

XX00FC41-3001

C++ PROGRAMMING

Wednesday 2022/09/14

TODAY

- Problem Solving
- Functions
- Security: buffer overflow
- Online Compiler

ANNOUNCEMENTS

- TODAY'S Extra Sessions is cancelled
- Exam:
 - 2022-09-26
 - Morning/ Evening
 - Online (Camera) / Campus
 - Topics

PROBLEM SOLVING

- Agile vs waterfall
- V Model
- NASA handbook: p16,p18

PROGRAMMING BEYOND PRACTICES

- eBook
- Review

GOOD PROGRAMMER?

Our job as programmers is to express computations:

- Correctly
- Simply
- Efficiently

ORGANIZING A PROGRAM

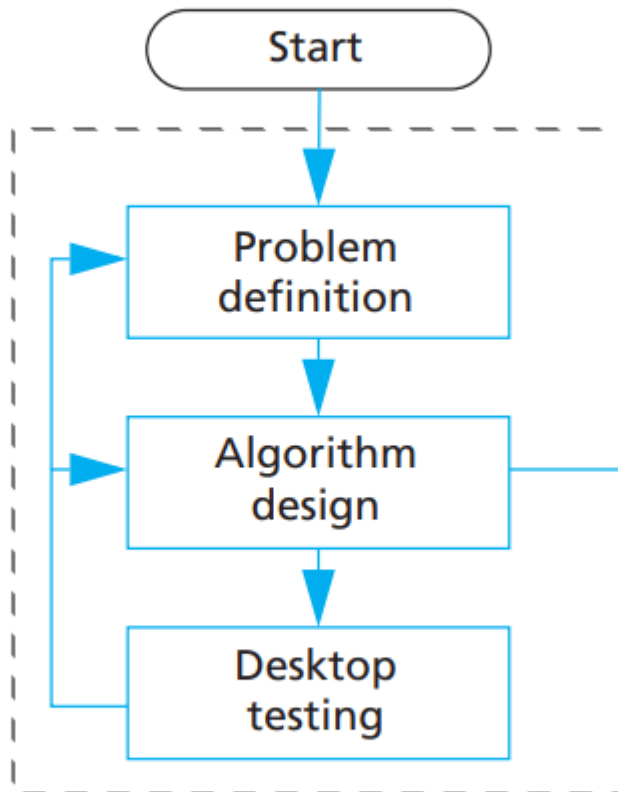
Our tools

- Abstraction: Hide details
- Divide and conquer: divide large problem into several little ones.
- System thinking

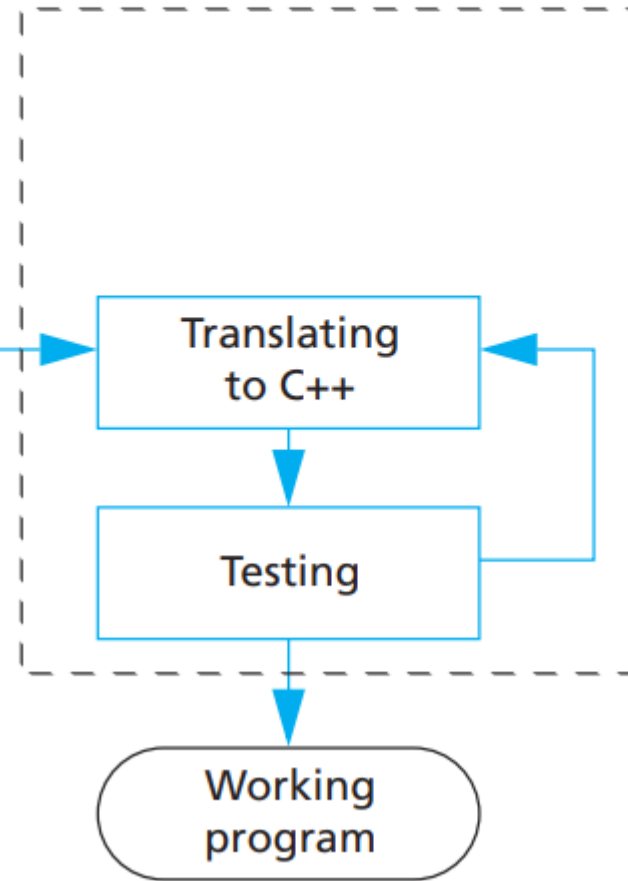
STAGES OF DEVELOPMENT

Program Design Process

Problem-solving phase



Implementation phase



STAGES OF DEVELOPMENT ...

- Analysis: set of requirements
- Design: Overall structure for the system, deciding which parts the implementation should have and how those parts should communicate.
- Implementation: Write the code, debug, and test

Group Discussion 1

FUNCTIONS

- time vs space domains
- value-returning functions vs non-value returning functions
- function parameters and arguments

Pair Programming 1

MORE ON FUNCTIONS

- lifetime vs Scope
- Rule of thumb

Group Discussion 2

SECURITY

- Calling convention
- Buffer overflow
- stack buffer overflows
- Challenges

Pair Programming 2

Survey

LINKS

- [learncpp](#)
- [Online Compiler](#)

BACK UP SLIDE

- Waterfall vs V vs Agile

Thank You!

