RESPONSE TIME

Teknik Informatika – Unikom
2012

Response Time
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Task Time =
System Response Time
+ System Display Rate
+ User Scan/Read Time
+ User Think Time
+ User Response Time
+ Time Making Errors
+ Time Recovering from Errors

Adaptive user strategies to varying system response (RT) and error recovery (ER) times

- **Fast RT, Fast ER**
  Low user think time
  High user errors
  High user satisfaction
  Low stress
- **Fast RT, Slow ER**
  Moderate
- **Slow RT, Slow ER**
  High user think time
  Low user errors
  Low user satisfaction
  High stress

Response Time: Principles and Guidelines [1]

- Optimal display rate depends on the user's task.

- Response time for intermediate steps in a process should not exceed 2 second.

- Keep response time variability at less than + 50 % of the mean.

Response Time: Principles and Guidelines [2]

- Make the sources of response time variability visible.

- Make ease of learning and use versus response time trade-offs based on user experience and expectations.

Response Time: Principles and Guidelines [3]

- Response time should be consistent with user expectation.

- Manage user expectation with feedback

Table 7.2 Suggested response time ranges for operations of varying perceived complexity [Shneiderman,1980].

Interaction type	Example Time (T)
◉ Input	
• Direct manipulation	< 2 seconds
◉ Simple commands	
• Paging	
• Simple error checking	
• Open file	
◉ Complex commands	
• Load application	2 to 12 seconds
• Move across file	
• Search	
◉ Complex processes	
• Spelling checker	
• Batch transaction processing	