1. **Introduction**

In this assignment, we are tasked with identifying and analyzing a design problem in an interactive desktop application, which can be measured using **Fitts's Law**. The chosen task is from Zara’s desktop website, where users adjust the quantity of items in their shopping cart and proceed to the checkout process. Specifically, the design flaw stems from the large distance between the quantity adjustment buttons and the "Continue" button located at the bottom-right corner of the screen.

**Problem Definition**

The main issue is the significant cursor movement required for users to perform these essential tasks. The large distance between the quantity controls and the "Continue" button increases the difficulty and time taken to complete the interaction, as explained by Fitts's Law, which posits that the time required to reach a target is a function of the distance to the target and its size. Here, the long distance and relatively small size of the "Continue" button result in a high Index of Difficulty (ID), thereby degrading user performance and efficiency. Since adjusting quantities and proceeding to checkout are fundamental tasks, they should be designed for speed and ease.

**metin, ekran görüntüsü içeren bir resim

Açıklama otomatik olarak oluşturuldu**

1. **Analysis with Fitts’s Law**

Fitts’s Law is mathematically expressed as: (Yablonski, 2024)

Index of Difficulty (ID) **= Log2 (2D / W)** Where:

**ID** = Index of Difficulty (how hard it is to move to the target)

**D** = Distance to the target (measured in pixels or cm) 🡪 For the analysis: **D** = The distance between the quantity buttons and the "Continue" button (measured on the screen).

**W** = Width of the target (measured in pixels or cm) 🡪 For the analysis: **W** = The size (width) of the "Continue" button.

* Using the image provided, we measure the distance between the "+" and "-" buttons and the "Continue" button as approximately **26 cm**. **(D = 26 cm)**
* The width of the "Continue" button is approximately **3,5 cm**. **(W = 3,5 cm)**
* Now, using these values in Fitts’s Law: **ID = Log2 (2\*26/3,5) = Log2 (14,85) = 3,89**

This result suggests a moderate level of difficulty for this interaction, where the large distance between the targets is the primary contributor to the difficulty.

**Integration of Norman's Principles**

Norman’s principles, such as "Minimize the Gulf of Execution" and "Provide Feedback," are directly relevant here. The current design has a significant "gulf of execution," where users struggle to perform an action (moving the cursor across a long distance) that could be made simpler. Additionally, the small "Continue" button does not afford easy clicking, thereby reducing discoverability and ease of use. (Norman, 2013, p. 41- 42)

**Applying Shneiderman's Principles**

Shneiderman’s "Eight Golden Rules of Interface Design" emphasize the importance of "Striving for Consistency," "Enabling Frequent Users to Use Shortcuts," and "Reducing Short-Term Memory Load." The proposed redesign aligns with these principles:

**Consistency** is improved by keeping related elements close together, making interactions more predictable. **Frequent actions**, like adjusting quantities and proceeding to checkout, become quicker with reduced cursor travel distance, thus catering to experienced users. **Memory load** is minimized by logically grouping controls, allowing users to find and use them without excessive cognitive effort. (Shneiderman et al., 2018, p. 95-97).

1. **Proposed Solution**

The current Zara shopping cart design has a significant usability issue. The "Continue" button is placed far from the quantity adjustment controls, which creates an inefficient user experience.

To address this, we propose the following improvements: **1.** Move the "Continue" button closer to the quantity controls. **2**. Make the button bigger and easier to click. **3.** Keep everything important in one area of the screen.

Proposed design: **D = 4 cm, W = 3,5 cm** andID = **Log2(2\*4/3,5) = Log2(2,28) = 1,19**

We've created a redesigned version of the cart page that implements these changes. In the new layout, the "Continue" button is positioned directly below the product details and quantity adjustments. This significantly reduces the distance users need to move their cursor between actions.

**The redesigned cart offers several benefits:** Less mouse movement needed (shorter distance), Bigger target to click (wider button), Everything's grouped logically.

These changes should result in a more streamlined shopping experience, potentially increasing user satisfaction and conversion rates. The improved version designed in Figma is [**HERE**](https://www.figma.com/design/MScJvKE1yaVZRPDNZw7s3l/Assignment2_Zara-Shopping-Basket-Redesign?node-id=0-1&t=kpcWCoGbHi8EoVMj-1)**.**

1. **References**

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