

COMP 1202 12 OCT 2015: week 3

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for  
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## Building Better Programs

Computational Thinking

Intro to Algorithms

- \* Programming help any language floor 3 Zepher  
10 → 12, 2 → 5pm Mon-FRI  
+ solutions support line

Algorithm al-khwarizmi

sequence of finite steps to solve a problem

better algorithms have better performance, precision

low error rate, scant resource use, multi-threaded

for performance of right for architecture, complexity

scalability, elegance (ingenious simplicity) neatness

reusability

1970s → 90s performance was paramount

then less vital, but resurgence due to big data  
+ additional devices such as phones.

Task - break down making a cup of tea into  
understandable task list, group tasks.

(Groups of five or so discussed, wrote down then swapped with others to respond)

issues included lack of quantities for sugar or milk, time to let tea brew, differing styles - english, chinese, assumptions of the presence of milk, teabags, teapot etc. (electric kettle, gas ...)

beware unforgiving nature of machines - unambiguous instructions.

Groups of actions are called sub-routines, procedures ~~or~~ or methods (java) depending on ~~the~~ programming language. Some may be suitable for re-use in other programmes.

see slides for java classes explanation