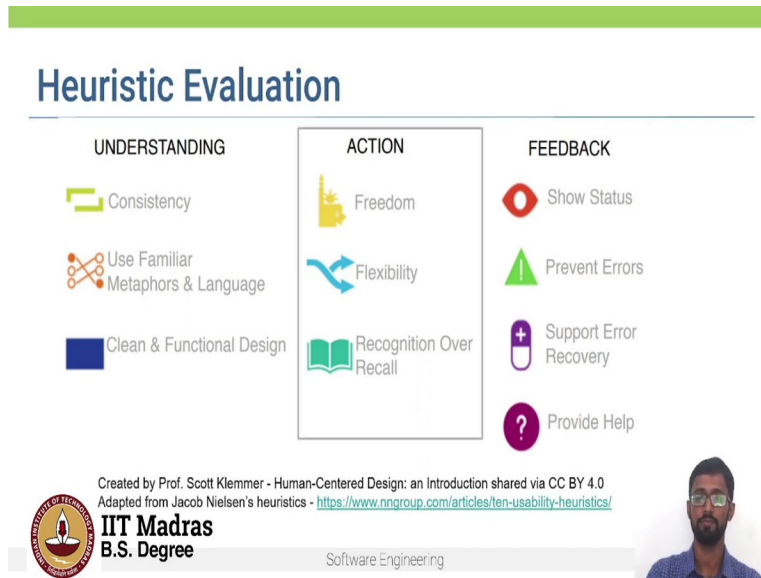


Software Engineering
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Evaluation using Design Heuristics - Heuristics for Action

(Refer Slide Time: 00:27)



In the previous video we looked at Nielsen's design heuristics, and looked at heuristics related to understanding. In this video, we look at heuristics related to action.

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Freedom

- Freedom to Undo
 - Deleted a file? Recover from trash
 - Document - recovery options
 - Undo - Ctrl Z

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Let us look at the freedom heuristic. So, there are different aspects of the Freedom heuristic. One is the freedom to undo. So, we saw this in the previous videos as well. So, let us say we have deleted a file, we can always recover it from trash. And document editing software's have recovery options, and keyboard shortcuts like Ctrl Z to undo.

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Freedom

- Freedom to Explore



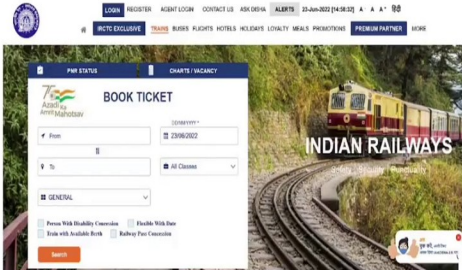
The screenshot shows the IRCTC website interface. At the top, it says 'Indian Railway Catering and Tourism Corporation Limited' and 'A Government of India Enterprise'. Below this is a navigation bar with links like 'Train Reservation', 'Hotels', 'Tourist Trains', 'Tour Packages', and 'Loyalty Program'. The main content area features a 'Login' section with input fields for 'Username' and 'Password', and radio buttons for 'Train Ticket', 'Tourism Services', and 'Mumbai Season Ticket'. There are also links for 'Signup', 'Forgot Password', 'Agent Login', and 'Find Agents'. A message box states: 'If a user is not permitted. Users are requested to mail the user-id that they would like to keep active at care@irctc.co.in.' There is also a section for '24x7 Customer Care' with contact numbers and a chat icon. The footer includes 'IIT Madras B.S. Degree' and 'Software Engineering'.

Another aspect of Freedom is the freedom to explore. So, platform should provide freedom for users to explore the key features. So, for example, in online shopping portals, we are able to look at products without actually signing in. These platforms give us the freedom to explore the products. Another example is of the IRCTC website 10 years ago. So, here we can see that earlier IRCTC website did not allow users to search for trains without logging in. Hence, it is restricted users' freedom to use key features of the application.

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Freedom

- Freedom to Explore













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Whereas, now we can search for tickets without logging in.

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Heuristic Evaluation

UNDERSTANDING	ACTION	FEEDBACK
 Consistency	 Freedom	 Show Status
 Use Familiar Metaphors & Language	 Flexibility	 Prevent Errors
 Clean & Functional Design	 Recognition Over Recall	 Support Error Recovery
		 Provide Help

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Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>


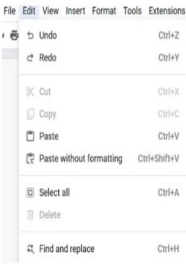
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The next heuristic is flexibility.

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Flexibility

- Experts as well as new users should be able to carry out tasks efficiently
- Example: Word, Google Docs etc.



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So, experts as well as new users should be able to carry out tasks efficiently. So, new users often require guidance when using a system and need clear and obvious options. So, they usually rely heavily on step by step results, or clearly labeled menus. However, more experienced users learn the required keyboard shortcuts to complete the same task.

Let us look at an example of document processing software's like Word, Google Docs, etc. So, when a new user needs to edit a document, they will initially go through various menus, and click on the cut, copy and paste menu item. And as they gain fluency and experience using this word processor, they will start using shortcuts.

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Flexibility

- **Personalization** - Tailoring content/functionality for individual users
 - Social media apps
- **Customization** - allow users to make selections about how they want the product to work
 - E.g. - News apps - asks users to select which topics they want news about



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Another aspect of flexibility is providing personalization. This refers to tailoring content and functionality for individual users. For example, social media apps, they provide posts and content based on your interests or your history.


Flexibility also involves customization, thereby allowing users to make selections about how they want the product to work. An example of this is news apps, which asks users to select which topics they want news about.

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Heuristic Evaluation

UNDERSTANDING	ACTION	FEEDBACK
 Consistency	 Freedom	 Show Status
 Use Familiar Metaphors & Language	 Flexibility	 Prevent Errors
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The next design heuristic is recognition over recall.


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Recognition over Recall

- Users find it easier to recognize something they have seen earlier
- E.g -
 - Pre-GUI era - Moving a file from one location to another in linux?
 - `mv temp.txt new_folder/`
 - Now - Moving a file from one location to another?
 - Right click on the file!

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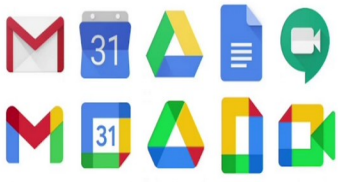
So, users have limited memory and they are not able to recall some information. However, they find it easier to recognize something they have seen earlier. So, for example, if I asked you what is the capital of Spain? You might not be able to recall. But if I ask you is Madrid the capital of Spain, then you might recognize that you have read about this information before. The same is true for user interfaces as well.

For example, in the Pre-GUI era, how could we move a file from one location to another in Linux? So, we had to type in a command such as mv, the file name, and the destination folder. So, users had to remember the command, the parameters, etc. But now, moving a file from one location to another is pretty straightforward. You just have to right click on the file or use shortcuts, and you know how to do it.


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Recognition over Recall


- Interface - buttons, navigation etc. should help the user reach his goal



<https://techcrunch.com/2020/10/06/googles-new-logos-are-bad/>




<https://thehancopy.co/its-the-criticism-of-google-icons-justified/>



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Another important aspect is that the interface, the buttons, navigation, all of this should help the users reach their final goal. An example of this is Google's recent change of their icons. So, here, if you look at the image on top, where the previous Google product icons were, the color form and shape could help us easily determine the functionality of each app. So, for example, the postcard like letter shape of the Gmail app is immediately recognizable, and points to the functionality of Gmail that is checking and writing email.

However, after the redesign, all the apps have the same color and form. The idea might have been to give a consistent design across Google products. But a lot of people complained that they were finding it difficult to distinguish between different apps on small screens such as

mobile phone. Hence, it is essential that the user interface and buttons do not add the load of making users remember something.