Software Engineering Cost Estimation

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A Very Brief History

- Need for estimation driven by cost considerations of commercial development
- Three sources of input for predictive modelling
  - Decomposition
  - Experience and historical data
  - Empirical models
- Some early models:
- Function Point method
  - Albrecht, IBM, 1979
- Constructive COst MODel – COCOMO
  - Boehm, TRW, 1981

Current State

- An engineering discipline needs to estimate the cost of a construction project before construction begins.
- Stakeholders need to understand the tradeoffs inherent in design decisions that affect all software quality attributes and resource allocation issues.
- COCOMO family
  - COCOMO II
  - Constructive COst MODel – COCOMO
  - COOTP
  - Cost
  - REVG
  - COQUALMO
- SLOC-based models
  - Vather-Felix model (IBM, 1977)
  - Bailey-Rust model (NASA, 1981)
  - DOTY model for KLOC-9
- Function-point based models
  - Albrecht and Ofsey model
  - Kemerer model
  - Matson, Barnett, and Mellichamp model