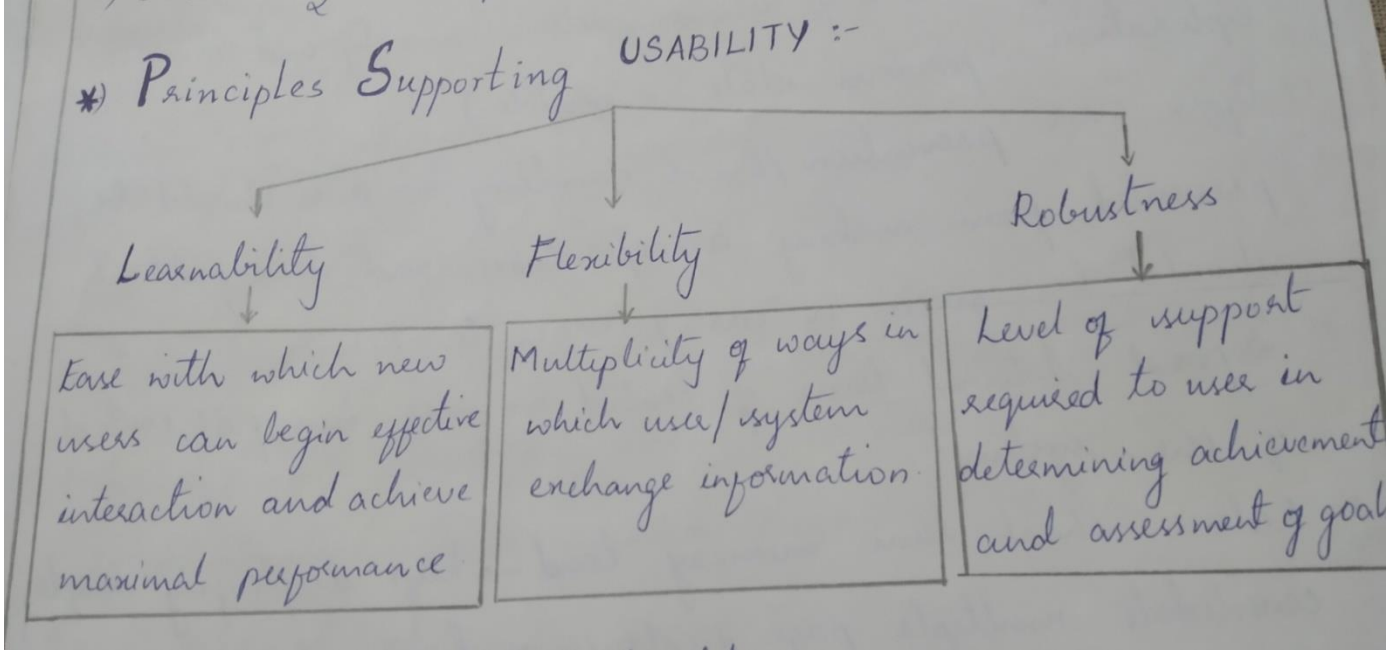
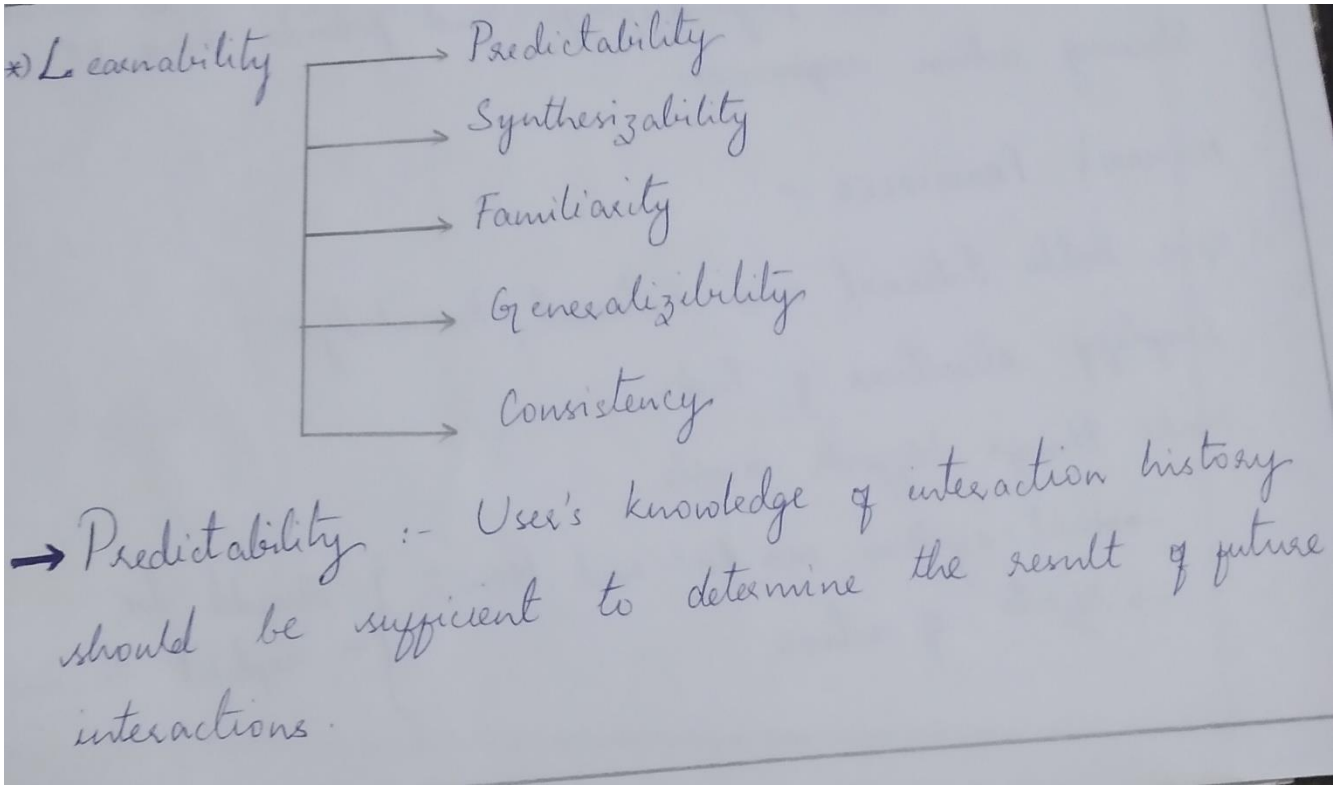
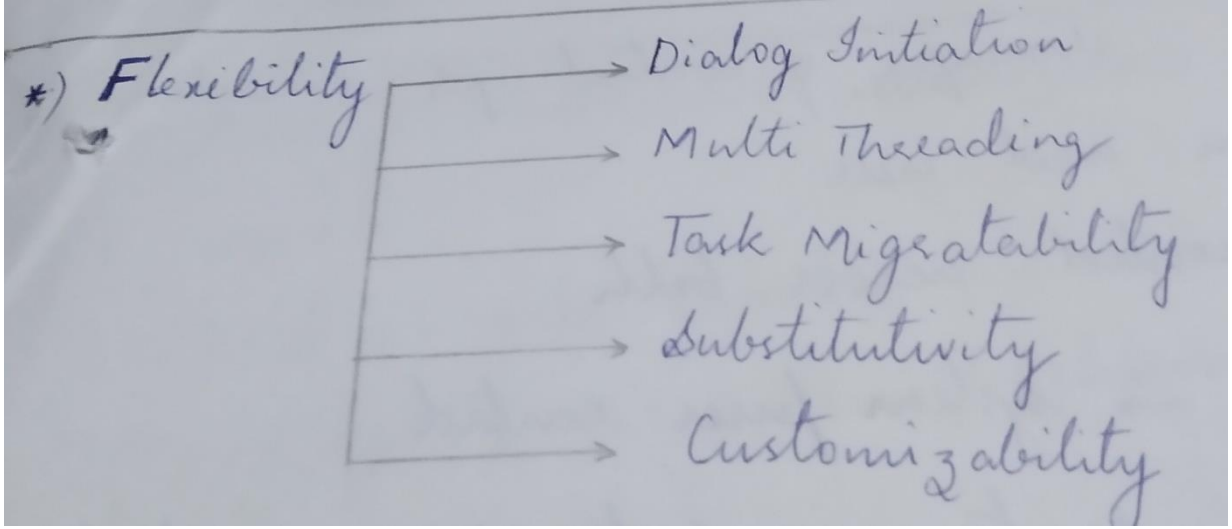
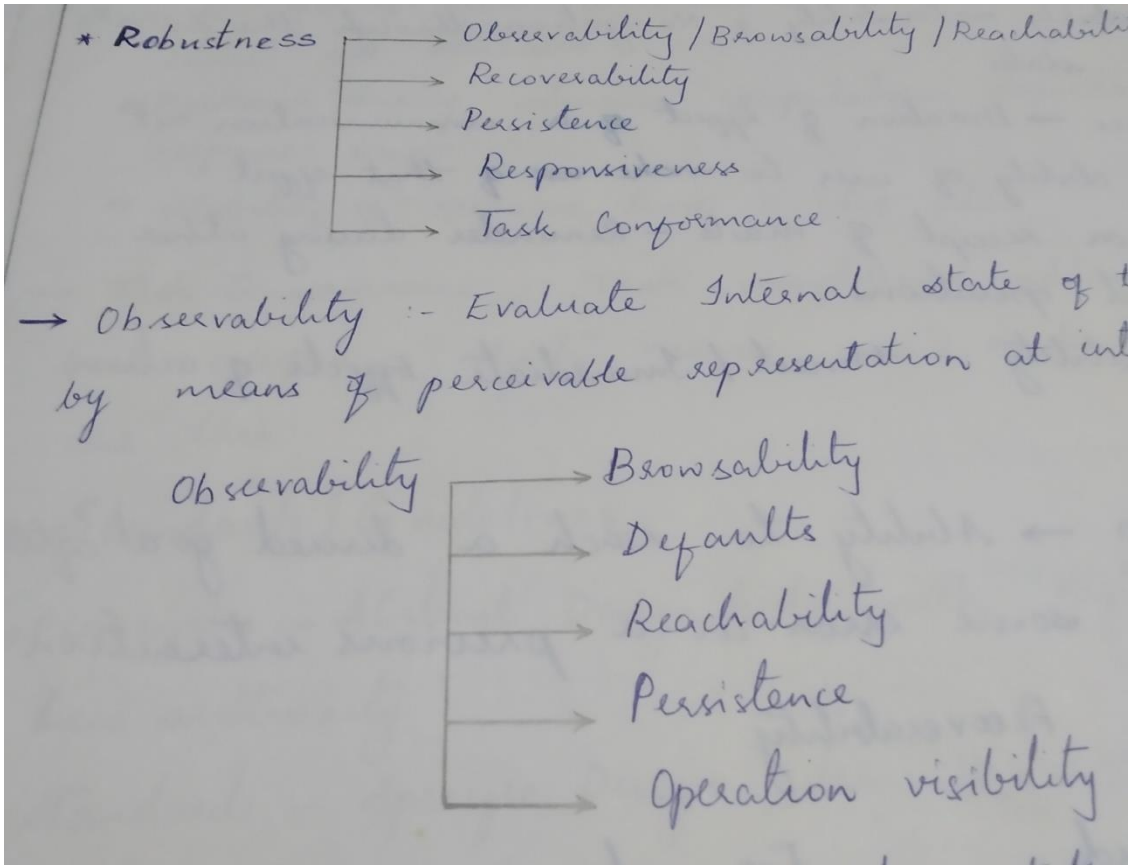
* Principles Supporting USABILITY :-





→ Predictability :- User's knowledge of interaction history should be sufficient to determine the result of future interactions.


*) Flexibility
Dialog Initiation
Multi Threading
Task Migratability
Substitutivity
Customizability


* Robustness
Observability / Browsability / Reachabili
Recoverability
Persistence
Responsiveness
Task Conformance
→ Observability :- Evaluate Internal state of t
by means of perceivable representation at int
Observability
Browsability
Defaults
Reachability
Persistence
Operation visibility

Principles to Support Usability (continued)

Synthesizability :- Ability of the user to assess the effects of past operations on current state

↳ "Honesty" → Ability of user interface to provide an observable / informative account of change

↳ "Immediate" → Notifications can occur without delay ↳ or atleast eventually

eg: command language / visual desktop interfaces

" file move from one directory to another "

↳ visual setup → Honest → Immediately (Immediately Honest)

↳ command line → " → Eventually

(Unix) → "mv" command and then "ls" in both directories

↳ Apple Mac m/cs (Earlier versions) → creation of new folder within a folder → visual effects were not immediately honest.

↳ global search / replace fns of word processor

③ Familiarity - Correlation b/w user's Existing knowledge and knowledge required for Effective interaction. "Guessability of the system"

↳ Typewriter to Word processor Transition

"Affordances" → how objects can be manipulated

Affordance → Enhances → Familiarity

④ Generalizability :- ↳ Form of consistency

↳ specific to general cases transition support

↳ Principle of Mathematical Induction / Inductive Reasoning

↳ Graphical Appln → circle → constrained ellipse

Square → " Rectangle

↳ cut/copy/paste operations → same Effects on Multiple windows / Applications

⑤ Consistency → likeness in Behavior arising from similar situations / task objectives

↳ Consistent Keyboard layout

↳ QWERTY / DVORAK Keyboard layouts

↳ Color Coded warning panel in aircrafts

"red → Immediate Recovery Regd

amber → Eventually " "

②

Flexibility :- Multiplicity of ways in which end user and system exchange information.

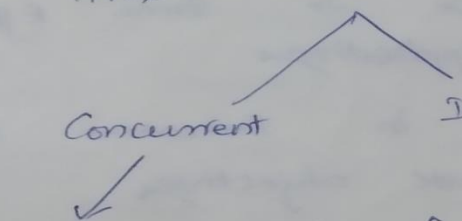
(1) ↳ Dialog Initiation → system / user preemptive.
(a) (b)

(a) system initiates actions towards the user
(b) user → system

↳ Balanced Tradeoff

↳ shared documents (Google Docs) → Multiple Users editing documents — "Consistent failure" → system preemptive dialogs.

(2) Multithreading → Thread of a dialog → subset.
↳ Interaction to support more than 1 task @ a time.



{ Simultaneous info. pertaining to separate tasks } Comm. of

{ Temporal Overlap of separate tasks but stimulates @ given instant dialog is restricted to a sing task }.

↳ Multimodality of is related to multi threadi dialog

Windowing system → Multi threaded dialog ③
→ Interleaved amongst # of overlapping tasks
↳ Text editing / File management in multiple windows
Concurrent Multi threading → Beep when editing file
(Arrival of New Message in Inbox)
Beep "Interleaves" Edit operations
(3) Task Migratability :- Transfer of control for execution of tasks b/w system and user
↳ Transfer of control across both
↳ Spell Checking → System / User control
↳ Safety Critical Applications → " " } Essential
→ Matter of life / death.
(4) Substitutivity → Alternate forms for action sequences
↳ Margin setting in MS word / Multiple ways
• Representation Multiplicity → Flexibility for state rendering
* temperature graph → / Digital thermometer
(trends) (values)
- Equal opportunity — input / output levels
↳ " system/user Not preemptive "
→ Excel — Spreadsheet → Formula.