

**CHAPTER 13:
PROGRAMMING
LANGUAGES**

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graph TD; C((CHAPTER 13: PROGRAMMING LANGUAGES)) --> B1[1. WHAT IS PROGRAMMING?]; C --> B2[2. DESIGN TOOLS]; C --> B3[3. PROGRAM TESTING AND THE TOOLS]; C --> B4[4. CASE TOOLS AND OBJECT-ORIENTED SOFTWARE DEVELOPMENT]; C --> B5[5. FIVE GENERATIONS OF PROGRAMMING LANGUAGES]; C --> B6[6. Careers In IT and a look to the Future];
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1. WHAT IS PROGRAMMING?

- A list of instructions
- Software development
- Six step procedure
 - STEP1-STEP6

2. DESIGN TOOLS

- STEP1: Program Specification (program definition/ program analysis)
- STEP2: Program Design
 - Top-down design
 - Pseudocode
 - Flowcharts
 - Logic structures
- STEP3 : Program Code
 - HTML and C++ Code

3. PROGRAM TESTING AND THE TOOLS

- STEP4: Program Test
 - Debugging – Syntax and Logic errors, testing process
- STEP5: Program Documentation
 - Users, Operators and Programmers
- STEP6: Program Maintenance
 - Error-free, ease of use, standardization and changing needs

4. CASE TOOLS AND OBJECT-ORIENTED SOFTWARE DEVELOPMENT

- Computer-aided software engineering (CASE)
 - Program design, coding and testing
- Object-oriented programming (OOP)
 - More on relationships between objects

5. FIVE GENERATIONS OF PROGRAMMING LANGUAGES

- 1ST GEN: Machine languages
- 2ND GEN: Assembly languages
- 3RD GEN: High level procedural languages (3GLs)
- 4th GEN: Task-oriented languages (4GLs)
- 5th GEN: Problem and Constraint languages (5GL)

6. Careers In IT and a look to the Future

- Computer programmers
- MI-tech
- Computer translates “wish list” into machine language