UTS
UNIVERSITY OF TECHNOLOGY SYDNEY

PROGRAMMING IN THE LARGE

BEESHANGA ABEWARDANA JAYAWICKRAMA

UTS:
ENGINEERING AND
INFORMATION
TECHNOLOGY

feit.uts.edu.au

MANAGING COMPLEXITY

Procedural Abstraction

> Breakdown the task into functions/procedures

> Separate what the function does from how it does it

Data Abstraction

> Think about what data represents, instead of how it is stored (e.g. use struct to store custom defined data types)

Information Hiding

> Implementation details should not be disclosed to users where possible

Reusable Code

> Collections of functions stored as a library that links to multiple programs

DEVELOPING COMPLEX C PROGRAMS

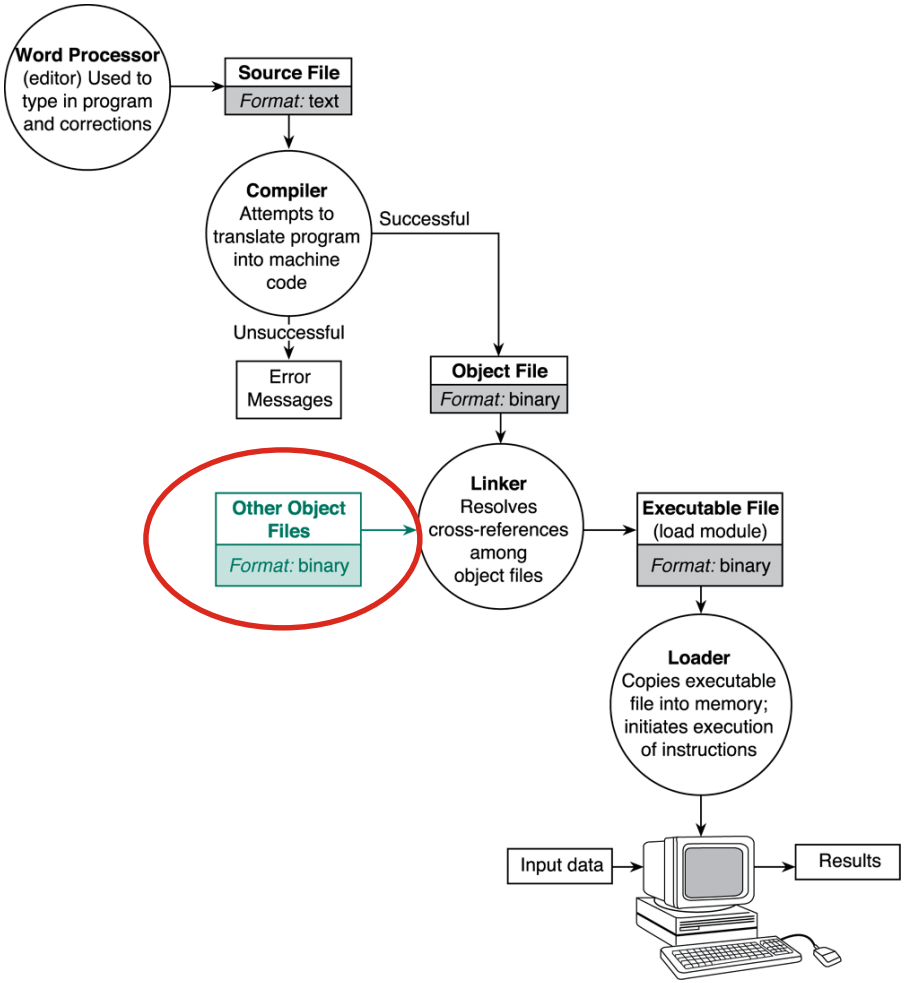
Standard C libraries are examples for complex C programs – stdio.h, stdlib.h, string.h, math.h, etc.

> Provides access to reusable procedures

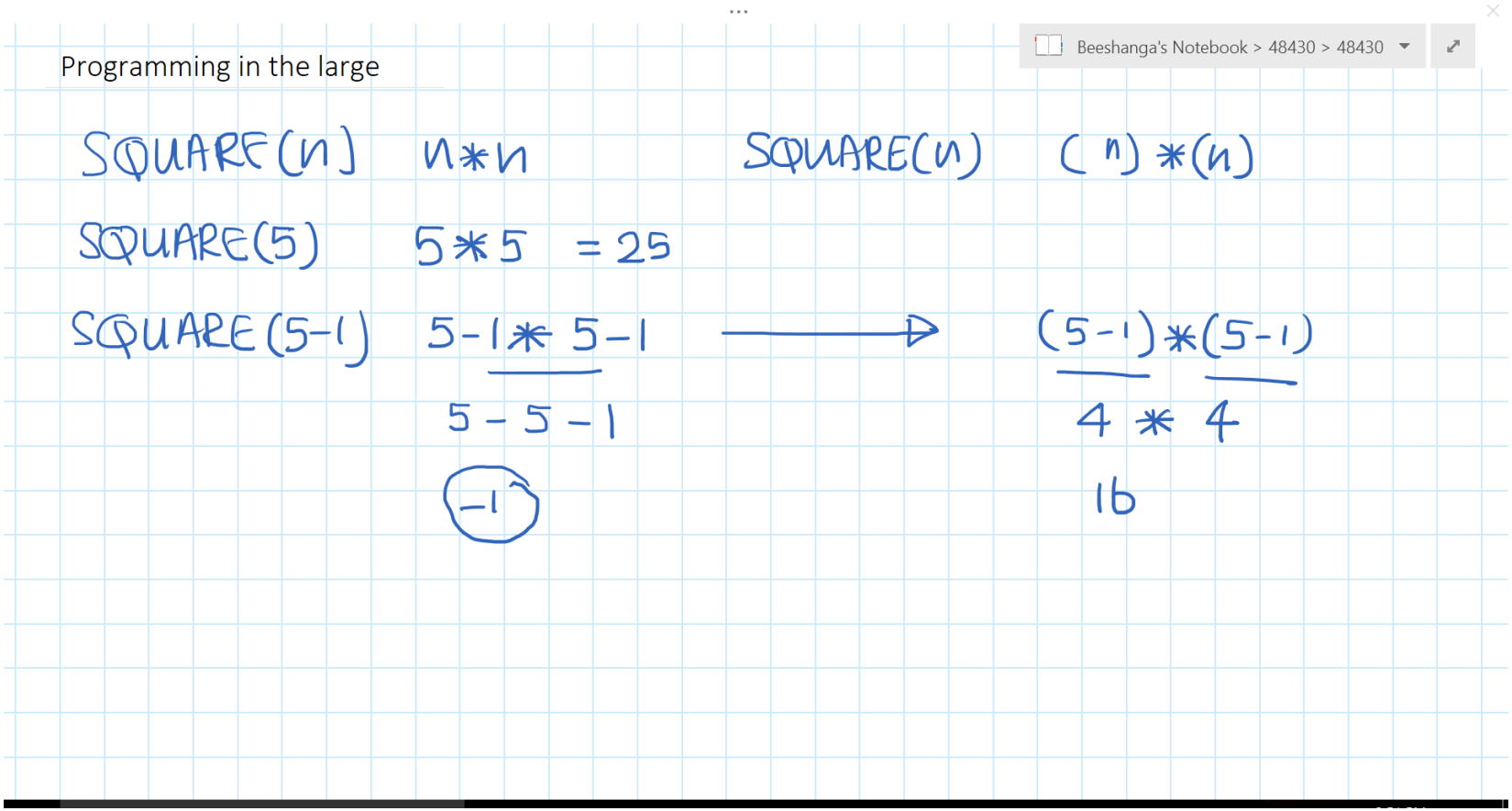
> Header files tell the user what is done, not how it is done

When developing large scale programs often custom libraries are produced

COMPILATION PROCESS



NOTES


Programming in the large
Beeshanga's Notebook > 48430 > 48430
SQUARE(n) n*n
SQUARE(5) 5*5 = 25
SQUARE(5-1) 5-1 * 5-1
5 - 5 - 1
-1
SQUARE(n) (n) * (n)
(5-1) * (5-1)
4 * 4
16