Assignment 1
CS4110-Human Computer Interaction
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1. Multiple choice/Fill in the blanks:

a. The keypad numbers layout is similar in____and_____.

i. phones and computer keypads
ii. phones and remote controls
iii. remote controls and computer keypads
iv. ATM machine and computer keypads

b. **User Experience** refers to how a product behaves and is used by people in the real world.

2. Differentiate between external consistency and internal consistency. Give one example of each not given in lecture slides.

Internal Consistency:

Internal consistency refers to the term of designing the application/web application with the same behavior/layout/colors/theme/interface to have a consistent experience for the user since it is easier for the memory to remember the consistent designs/patterns.
E.g online invoicing software contains the same interface for creating an invoice/quote to maintain consistency.

External Consistency:

External consistency refers to the term of designing the package of application/web application with the same behavior/layout/colors/theme/interface to have a consistent experience for the user since it is easier for the memory to remember the consistent designs/patterns.
E.g Saas company offers different web application packages containing tracking tools, and project management but used the same interface and design.

3. Describe the following terms in the context of HCI. Give one example each (not given in lecture slides) in the context of the Graphics User Interface (GUI) of computer-based applications.

i. **Visibility**: Way of making the action visible for the user with the help of an icon, label, colors, or pattern so that it helps the user to act by graphical help or instructions

Example: debit card machines contain the shape of putting the card so the user can easily know where to enter the card.

ii. **Constraints: the** way of restricting the user to perform the wrong action and wastage of energy with the help of examples, patterns, labels,s etc

Example: email textbox in the signup page shows an example of the email such as example@gmail.com so the user can avoid adding the wrong format/ similarly for date format

iii. **Usability:** easy to use/user friendly so that even the weakest mind user can use it without any external help

Example: illiterate people/kid's applications are designed with icons, and colors since they are not able to read the labels

iv. **Affordance: the** way of designing the product in a way that is self-explanatory for the user

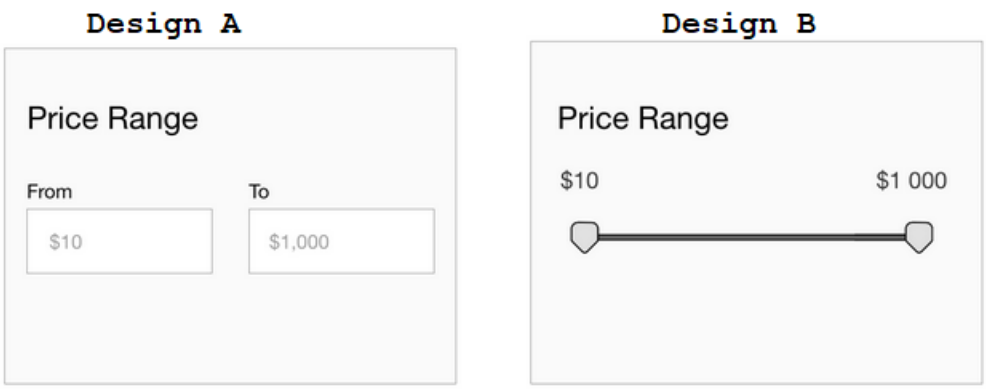
Example: age/price feature scale in the app that the user can get just by dragging it forward and backward

4. How Short-Term Memory (STM) and Long-Term Memory (LTM) may influence the design of User Interfaces?

Short-term memory works for a few seconds and the user can remember something he saw or listened to for a few seconds in the pattern of chunks while long-term memory can stay for very long in the memory and it takes time to memorize information as well. So, when the user is interacting with the system, in short-term memory, he might only remember the action, and color of the action/button but not the text/name of the action after performing it for the first time.

But when heactedn for few times, it switches to his long-term memory, and even after a long time when he interacts with the system again, the easier the interface the easier, he will remember the options/features. So it's always better to use colors, patterns, highlights, and shapes since our visual memory lastslongerg as compared to text/labels. Similarly, we can make chunks of alphabets since it is easier to hold for STM and avoid numbers since it doesn't last long in the memory.

5. Evaluate the following two designs, and write the good and bad features of each design.



Design A :

Benefit: both float and integers numbers can be handled in this way/ subjective approach. Flexible to adjust the numbers accordingly, also constraint is mentioned to avoid user to enter wrong numbers.

Drawback: takes much time to manually write the numbers, people usually prefer to deal with integers as float can be complex to deal with for price ranges.

Design B :

Benefit: Easier to set range with a minimum time, and also constraints indicate you can't enter price more or less than that

Drawbacks: if the products contain dealing with float numbers range, it would not be ideal to use.