add related visuals of problems from screenshots	Propose Solution(s)	Seriousness of each problem (Low, Middle, High)
Visibility of system status	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <p>1- Some of the icons (Eyesoft_Kalp, teddy bears, etc.) cannot be collected. Even though being in the available area, attempts to click on icons such as Heart and teddy bears were unsuccessful.</p>	<p>1- There should be an informative text, a fast feedback for the users. This text should indicate that the icons cannot be collected due to an system issue, so that confusion of users can be prevented.</p> <p>2- The score board should be located considering both the IOS and Android users. The positioning of it should fit all mobile phones.</p>	<p>1- High</p> <p>2- High</p> <p>3- Middle</p>

	<p>2- For the iPhone users, the score board on the top of the screen is not fully visible.</p> <p>3- In the login screen, users cannot see what they are typing while writing passwords due to the positioning of the keyboard.</p>	<p>3- It would be better for users to see everything they are typing. Keyboard should be located in the screen accordingly.</p>	
Match between system and the real world.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <p>1- There is no prior information explaining the meaning of some of the collected icons (such as Eyesoft_Kalp, and Teddy Bear). Users are not able to make an importance ranking because the system is not speaking the users' language.</p> <p>2- For the Game Rules icon, users may not be able to make a connection between the icon and its meaning (game rules). Because the icon used for Game Rules do not evoke "game rules".</p>	<p>1- In addition to the information provided to users when opening the application, explaining how to play the game, it would be better if there is also information explaining the significance of different types of objects. Another improvement could be making the naming of the objects familiar to users' (such as stars) so that they can understand the importance.</p> <p>2- Instead of using an icon that looks like a check-list, it would be better if there is a well-known icon with global meaning of "game rules".</p>	<p>1- High</p> <p>2- Medium</p>
User control and freedom.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <p>1- Users are not able to scroll the screen to see where the objects are in a broader perspective. Its possible to zoom the screen but scrolling is not provided.</p> <p>2- For the questions, there is not a button to confirm the submission of the answer. The answer is automatically submitted after clicking on the answer (both for multiple choice and T/F questions.).</p>	<p>1- Users should be able to scroll, drag the screen in order to look at the game and the collectable objects in a broader perspective.</p> <p>2- It would be better for users if there is a "submit" button at the end of the questions (both for the multiple choice, and T/F.) This would improve users' score.</p>	<p>1- High</p> <p>2- High</p>
Consistency and standards.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <p>1- While applying the two-pass evaluation, I realized that the 'back' button is positioned differently in the Profile section (compared to other menu bar screens). The 'back' button was inconsistently placed in the Profile section compared to other menu screens. In the Profile section, it's located higher, with 'delete account' and 'log out' buttons at the bottom.</p> <p>2- Even though I chose Turkish as the language of the Gezdir application, there are consistency issues for the language. For example, in the Program screen there are buttons written in English (Prev and Next).</p>	<p>1- Standardizing the 'back' button's placement across all screens would improve user experience and prevent confusion. The Profile section needs redesigning for consistency and appeal.</p> <p>2- The chosen language (English or Turkish) should be used consistently in each section. If the user chose Turkish, the Prev and Next buttons should be 'Geri' and 'Sonraki'.</p>	<p>1- High</p> <p>2- Medium</p>

Error prevention.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <ol style="list-style-type: none"> <li>1- In the Profile screen, the positioning of buttons such as 'Delete Account' and 'Log Out' may cause user errors.</li> <li>2- The lack of submit button in the questions (both the multiple choice and T/F) may cause user errors. After clicking one of the answers, users may want to change before submitting their final answer.</li> <li>3- Due to the positioning of the buttons in the Profile section, users may mistakenly click on 'Log Out' button. The application does not prevent this mistaken action and directs users to login screen.</li> </ol>	<ol style="list-style-type: none"> <li>1- The positioning of the buttons should be carefully arranged. Also, it would be better for users if 'Delete Account' and 'Log Out' buttons are highlighted using a different color.</li> <li>2- There should be a Submit button in the question screen, so that users can change their answer if they click on a choice wrongly.</li> <li>3- There should be an informative message after clicking 'Log Out' button indicating whether or not user is sure to log out.</li> </ol>	<ol style="list-style-type: none"> <li>1- High</li> <li>2- Medium</li> <li>3- Medium</li> </ol>
Recognition rather than recall.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <ol style="list-style-type: none"> <li>1- The menu bar icons, especially the one for the Game Rules, do not have a global meaning. For example the user should remember (recall) the Game Rules icon (the one that looks like a check-list) is for Game Rules.</li> <li>2- There are icons such as Heart, and Teddy Bear that users has to recall the meaning every time because those icons do not evoke any meaning to users, which is not the case for the Question Mark icon.</li> </ol>	<ol style="list-style-type: none"> <li>1- The menu bar icons should be more recognizable for users. Instead of using a check-list icon for the 'Game Rules' section, or a backpack icon showing the collected items, it would be better for users to use a dashboard which displays sections by naming.</li> <li>2- Just like the Question Mark icon, which is good for recognition as it is connected to its property, using familiar icons instead of Heart and Teddy Bear would be better for users recognition.</li> </ol>	<ol style="list-style-type: none"> <li>1- Medium</li> <li>2- Medium</li> </ol>
Flexibility and efficiency of use.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <ol style="list-style-type: none"> <li>1- When users are in an area full of collectable objects, they have to click on the icons one by one, which is not efficient at all.</li> <li>2- Every time opening the application, there is a section including 3 different pages explaining the game rules. Users can only pass those pages by clicking on the Next button 3 times.</li> </ol>	<ol style="list-style-type: none"> <li>1- It would be more efficient for users to provide an option to collect all the objects in the available area, instead of clicking on multiple icons one by one.</li> <li>2- It would be more efficient to provide a Skip button for the advanced users who already informed about the game rules.</li> </ol>	<ol style="list-style-type: none"> <li>1- Low</li> <li>2- Low</li> </ol>
Aesthetic and minimalist design.	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p>	<ol style="list-style-type: none"> <li>1- The map should have higher resolution in order to make the game look more professional.</li> <li>2- The circular shape should be more minimalist and less prominent. It would be</li> </ol>	<ol style="list-style-type: none"> <li>1- High</li> <li>2- Medium</li> <li>3- Medium</li> <li>4- Medium</li> </ol>

	<ol style="list-style-type: none"> <li>1- The map do not have a high resolution and especially when zooming.</li> <li>2- The circular shape showing the area of collectable objects is not aesthetic due to its thickness and color.</li> <li>3- The names of the roads, buildings, etc. do not fit the area due to the font.</li> <li>4- The icons chosen both for the menu bar and for the collectable objects are not aesthetic.</li> </ol>	<ol style="list-style-type: none"> <li>3- The font should be arranged according to the size of the roads, buildings, etc. so that they texts do not extend beyond the area.</li> <li>4- Using a written dashboard instead of a menu bar full of incomprehensible icons would ensure an aesthetic design. Also The icons chosen for the collectable objects should be more minimalist.</li> </ol>	
Help users recognize, diagnose, and recover from errors	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <ol style="list-style-type: none"> <li>1- There is not any error message for the objects that are not collectable even though they are in the available zone.</li> <li>2- When opening the application and the game is loading, there is no message that clearly indicates the game is loading.</li> </ol>	<ol style="list-style-type: none"> <li>1- To prevent user confusion, there should be a message stating, 'Due to a system error, this object cannot be collected', so that users do not repeatedly click on the same object.</li> <li>2- Instead of displaying a low-resolution loading icon, there should be a message stating 'Game is loading, please wait'.</li> </ol>	<ol style="list-style-type: none"> <li>1- High</li> <li>2- Medium</li> </ol>
Help and documentation	<p>After conducting the two-pass evaluation activity (first screen-by-screen, second for the inter-screen flow):</p> <ol style="list-style-type: none"> <li>1- The help and documentation are presented as lengthy bullet points instead of briefly explaining user tasks. Additionally, unrelated information, such as 'Terms of Use' and 'Protection of Personal Data Law', is included in the same section.</li> <li>2- The documentation is located in a separate section, causing interruptions while playing the game.</li> </ol>	<ol style="list-style-type: none"> <li>1- The help and documentation should be written in a more direct and concise manner, enabling users to quickly understand the rules upon reading this section. Sections like 'Terms of Use' and 'Protection of Personal Data Law' should be placed on a different page.</li> <li>2- To allow users easy and uninterrupted access to the help and documentation, it could be integrated into the game screen. Users could open this section by clicking on an appropriate icon at the top of the game page.</li> </ol>	<ol style="list-style-type: none"> <li>1- Medium</li> <li>2- Low</li> </ol>

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