Human Considerations in Design.

(1) Knowledge and experience

- Computer literacy → Experience / moderate / None
- System experience → high / moderate / low
- Application experience → high / moderate / low.
- Task experience → level 1 / level 2 / level 3 of Job — level of Knowledge
- Education → Advanced / Intermediate / School
- Reading level → < 5th grade. / 5th – 12th grade / > 12th grade.
- Typing Skill → Expert (135 WPM) / Skilled (90 WPM) / average (40 WPM)
- Native language and Culture. → English / or other

(2) Job / Task / Need

- Type of system use → Mandatory / discretionary
- Frequency of Use → Frequent / Continual / Occasional
- Task or Need importance → High / Moderate / Low
- Task structure → Repetitiveness of Tasks
- Social interactions → verbal communication Requirement?
- Primary Training → extensive Training / self Training / No Training

DATE

(3) Psychological characteristics.

- Attitude → positive, neutral, negative
- Motivation → how, moderate, high.
- Patience → Patience, Impatience.
- expectations → Kinds, Reasonableness
- Stress level → High, No stress.
- Cognitive Style → verbal & spatial, analytic, concrete.

(4) Physical Characteristics

- Age → young age, elderly
- Gender → Male, Female
- Handedness → left, Right, Ambidextrous
- Disabilities → Blind, defective vision, deafness, motor handicap.

HUMAN INTERACTION SPEEDS

The speed at which people can perform using various communication methods has been studied by researchers.

(1) Reading speed – The average adult reading speed English prose.
250 – 300 words per minute

proof reading — 200 words per minute

proofreading text on a monitor
– 180 words per minute.

(2) Listening – Words can be comfortably heard and understood at a rate of 150 – 160 words per minute.

(3) Speaking – Dictating to a computer occurs at the speed of 100 words per minute.

(4) Keying – Typewrite

Fast Typist – 150 words per minute

Average Typist – 60 – 70 words per minute

(5) Hand printing – people hand print memorized text at about 31 words per min.
Text copied – 22 wpm

Methods for gaining an understanding of users

→ Visit users locations to understand users work environment.

→ Talk to users about their problems difficulties, wishes. establish direct contact with users, avoid intermediates.

→ Observe users while they are working

→ Videotape users while working to study problems.

→ Learn about work organization where the system is installed

→ Tell the users think aloud as they do something to recover details

→ Try the job yourself

Understand the Principles of Good Screen Design.

A well designed screens reflects the capabilities, needs and tasks of its users. to accomplish these goals, the designer must first understand the principles of good screen design.

Human Considerations in Screen Design

Use of screen and a system is affected by many factors.

these include.

a) How much information is presented on a screen?
b) How screen is organized?
c) language used on the screen.
d) aesthetics
e) distinctiveness of screen's components.

How to Distract the Screen User

→ Unclear captions and badly worked questions.

→ emphasis is drawn away from what is important to that which is not important.

→ Misleading headings

→ Poor layout creates a bad initial impact and leads to more errors.

→ poor quality of presentation, legibility and appearance.

What Screen Users Want?

→ Orderly, clean, clutter-free appearance.

→ Expected information location — "where it should be exactly"

→ Plain, simple english.

→ Simple way of finding out what is on a system and how to get it out.

Interface Design goals.

→ The goal in Interface design is

→ Reduce the visual work.

→ Reduce the Intellectual work

→ Reduce memory work.

→ Reduce Motor work

→ Minimize or eliminate any burdens or limitations imposed by technology

DATE

(1) Organizing Screen elements clearly and meaningfully

Visual clarity is achieved when the display elements are organized and presented in meaningful and understandable ways.

(2) Consistency

- Provide real-world consistency reflect a person's experiences, expectations work conventions.

- Provide internal consistency. that is observe the same conventions and rules for all aspects of an interface design.

- Deviate only when there is a clear benefit for the user.

(3) Ordering of Screen Data and Content.

- Divide information into units that are logical, meaningful and sensible
- form groups that cover all possibilities
- possible ordering schemes
  - → Conventional
  - → Sequence of use
  - → Function
  - → importance
  - → generic to specific.

→ Conventional : through convention and custom some ordering schemes have evolved for certain elements.

eg By Days of the week

→ By months of the year

→ Sequence of use : Sequence of use grouping involves arranging information items in the order in which they are commonly received & transmitted.

eg Address. is given by
House no , Street
city
State
zipcode.

→ Frequency of use - information items that are based on most frequently should be grouped at the begining.

Second most frequently used items grouped next, and so forth.

→ Function & category - Information items are grouped according to their purpose or some common parameter.

eg All items pertaining to Transportation (car, train, planes) are grouped and placed in one location.

classmate

DATE

Importance: Importance grouping is based on information's importance to the user's task or need.

Eg items may be organized from best to worst
largest to smallest.

General to specific - Some data are more general than others. general elements should precede the specific elements.

(4) **Upper-left starting point.**

provide an obvious starting point in the screen's upper-left corner.

(5) **Screen Navigation and Flow.**

→ provide an ordering of screen information and elements that are rhythmic guiding a person's eye through the display and minimizing pointer and eye movement distances.

→ locate the most important and most frequently used elements at the top left.

→ Maintain a top-to-bottom, left-to-right flow.

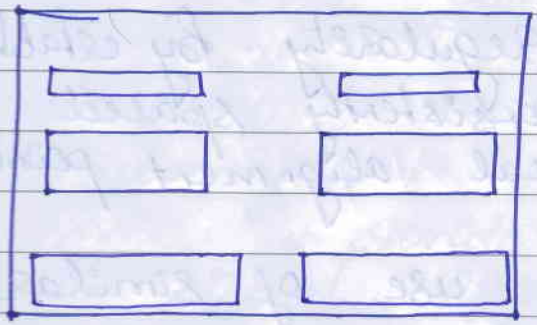
PAGE

→ Assist navigation through aligning elements grouping elements and using of line borders.

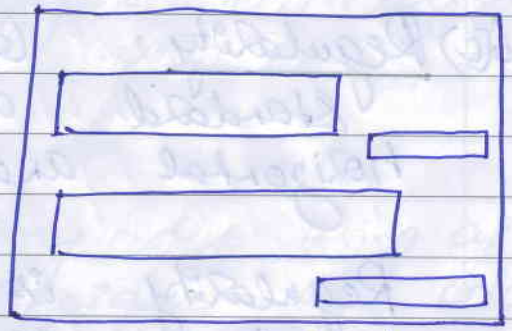
→ through focus and emphasis, sequentially direct attention to items that are
a) critical
b) important
c) secondary
d) peripheral.

(5) Visually pleasing composition with the following qualities.

(a) Balance – Create screen balance by providing an equal weight of screen elements, left to right, top and bottom Balance is stabilization or equilibrium a midway center of suspension.



Balance



Instability.

(b) Symmetry: Create symmetry by replicating elements left and right of the screen centerline.
Symmetry is axial duplication. A unit on one side of the centerline is exactly