IT351 – Human Computer Interaction

Assignment 2 – Hick Hyman's Law

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Hick Hyman's Law states that the time it takes to make a decision increases with the number and complexity of choices.

The formula for Hicks law is defined as follows:

$$RT = a + b * H$$

where,

RT = Reaction Time

H = Entropy

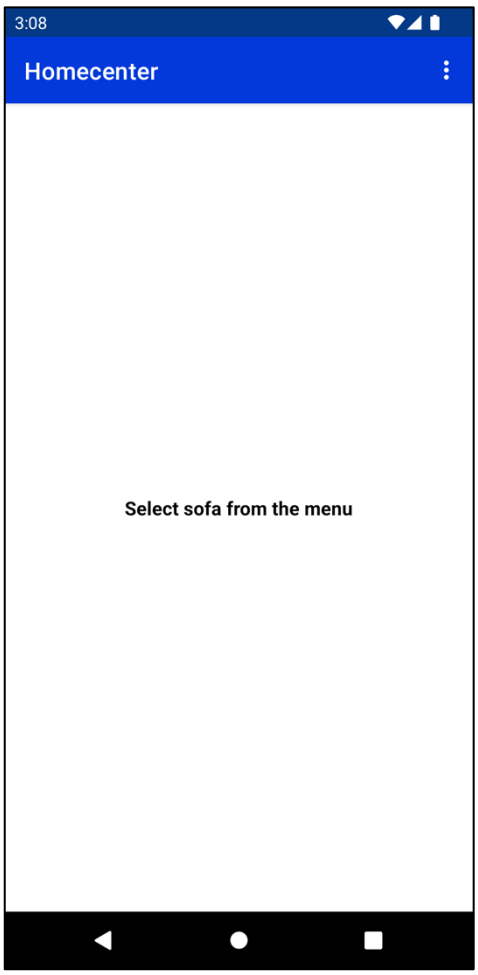
a, b = constants which are empirically determined

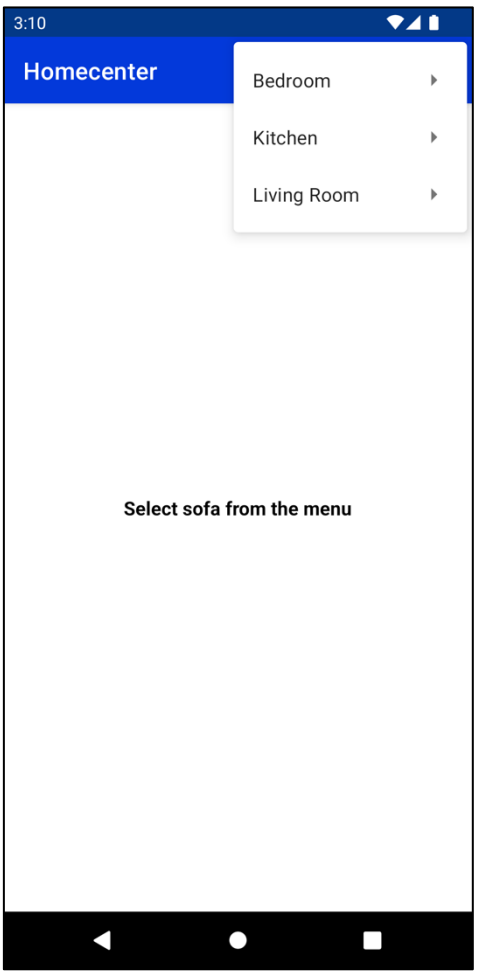
H is calculated as $H = \log_2 n$ where "n" is the number of choices to choose from.

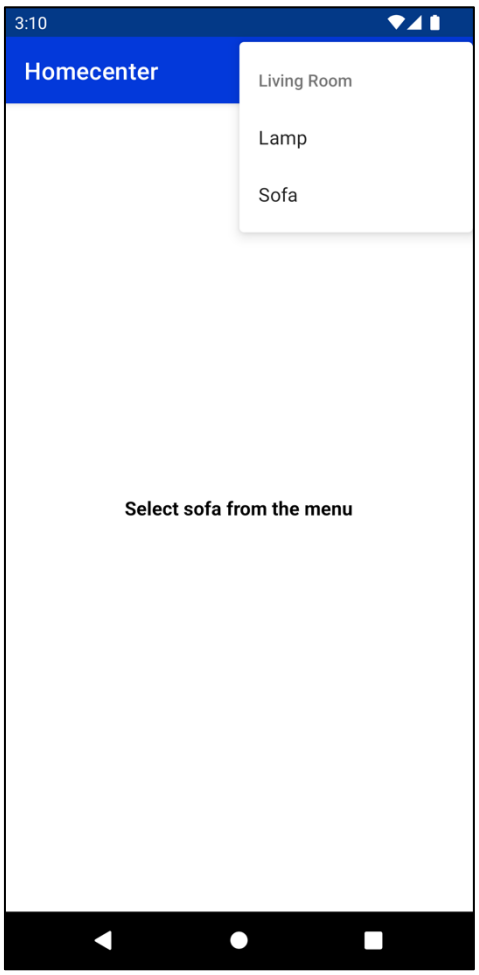
A mobile interface was created to demonstrate this law. The user will be shown 3 different menu structures from which they will be ordering a "Sofa".

FIRST MENU

The first menu is a simple drop down list with the items divided according to the rooms they are kept in.





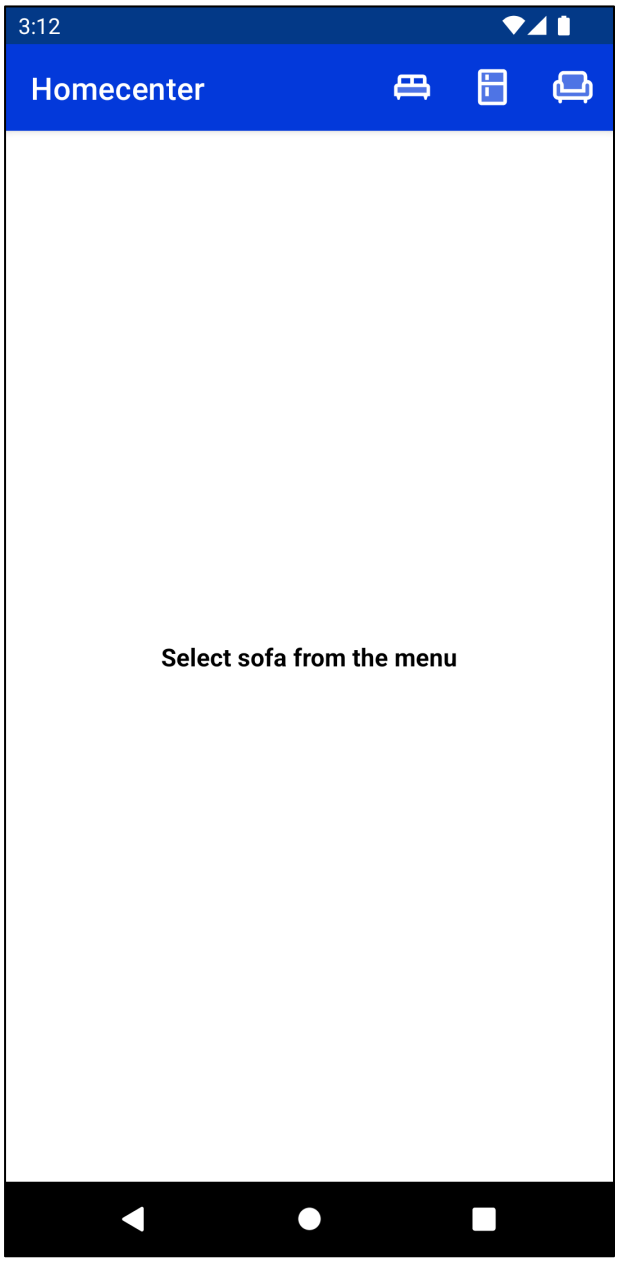


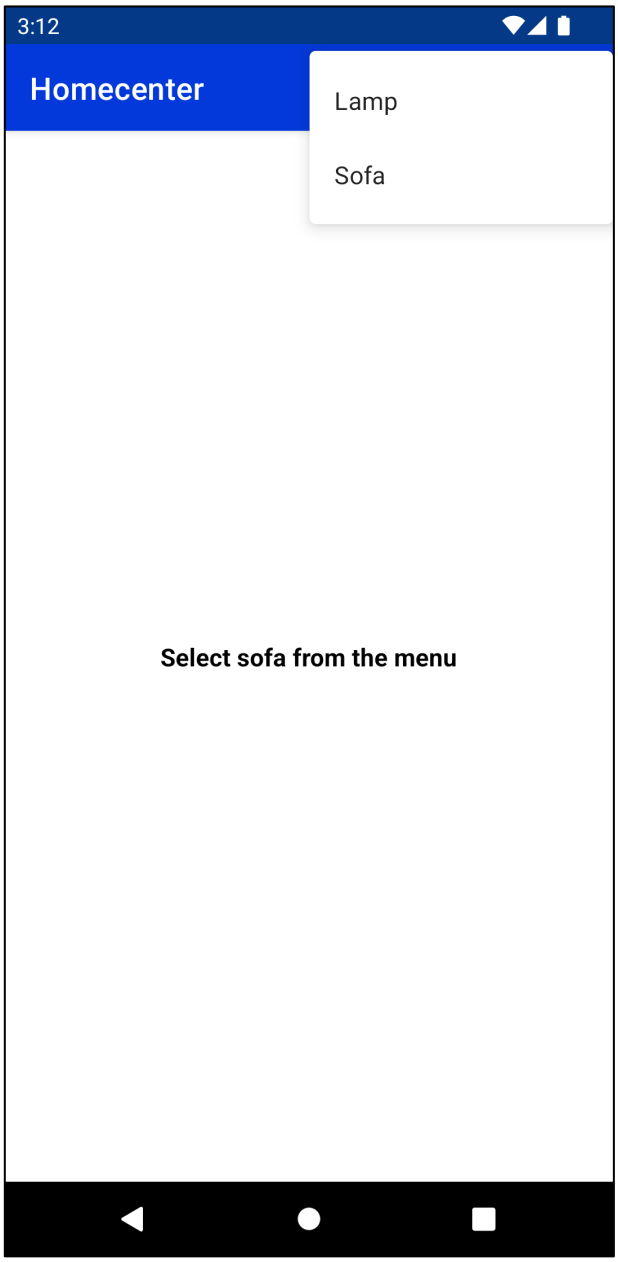
Reaction Time: 5.24s

Entropy: $\log_2 11$ = 3.459

SECOND MENU

The second menu makes use of icons to indicate the different rooms and the icons are displayed on the menu bar instead of in a menu.



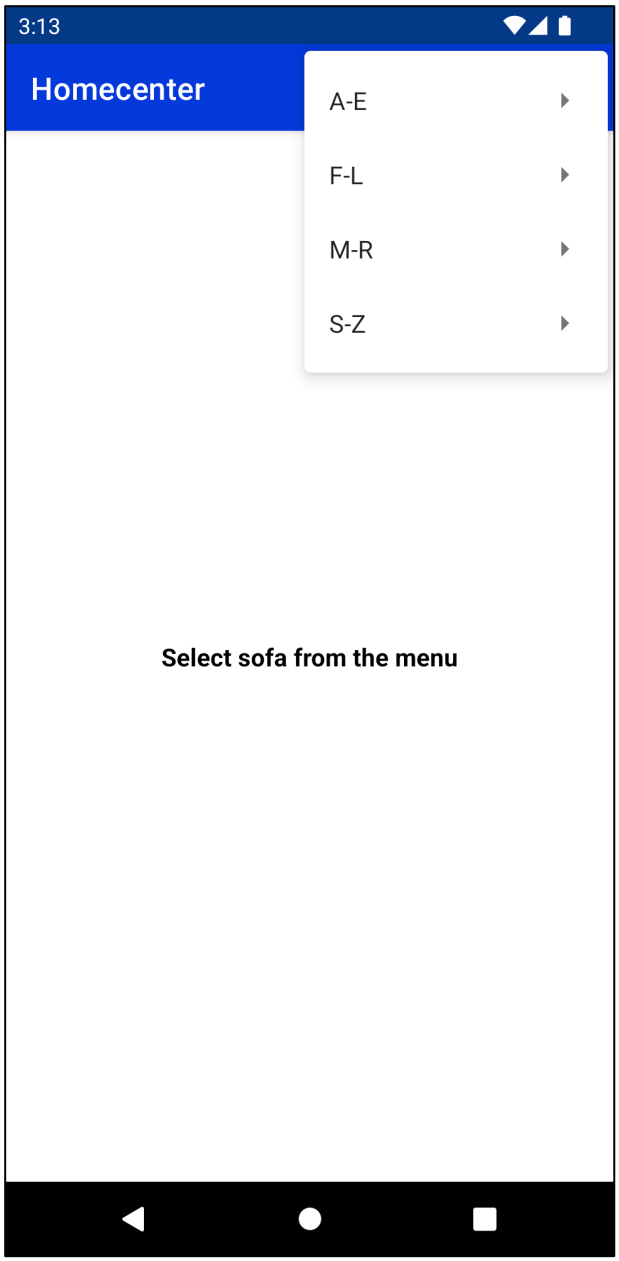


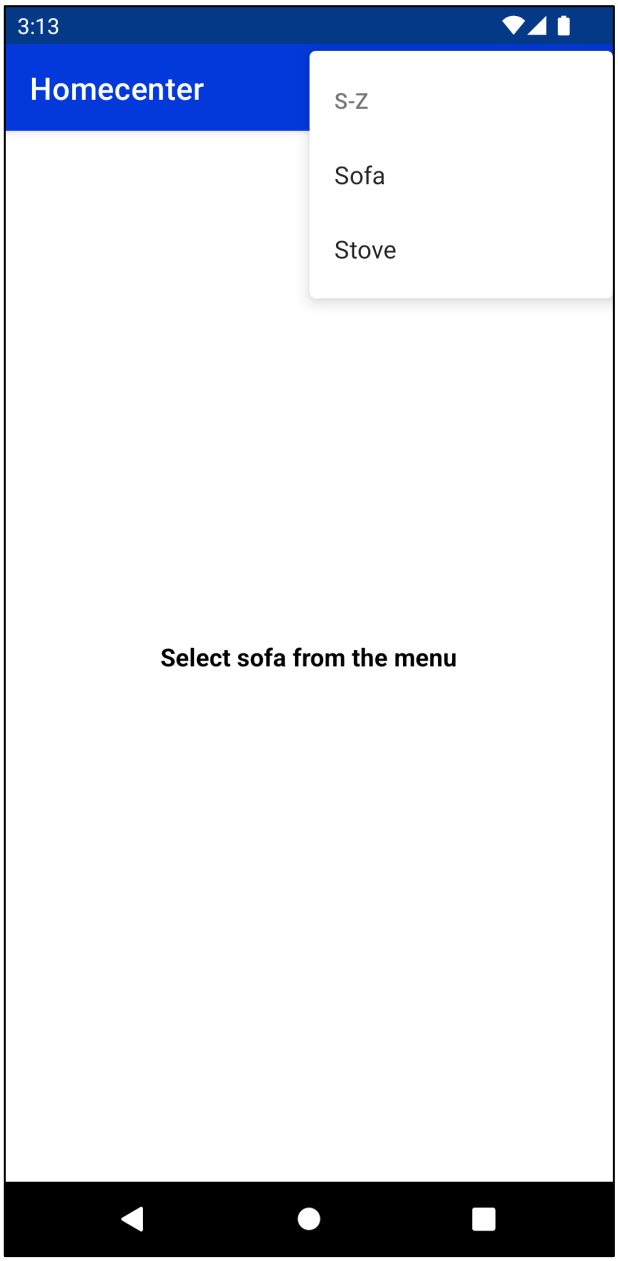
Reaction Time: 3.11s

Entropy: $\log_2 8 = 3$

THIRD MENU

The third menu is a drop down list with the items divided according to the 4 alphabet groups(A-E, F-L, M-R, S-Z).





Reaction Time: 7.38s

Entropy: $\log_2 12 = 3.584$

Plotting the RT-H graph for each test case is below. Reaction Time is along the Y-axis and the Entropy is along the X-axis.