Introduction to SE

Features of a s/w project

- difficult & customer to specify requirements completely
- difficult for the developer to understand customer needs
- requirements change regularly
- environment chang
- process of creating s/w is intangible
- s/w is intagible
- communication gap between
- difficult to test s/w exhustively
- wide scope
- become more complex over the time
- a small change can affect the whole system

System s/w

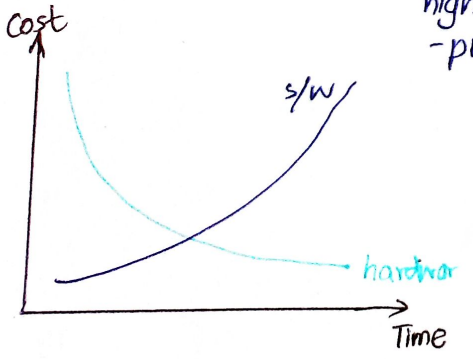
- system management
  - OS
  - operating environme.
  - DBMS
- system support
  - system utilities
  - performance monitors
  - security monitors
- system development
  - language transla.
  - programming environments
  - CASE packages

Application s/w

- general purpose
- application specific

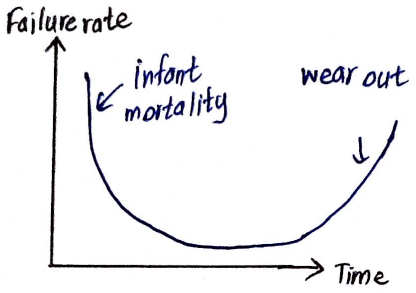
Software Cost

* Maintain cost is higher than development cost

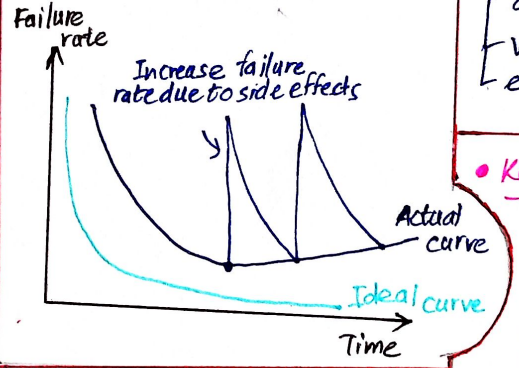


Failure curves for s/w & h/w

For h/w



For s/w



Reasons for s/w failure

- increasing system complexity
- failure to use s/w engineering methods

Key features of a good s/w

- maintainability
- dependability & security
- efficiency
- acceptability

Key activities of S/W process

- specification
- development
- validation
- evolution

Key challenges in SE

- hitergeneity (systems)
- business & social change (new tech)
- scale Lembeded to cloud
- security & trust

Ethics in SE

- confidentiality
- competence
- intellectual property rights
- computer misuse

ACM / IEEE code of ethics

- Public
- Client & employer
- Product
- Judgement
- Management
- Profession
- Colleagues
- Self