

GUI Summer 2020

What is Usability (Definition)

- Usability of what? - computer program in performing a task
- Usability - “the ease with which a user can learn to operate, prepare inputs for, and interpret outputs of a system or component.” (IEEE 1990)

Usability metrics

- Set of features
 - Operability – Ease of task completion
 - Learnability – Learning curve
 - Understandability
 - Attractiveness (subjective)
 - Effectiveness – in enabling specific Task
 - Efficiency- resources required (e.g., Time on Task ToT) Number of clicks
 - Satisfaction (subjective)
 - Accessibility
 - ~~• Compliance Response time SE principles (functional), portability~~

How do you measure Usability?

- Effort Based
 - TOT
 - Number of clicks
 - Mouth path traversed
 - Eye path traversed
- Error rate (operator)
- Questionnaires, polls, observations, focus groups

How do you test for Usability?

How do you set Usability requirements?

- Contract base requirements Non-functional

User interface development tools

- QT (was used by Nokia)
- Web tools

Components of an XR / Gaming system

- Graphics Engine
- AI Engine (enhancing player/user experience)
- Physics engine

Modes of interaction

- M2M Interaction
 - The input output is more precise and predictable
 - Sequence of event
 - Throughput ; Latency
 - One to one and one to many
 - Synchronous & and asynchronous
- M2H Interaction (UI)
 - One to one and one to many
 - Error
 - Asynchronous