

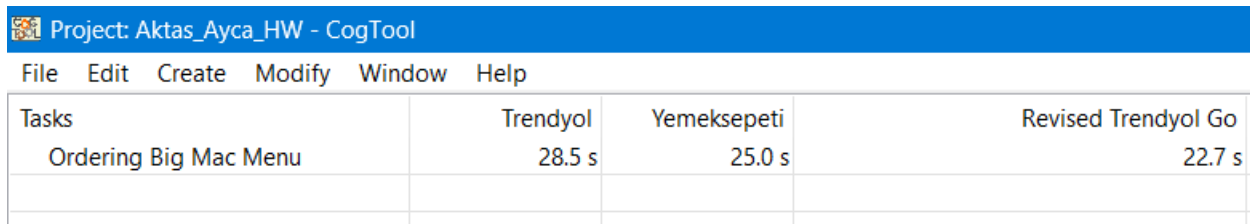
## Assignment-3 Cognitive Modeling in HCI

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In the food delivery industry, mobile application performance and efficiency have a substantial impact on user experience and business consequences. This report provides a comparative analysis of Yemeksepeti and Trendyol, two major food ordering applications, with an emphasis on task simulation durations for purchasing the "Big Mac menu." The purpose is to identify the underlying causes that contribute to differences in response times when doing identical purchasing operations on these platforms. The analysis was carried out with CogTool, a user interface prototyping and cognitive modeling tool. CogTool simulates human interactions with interfaces to estimate task completion durations. Using the screenshots provided, this study modeled particular tasks that are reflective of normal user activity on each platform. The simulations were designed to imitate a user ordering a "Big Mac menu" from each application.

### 1. Which shopping procedure is faster, **Yemeksepeti** or **Trendyol Go**?

- Yemeksepeti Simulation Time: 25.0 seconds
- Trendyol Go Simulation Time: 28.5 seconds



The screenshot shows the CogTool interface with a project titled 'Project: Aktas\_Ayca\_HW - CogTool'. Below the title bar is a menu bar with 'File', 'Edit', 'Create', 'Modify', 'Window', and 'Help'. A table displays simulation results for the task 'Ordering Big Mac Menu'.

Tasks	Trendyol	Yemeksepeti	Revised Trendyol Go
Ordering Big Mac Menu	28.5 s	25.0 s	22.7 s

Figure 1: Time predictions given by the CogTool for different designs

- Yemeksepeti turned out to be faster as shown in Figure 1.

### 2. Why is the faster procedure faster?

There are number of reasons why Yemeksepeti turned out to be a faster simulation. One of them is that Yemeksepeti's interface potentially facilitated a more efficient visual search, enabling users to locate menu options faster. According to Benyon, "Visual search, researched extensively by psychologists and ergonomists, refers to our ability to locate particular items in a visual scene" [1]. He also states that, visualization is concerned with 'amplifying cognition'. It achieves this through reducing the search for information [2]. Yemeksepeti achieves this goal of reducing visual search by placing the options in front of the user with Radio Button. In contrast Trendyol Go application makes user to look for options iteratively.

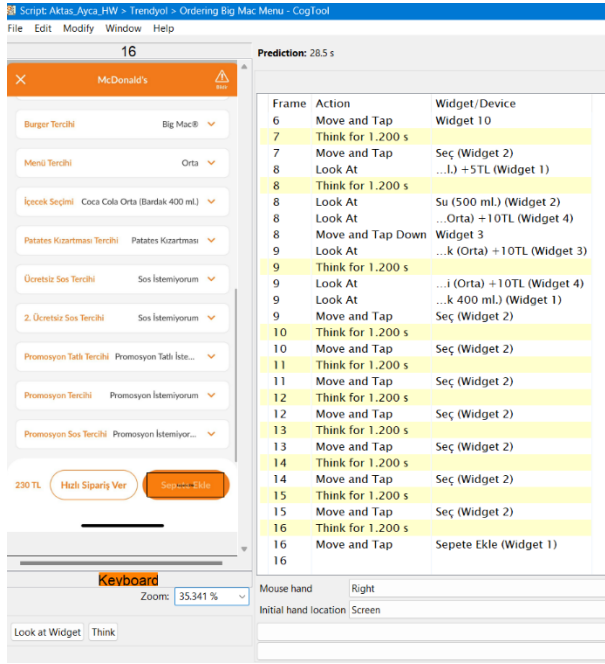


Figure 2: The script for Trendyol Go

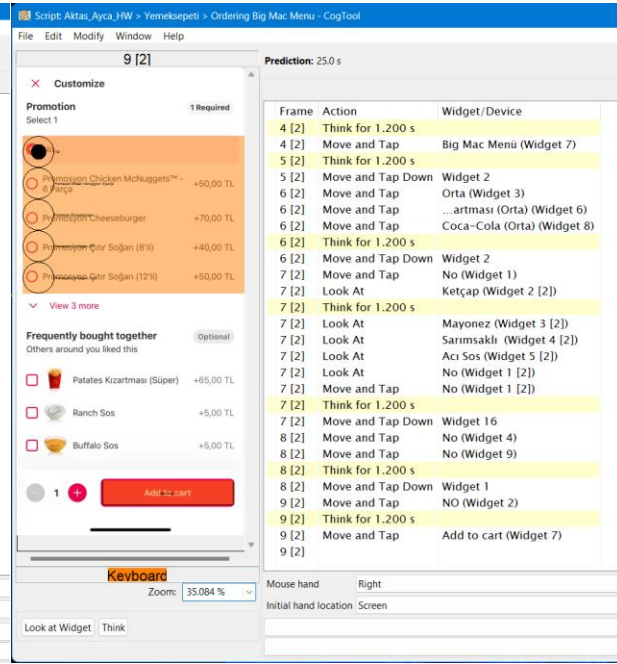


Figure 3: The script for Yemeksepeti

Yemeksepeti skillfully simplifies the visual search process by utilizing radio buttons to highlight possibilities so that consumers can quickly discover and choose what they want with the least amount of work. The time between decision and action is shortened by this user-centric design, which enables instantaneous engagement. On the other hand, the Trendyol Go program utilizes a more sequential method of choice selection, requiring users to search through and pick the options they want to use repeatedly. Because there are more steps involved in navigating through the options, this strategy naturally lengthens the user's engagement. This can be seen by the script that CogTool provides by the simulated action of the user. In the sequence displayed by the CogTool script for Yemeksepeti, the user's actions mostly consist of 'Move and Tap' on the clearly provided widgets. This implies that the user is presented with the possibilities, most commonly through the use of radio buttons or another direct-selection-enabling tool. The lack of repetitive 'Look At' stages between options suggests that the user can go seamlessly from one decision to the next because the next interaction point is already in their range of vision and probably grouped with the previous option. In contrast the script in the Trendyol Go program exhibits a recurring pattern of 'Look At,' 'Think,' and 'Move and Tap' during the interaction. This pattern implies that the user needs to search for the next option, consider their options, and then proceed to interact with it after making each selection. It indicates a more scattered design. The user must access each option individually in this drop-down menu style, which results in a repetitive search procedure. The user's cognitive load and task time are increased by having to locate each consecutive option since they have to connect the dots between the interface and what they are looking for.

### **3. How can you make the slower procedure faster? How much time can a user save with this change? Show it by modeling the revised one with CogTool.**

In order to improve ordering speed within the Trendyol Go app, a hybrid strategy combining Yemeksepeti's fast menu options selection with Trendyol's effective search feature might be used. The "Big Mac menu" is quickly shown to the user using Trendyol Go's search feature, saving them the extra step of having to browse through different restaurants. The time it takes a user to access the relevant product page can be greatly decreased with this straightforward solution. Yemeksepeti uses radio buttons instead of menu selections, which simplifies the process by lowering cognitive load and visual search time because all possibilities are shown simultaneously and are simple to compare and choose from. When these two features are combined, users can benefit from Trendyol Go's quick search results that display the desired menu right away and Yemeksepeti's radio button format also makes it easier to select items like size and side orders, reflecting the user's speedy decision-making process. This synthesis produces a more efficient ordering process that makes use of both applications' advantages. The improved Trendyol Go process would see a decrease in task completion time from the initial 28.5 seconds to 22.7 seconds, as shown in Figure 1, according to the CogTool simulation. This suggests that efficiency has significantly increased, allowing users to finish their orders faster and with less effort.

### **4. References**

- [1] Benyon D., (2019). Chapter 12 - Visual interface design. DESIGNING USER EXPERIENCE: A guide
- [2] Benyon D., (2019). Chapter 21 - Memory and attention. DESIGNING USER EXPERIENCE: A guide to HCI, UX and interaction design. UK: Pearson