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* Question and Answers :-

(1) What are the differences and similarities between predictive models and cognitive models?

→ (1) Predictive models :-

This is used to incorporate ways to help incorporate improved means of having good interaction with HCI's. Predictive models include-

(a) Keystroke level model -

This is used to predict how long it takes to execute a specific task & this is broken down into 3 areas.

(b) Throughput -

This is used to show the overall productivity of the computer it shows how quick a computer responds to command, therefore showing you the computers processing speed and allowing you to yourself determining if it needs to be upgraded or not.

(c) Fitt's law -

This is used to predict how quick a user will be able to move to a specific area based on how far away it is & how large the object you are toying to reach is.

(2) Cognitive models :-

Cognitive models have rather computational flavor, this reflects the way that computational analogies are often used in cognitive psychology. The presentation of cognitive models is divided

into following categories:
① Hierarchial representation of user's task & goal structure.
② Linguistic and grammatical models.
③ Physical and device level models.

Q.2] Explain overall process required for interaction between Human and computer using Natural Language processing

⇒ 1. The most attractive means of communicating with computers, atleast at first glance is by natural language.
2. Natural Language understanding both of speech & written input. Natural language processing has been in existence for more than fifty years. During this time, it has significantly contributed to the field of human computer interaction, in terms of theoritical results and practical applications.
3. Representative of linguistic approach is Reisner's use of BNF rules to describe the dialog grammer. This views the dialog at purely syntactic level, ignoring the semantics of the language.
4. There are various approaches for interaction between human & computer using NLP such as ① Symbolic approach ② Stochastic approach ③ Connectionist ④ Hybrid.
5. Instead of all this there are computation issues in using NLP so these are

various approaches & overall process for interaction between human and computer using NLP.

(3) Discuss next generation interfaces such as gesture control used in Home automation, robot used in daily task performance.

⇒ 1. Homes and working spaces are considered significant contributors to the top percentage of energy consumption & carbon emissions worldwide.

2. Sustainable gain brought by smart home solutions, in terms of energy efficiency, economic savings and enhanced living & working condition.

3. Using available motion capture technology a gesture dictionary will be end in air movement.

4. A usability test will be conducted to measure the resulting socio technical aspects.

5. Effect of gesture control for a higher uptake of smart home solutions towards designing and maintaining buildings of the future that are user centric & resource efficient to reduce our overall carbon footprint.

6. These hand gesture robot used in vaccum cleaner, AC, hand washer, also in military, medical, fire fighting department, construction field, etc.

(4) Write short note on socio-organizational issues & stakeholder requirements & heuristic evaluation.

→ 1. There are several organizational issues that affect the acceptance of technology by users & must therefore be considered in system design:
(1) System may not take into account conflict & power relationships.
(2) Those who benefit may not do the work.
(3) Not everyone may use system.

2. Organizational issues –
Many systems supporting work in organisations are supporting groups of workers, but this may be through specialist groupware systems or through shared data or processes.
(1) Cooperation or conflict – Computer supported cooperation work seems to assume that groups will be acting in a cooperative manner.
(2) Changing power structure – Identification of stakeholder will uncover information transfer & power relationship that cut across organizational structure.
(3) Invisible worker – The ability to work & collaborate at a distance can allow functional groups to be distributed over different sites.
3. The type of assistance users require varies and is dependent on many factors there are four main types of assistance

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The users require :
1. Quick reference
2. Task specific help
3. Full explanation
4. Tutorial

4. Requirements of user supports :
1. Availability
2. Accuracy & completeness
3. Consistency
4. Robustness
5. Flexibility
6. Unobtrusiveness.