Purposes of Program Analysis

- To detect and trace defects such as memory leaks, security vulnerabilities etc.
- To judge complexity of programs.
- To compile programs.
- To migrate or evolve programs.
Analysis for Compiling

• Syntax checks
• Optimizations for improving performance
• Simple error checks
Analysis for Migration and Evolution

• Migration from one platform to another platform such as migrating code from a serial to a parallel computer.

• Evolution to improve efficiency, performance or functionality of software.
Software Complexity Analysis

• The analysis may be done to avoid unwarranted complexity.
• It may be for estimating maintenance cost.
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Types of Program Analyses

• Are there different types of program analyses?
• How do we differentiate the different types of program analyses?