Final Project Write-Up

My project is a tutorial on how to customize your Safari start page by adding a background image. The steps of the tutorial are essential information, so they increase our amount of **Intrinsic cognitive load**. Intrinsic cognitive load is the mental effort being used in our **working memory** for essential content. Working memory is our short-term memory.

Miller's Law says the average person can only store 7 (give or take 2) items in their working memory. I took advantage of this principle by keeping my tutorial to six steps so that users can remember the process smoothly. They just remember six steps which is less cognitive load for the user.

Tesler's Law says applications have an inherent amount of complexity we can't get rid of. We just have to deal with it and chunking is a way to deal with it. **Chunking** is dividing information into smaller groups. I chunked the process of changing your background by dividing it into a few steps on different pages. This is good for dealing with intrinsic cognitive load. Chunking also helps us process things into our **long-term memory.** Our long-term memory is subconscious and doesn't have a limited capacity like short term memory does.

The **Law of Proximity** says we usually perceive objects near each other as a group. I took advantage of this when I created my progress bar by making the circles close to each other, so they'd seem like a group. I also took advantage of the law of proximity on each step page because the text and graphics are close to each other, so you know they're related.

The **Von Restorff Effect** says that when looking at multiple similar items the item that is different is more likely to be remembered. I considered this effect when I was typing my body text. I changed the color of the important information to orange while the text around it is black, so it is remembered.

The **Zeigarnik Effect** says people tend to remember uncompleted task better than completed task. To take advantage of this I added a progress bar at the bottom. The progress bar shows the user that they aren't complete and how many steps they have left.

The **Serial Position Effect** says people tend to remember the first and last items in a series best. To take advantage of this I have the list of steps at the beginning and end of the tutorial as an overview and review page.

Fitts's Law states the distance and size of a target correlates to the time it takes to acquire the target. This means small buttons are more difficult and take longer to click. To take advantage of this law I ensured users would not have to scroll to click buttons. I also ensured my buttons were large enough for users to easily acquire the target. **Hick's Law** states that the time it takes to make a decision increases with the amount of choices and complexity of choices. That's why the tutorial only has two choices for customizing your Safari start page.

Jakob's Law says users would rather your site work like the other ones they know. This is why I adhered to conventions like having a navigation bar at the top of the screen with the home button in the top-left corner and having pagination at the bottom of the screen. By matching what users already know, users can focus on the task rather than learning how to use the site.

The **Coherence Principle** says people learn better without extraneous material. To adhere to the Coherence Principle, I didn't include any unnecessary or unhelpful details. By getting rid of extraneous material **Extraneous Cognitive Load** is reduced. Extraneous Cognitive Load is the effort being used in the working memory for non-essential and meaningless content.

The **Signaling Principle** states that people learn better when there are cues that highlight the organization of essential material. I applied this principle by having an overview page that shows how the tutorial is organized. I also made the headings bold and larger than the body text, and I highlighted the important part of body text in orange.

The **Multimedia Principle** states that people learn better when there are words and pictures rather than just words only. That's why I have screenshots of the task with text alongside them explaining what to do. **Germane Cognitive Load** Is the effort in our working memory for non-essential but helpful content. Adding graphics is not necessary, but it enhances users' Germane Cognitive Load. The **Spatial Contiguity Principle** says students learn better when corresponding words and pictures are close to each other rather than far. That is why my text is on top of or very close to the screenshot, to have it integrated rather than separated.