IT351 HUMAN COMPUTER INTERACTION
Assignment – 2: Hick Hyman's Law
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Introduction:
Hick's Law predicts the time it takes to make a decision in selecting among possible choices. The Hick-Hyman Law measures cognitive information capacity.

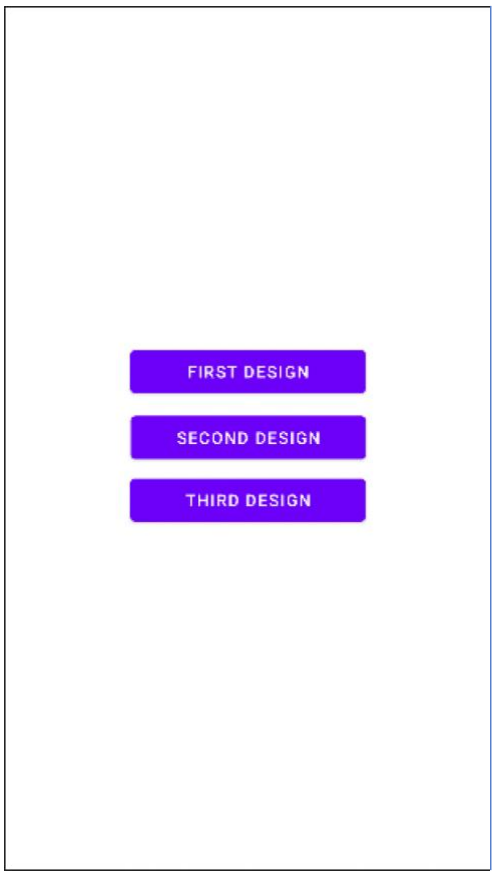
Given n equally probable choices, the average reaction time T required to choose among them is approximately:

$T = b.\log_2(n+1)$

The reaction time curve is logarithmic because for quick search we divide choices into categories, skipping half of choices at each step instead of considering each choice one-by-one.

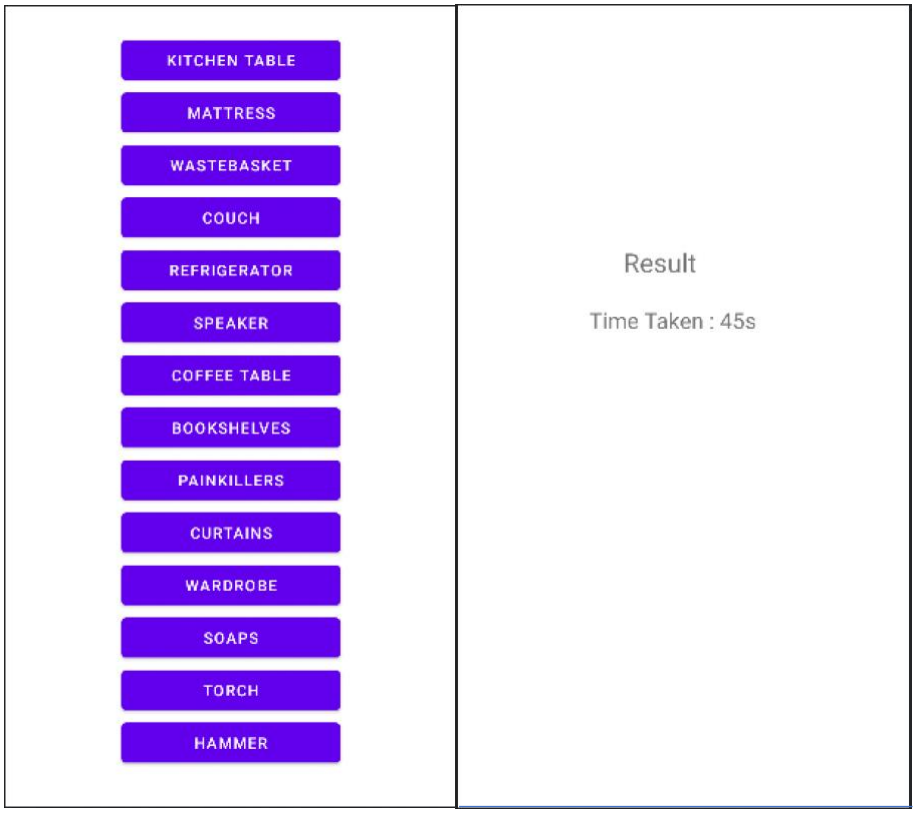
Method:

Home page:



First Design:

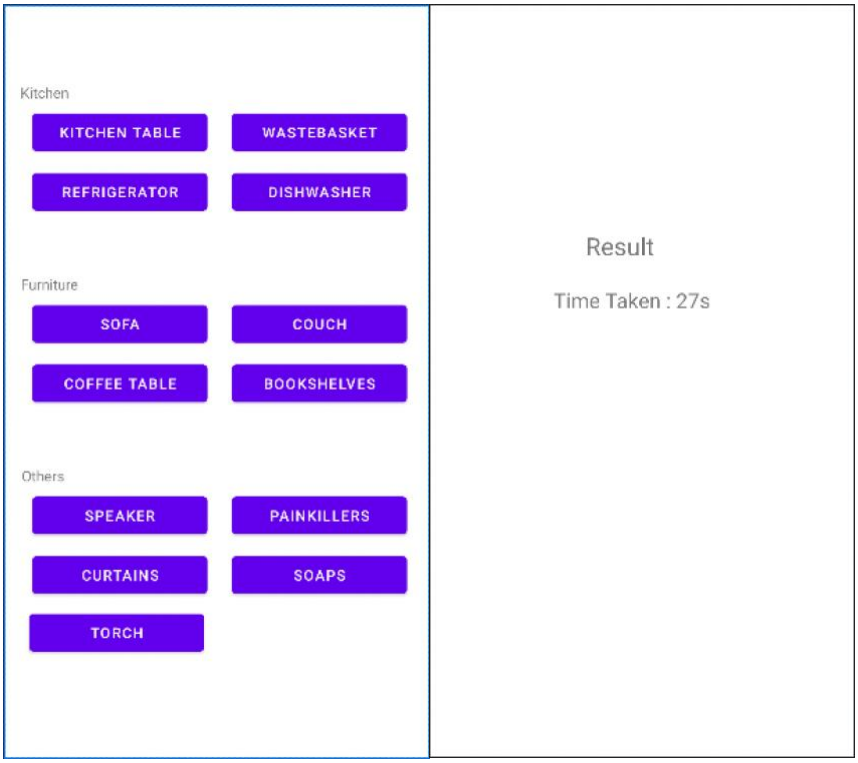
Below is the basic design implementation of the problem statement. On clicking the first design button an alert window is appeared that shows the list of 8 household items for a user to select.



The alert window is displayed which the user can read and do the tasks. After clicking on ok in alert a window displays all the element the mall offers for a household and the user needs to select all the 8 items and his time is notes. Time is shown in the result screen.

Second Design:

Below is the basic design implementation of the problem statement. On clicking the second design button an alert window is appeared that shows the list of 8 items for a user to select.



The alert is displayed which the user can read and do the tasks. After clicking on ok in alert a window displays all the elements the mall offers for a household and the user needs to select all the 8 items and his time is noted.
To improve the reaction time the menu is classified into groups into which items belong to. Here we can see good improvement in reaction time just by changing a few things.

Third Design:
Below is the basic design implementation of the problem statement. On clicking the third design button an alert is displayed that shows the list of 8 items for a user to select.

After clicking on ok in alert a window displays all the elements the mall offers for a household and the user needs to select all the 8 items and his time is noted. Here to improve the reaction time the menu is classified into more sections with navbar to choose quickly.
Also, we can go back to see tasks which are in different colours to spot, also for miscellaneous products we have a different shade to make look up easy.

Analysis:

In the First Design it was difficult for the user to find items as the menu was cluttered and there was no separation of items, hence it took a lot of time for the user to find all the elements.

In the Second Design it was a lot easier for the user to find the items as there were categories the user could investigate where the probability of finding items will be highest.

In the Third Design there were definite links that took the user to exclusive items belonging to a category and also there were more sections hence easier for the user to narrow down his item.

The above experiment is based on Hick Hyman's Law of designing user interfaces. Hick's Law is applicable to menu design. It helps in designing menu hierarchy and depth. When we have too many choices, we need to cognitively categorize items to reduce the time taken to select an item at any stage. The logarithmic function of Hick's Law decides the depth of hierarchy of the menu tree.

Conclusions

We can conclude that the Hick's law is pivotal in designing an efficient, and appealing User Interface. To ensure fast movement time and response times of users vising the website, it should be ensured that the Index of Difficulty is kept minimum by ensuring proper distance and size of buttons. Also, the Degree of Choice should be maintained by reducing the variety of buttons present. With the homogeneity of buttons, the time taken is less.