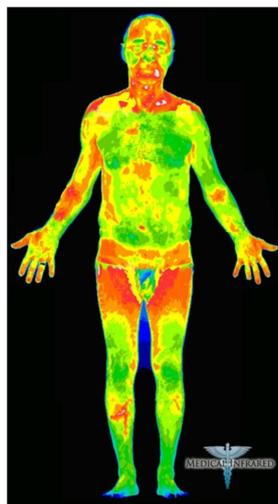


## 1 **7.1 – Object Perception; Shape**

2 Human brain has a special ability in recognizing objects and relating different information too  
3 them. There are different theories that provide explanation about the object recognition process  
4 in humans. One theory believes that this process is an image base process, while the other theory  
5 considers it as a structure based process. There is evidence in support of both theories and it  
6 seems that there is no single interpretation for how humans recognize objects. I will provide  
7 examples of how this special ability can influence designs visual interfaces.

8 Object based displays are very good examples of using this special ability in order to integrate  
9 different information about on object and providing them in a succinct way to the user. This kind  
10 of display enables the application to integrate and display information about several variables in  
11 one place. An example of such a display could be battery charge indicator on laptops. It could  
12 display information about remaining charge, health condition and presence of the battery at the  
13 same time just using a simple visual object. Another good example is thermal map of patient's  
14 body in medicine as shown in Figure 1. It greatly helps physicians to study a large amount of  
15 information about the patient in one image.



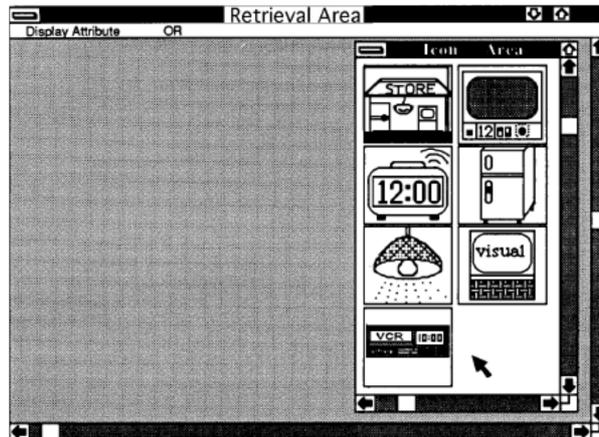
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17

**Figure 1** Thermal Infrared Image of Full Body Scan of Human Male

18 Human ability in recognizing objects and understanding the relation between objects needs no  
19 training. Researchers in data base systems have used this fact in designing visual query  
20 languages for novice users (CATARCI et al. 1997). Using this visual query languages require no  
21 knowledge about the underlying textual query language since the relationships between concepts  
22 are expressed visually. Users can express simple queries just by placing different objects in  
23 different spatial relation to each other. A sample user interface of such system is shown in Figure  
24 2.

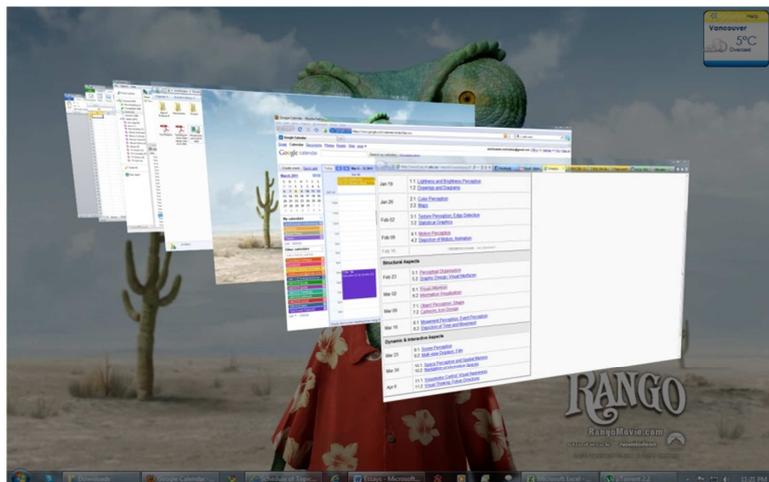
25



26  
27

Figure 2 Visual Query Language.

28 Humans are very fast in recognizing objects. We can achieve the maximum speed if we keep  
29 eyes fixated at the same point and present images in sequence (Ware 2004). This ability can be  
30 used to provide a very fast visual search in a visual system with a lot of visual objects. Windows  
31 operating system has provided a 3D task switch utility which enables the user to quickly browse  
32 through the open applications Figure 3. The design of this utility has utilized the fast human  
33 object recognition by showing the images of open applications in sequence on the same spot on  
34 screen. It enables the user to quickly find and switch to desired application in a very fast manner.



35  
36

Figure 3 Visual Search in Windows Operating System.

37 Object recognition and association of objects with conceptual information in human mind  
38 enabled designers to create elegant visual systems. These systems provide information in a  
39 succinct way to the user. They also enables user to perform some tasks faster by using this  
40 ability.

41

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