**HCI**

1. Mark Weiser:

Ans: Computer scientist & chief technology officer of xerox parc

1. Mark weiser vision: 4 ta.
   1. The purpose of a computer is to help you do something else.
   2. The best computer is a quiet, invisible servant.
   3. The more you can do by intuition the smarter you are; the computer should extend your *unconscious*.
   4. Technology should create calm, "that which informs but doesn't demand our focus or attention."
2. Mark weiser vision er ki ki use hoi akhn- ipv6 use kori, 1 jon onek gula computer use korte parbe, mobile, computer etc, one person could use 50k to 1 lakh ip addresses. Nijeder iccha moto vibe change korte parbo. His vision in short was machine will fit into human environment. Sob iot device.
3. Parc xerox ki- Parc is a research and development company in paaul alto, California. xerox er prime product holo photocopy & electric type writing machine, GUI, Laser printer.
4. IPV6 e koto bit? -128bit
5. System error ki- system er function thik na thakle je error hoi.
6. **Data process model ki- the process to develop data model for data to be stored in data model.**
7. Error probability: Error er somvabona koto tuku seta. The probability of occurring error between targeted object and hitted object
8. **System image: visible part of the device. Dekhe bujhte parbo ki dhoroner operation kora** jabe.
9. Lock in:

Ans: keeps operation active preventing someone from permanently stopping It. lockings hocche accidentally use ta ke bondho korche mane prevents korche eta. example: word e kichu likhe onno file close korte giye bhule jei word file close kore feli and tokhon saving option ta ache bhul ta na howar jonno oitai hocche lockings.

1. \*Lock out- Prevent an event from occurring/ konokicu bondho kortei dibena. Like operating system update ->power button
2. \*Inter lock- Grade er mathai pin er moto thake jate accident na hoi, prevent accidental use of a device.
3. **Mental Model: It relate to the way that a user perceives the world around them.**
4. Conceptual model: ase pase ja dekhi setar concept amader brain e toiri kori.
5. \*Conceptual model-

Ans: two types-

The designer conceptual model

The user’s conceptual model

Example-calculator

1. Mapping- Relationship between control and their effects. Light and switch, pani ar pani porar tap. device er jonno na.
2. Touch error- touch korar por keyboard, ba onno kono touch screen e je error hoi.
3. **Degree of error- DTE=PTE\*(T tense to E). Highest degree of error ¼, lowest 1. No negative positive. Loss on both side. Loss kom e valo, loss besi te kharap, duijoner er.**
4. **Decimal error- Impact of error depends on n, that mean all which decimal box. First number ta aga diye confusion e poire jai porer digit gula niye. Aga choto number gulo bosale error er possibility kom.**
5. Quantifiable error-
6. **Gulf of execution- how well does the system allow someone to do their intended work. Dekhei mone hobe ki kora jabe but ja korte dibe ta alada.**
7. **Gulf of evaluation- how well does the system provide a visible state that can be directly perceive by the user. Kaj thik e hobe but full effect thakbena.**
8. **Constraint semantic- Eki jinish bivinno kaje, bivinno time e use korte parbe. Busket jama kapor thakte pare abar moila o thakte pare.**
9. **Cultural constraint- ekek culture ekek rokom. Jemon amra left to right, arabian ra right to left.**
10. **Logical constraint- Human er general logic jokhon kaj korano hoy. Example: Lego toy. Releated to natural mapping.**
11. **Constraint- First line of defense against human error.**
12. **Physical constraint-Physical limitation for not causing problem/ ekek eke jaigai ekek rokom thakbe. 3 pin plug, 2 pin plugs. Je jinish jevabe thakar oivabe thakbe.**
13. Retinal Variables- Size, value, orientation, texture, shape, position
14. Affordance-master term. Object er property dekhe ki korbe bolte parbo.
15. Binary error- email pass dile vul hole error dekhabe. Sothik hoile 1, vul hoile 0.
16. \***Ie er sutro- DT/E\*dn-2, D= degree of error, d=distance between a and b, n=position**
17. \***Optimization ki- Functionality or effectiveness of any device/ Kono device software er koto tuku functionality ba effective setar. 3 type er, L1, L2, L3.**
18. **L1, L2, L3**

**Ans: Regression is the 3rd optimization called L3.**

**L1 is the first optimization which is basically taking the minimum value among all the values as a point and try to move all other value to the minimum point.**

**L2 is the second optimization where we choose an average point of all the values and try to move all other values as close to the average point.**

1. **Data driven error- static memory te thakena. STM e thake. Instant jeta samne ase oitai STM e theke jay.**
2. Linear regression- Regression is the 3rd optimization called L3.
3. **Log2\*(D/w+1)**
4. **W=point of intersection to center of index. W er man rf ar 2 rf er majha majhi hoite hobe.**
5. Human error 2 type er- intentional-unintentional error.
6. Loss of activation- kono jinish korte jeye vule jaoa.
7. 300 million story- customer back asto onek information daoa lagto bole. Pore vul bujhte pare ato info keu deina. Baki info save koire rakhe.
8. Slip holo unintentional, mistake intentional.
9. Routine er satha ovvosto hole slip houa shuru kore
10. **Error prob= w=rf, rf= radius of finger shape**
11. Slip stm e hoi
12. Stm e over Write hoile slip hoi
13. **gestault principle theke symmenty- simple description of an object. Forming a simple pattern in the brain**
14. **fitts law=a+b log2(2d/w)( relative precision er hat e jete joto tuku time lage. (To calculate the time for reposition we use fitt’s law ----It actually find the index of difficulties)**
15. Gestalt principle 7 ta
16. STM size 5-9 ta porjonto task. +-7
17. Data driven e focus static hoye jai.
18. Power law- the time it takes to perform a task decreases with the number of repetitions of that task
    1. the decrease follows the shape of a **power law**.
    2. System er problem solve hobe kina eta ber korar jonno.
    3. Tn=T1n(^-a+c)
19. Semiotic: A branch of philosophy that studies visual representation of concepts. Example: Emoji.
20. **Slip: Result from automatic behavior. Another name is cognitive error. Occurs at STM, memories become static, overwritten.**
21. **Mistake: Result from concious deliberation. Another name is epistemic error.**
22. 7 stages of action:
23. Forming goal.
24. Forming intention.
25. Specifying action.
26. Executing action.
27. Perceiving state of the world.
28. Interpreting state of the world.
29. Evaluation outcome.
30. Types of error:

**Capture Error: When any info becomes static in STM because of doing for a long time.**

Example: Semicolon in python.

**Description Error: Similar function.**

Example: Salt and Sugar.

**Data driven Error: When the memory is overloaded and there is not enough space in STM to store more.**

Example: Book character name.

**Associative Activation Error: When action becomes associated with certain sound or task.**

Example: Oven, Fridge replacement.

**Loss of Activation Error: When initial thought get lost or overwritten by another thought.**

Example: Why opened fridge?

**Mode: Single control multiple action.**

Example: capslock, makeup brush.

1. Thermostat is an on/off switch.
2. Ubiquitous: Computing everywhere in every object every time. (we are using ipv6, iot etc)
3. 