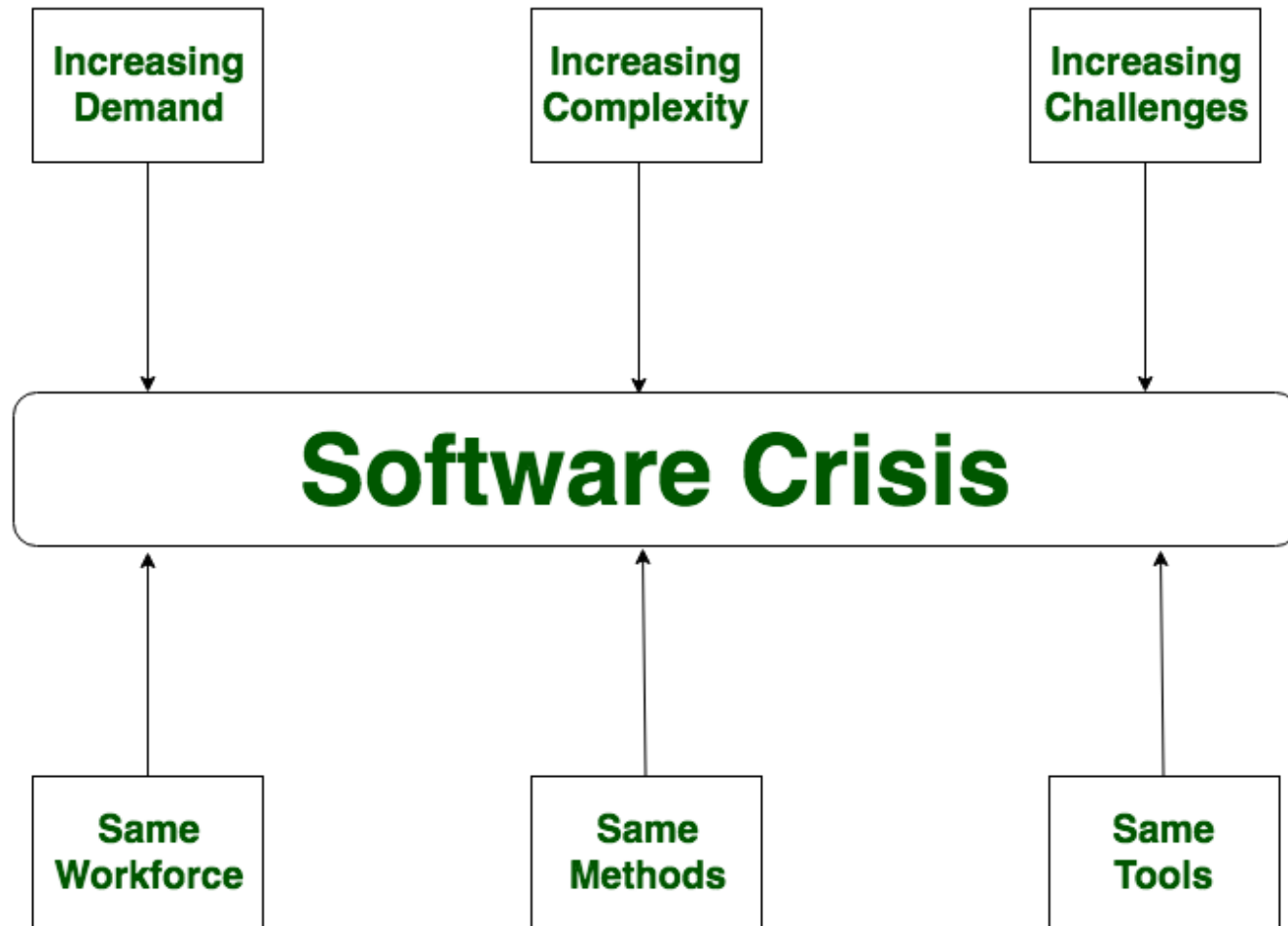# Software Engineering

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Software Crisis

- **Software crisis is the situation resulted due to the increment in failure rate of software development which leads to incomplete and degrading performance of software products**.

- Term was coined in the year 1968.

- In general it refers to poorly written, hard to read, error-prone software that often lacks good documentation.

- The term software crisis revolves around three concepts: **complexity, change and the expectations**.

Software Crisis

Software Crisis in terms of statistics

- **success 16%**
- **failure 31%**
- **over budget 53%**

Problems of software crisis:

- Projects running over-budget

- Projects running over-time

- Software was very inefficient

- Projects were unmanageable and code difficult to maintain

- Software was of low quality

- The software often did not meet requirements

Factors contributing to the software crisis

- Large and complex problems,
- Lack of adequate training in software engineering,
- Increasing skill shortage,
- Low productivity improvements,
- Requirement change is inevitable,
- Requirement gets frozen,
- Customer themselves are not clear with their requirements,
- Market demand/conditions changes,
- Manpower turnover,
- Technology/Process change,
- etc.

Example

- **_Y2K problem_**

  -related to date format

  -problem arise in year 2000
  - all the softwares stopped working
  -format changed from ddmmyy to ddmmyyyy.

  -**example:**

  -In 19th century date format used was ddmmyy(say 1st jan 1999 was written as 010199 and it year is assumed to be 1999 by default)
  - but, when 20 th century came, (say 1 st jan 2000 was written as 010100 and according to old format year was assumed to be 1900)
  - so all the software failed.
  -currently, we use yyyy instead of yy.

Thank You!