NUS National University of Singapore

School of Computing

Computational Thinking

Video 6.0

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Learn CT & Develop ITeMS

Content of Lecture 6

- Introduction (this video)
  - Details of Tutorials & Readings/Watching
- Bill Gates, Pancake Flipping, Algorithms
- Algorithm Design (& examples)
- Developing ITeMS
- Computability and Efficiency

Tutorial & Readings in CT

- Tutorial (discussion)
  - D1-D4 (short discussion questions)
  - Prepare your solution attempts before class;
- CT Submissions
  - Q1-Q3 (based on lecture videos)
  - Q4 (based on reading)
  - Q1 to be done before tutorial.
    Bring "solution" to class.

Readings & Videos in CT

- Readings
  - Jeannette Wing's 2006 article on CT
    - https://www.cs.cmu.edu/~15110-s13/Wing06-ct.pdf
  - Counting in Binary
    - *Article will be in e-reserves* (*coming soon*)
- Videos to watch
  - CT: A digital age skill for everyone (video from ISTE)
    - https://www.youtube.com/watch?v=VFcUgSYyRPg
  - Sorting video (from TED-Ed)
    - https://www.youtube.com/watch?v=WaNLJf8xzC4

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Computational Thinking involves

Problem Formulation

Abstraction

Thinking Abstractly, Algorithmically, Recursively…

Algorithm Design

Decomposition Composition

Finding a Pattern

…

Developing ITeMS

(End of video 6.0)

If you want to contact me,

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