Reasoning and problem solving and Remaining Topics in Unit 1

State Reasoning. What are the types of reasoning?

Reasoning is the process by which we use the knowledge we have to draw conclusions or infer something new about the domain of interest. There are a number of different types of reasoning:

1. deductive 2.inductive 3.abductive

What is problem solving?

Reasoning is a means of inferring new information from what is already known, problem solving is the process of finding a solution to an unfamiliar task, using the knowledge we have. Human problem solving is characterized by the ability to adapt the information we have to deal with new situations. However, often solutions seem to be original and creative.

State Gestalt theory.

Psychology concept is used in training. It proposes that what is 'seen' is what appears to the seer and not what may 'actually be there,' and that the nature of a unified whole is not understood by analyzing its parts. It views learning as a reorganizing of a whole situation in contrast to the behavioral psychology view that learning consists of associations between stimuli and responses. Gestalt experiments show that the brain does not act like a sponge but actively filters, structures, and matches all incoming information against known patterns to make sense of it.

What are the basic levels of skill in Anderson's ACT* model?

1. The learner uses general-purpose rules which interpret facts about a problem. This is slow and demanding on memory access.

2. The learner develops rules specific to the task.

3. The rules are tuned to speed up performance.

List out all text entry devices.

1.Thealphanumeric keyboard,2.Chord keyboards,3.Phone pad and T9 entry,4.Handwriting recognition, 5.Speech recognition.

What are touch screens?

Touch screens are another method of allowing the user to point and select objects on the screen as they detect the presence of the user's finger, or a stylus, on the screen itself. They work in one of a number of different ways: by the finger (or stylus)

interrupting a matrix of light beams, or by capacitance changes on a grid overlaying the screen, or by ultrasonic reflections. The touch screen is very fast, and requires no specialized pointing device. Because the screen acts as an input device as well as an output device, there is no separate hardware to become damaged or destroyed by dirt; this makes touch screens suitable for use in hostile environments.

What is Eyegaze?

Eyegaze systems allow you to control the computer by simply looking at it. Some systems require you to wear special glasses or a small head-mounted box. A low-power laser is shone into the eye and is reflected off the retina. The reflection changes as the angle of the eye alters, and by tracking the reflected beam the eyegaze system can determine the direction in which the eye is looking. Eyegaze is a very fast and accurate device, but the more accurate versions can be expensive.

What is icon wars?

Icon wars, occurs on window systems. The user clicks the mouse on a menu or icon, and nothing happens; for some reason the machine is busy or slow. So the user clicks again, tries something else and then, suddenly, all the buffered mouse clicks are interpreted and the screen becomes a blur of flashing windows and menus. This time, it is not so much that the response is too slow – it is fast enough when it happens – but that the response is variable. The delays due to swapping programs in and out of main memory typically cause these problems.

What are the limitations on interactive performance?

1.Computational bound, 2.Storage channel bound, 3.Graphics bound, 4.Network capacity

What are the stages in Norman's model of interaction?

1. Establishing the goal.
2. Forming the intention.
3. Specifying the action sequence.
4. Executing the action.
5. Perceiving the system state.
6. Interpreting the system state.
7. Evaluating the system state with respect to the goals and intentions.

State Ergonomics.

Ergonomics (or human factors) is traditionally the study of the physical characteristics of the interaction: how the controls are designed, the physical environment in which the interaction takes place, and the layout and physical qualities of the screen. A primary focus is on user performance and how the interface enhances or detracts from this. In seeking to evaluate these aspects of the interaction, ergonomics will certainly also touch upon human psychology and system constraints.

What are the common interface styles?

Common interface styles includes,

1. command line interface
2. menus
3. natural language
4. question/answer and query dialog
5. form-fills and spreadsheets
6. WIMP
7. point and click
8. three-dimensional interfaces.

Write notes on WIMP interface.

WIMP stands for windows, icons, menus and pointers (sometimes windows, icons, mice and pull-down menus), and is the default interface style for the majority of interactive computer systems in use today, especially in the PC and desktop workstation arena. Examples of WIMP interfaces include Microsoft Windows for IBM PC compatibles, MacOS for Apple Macintosh compatibles and various X Windows-based systems for UNIX.