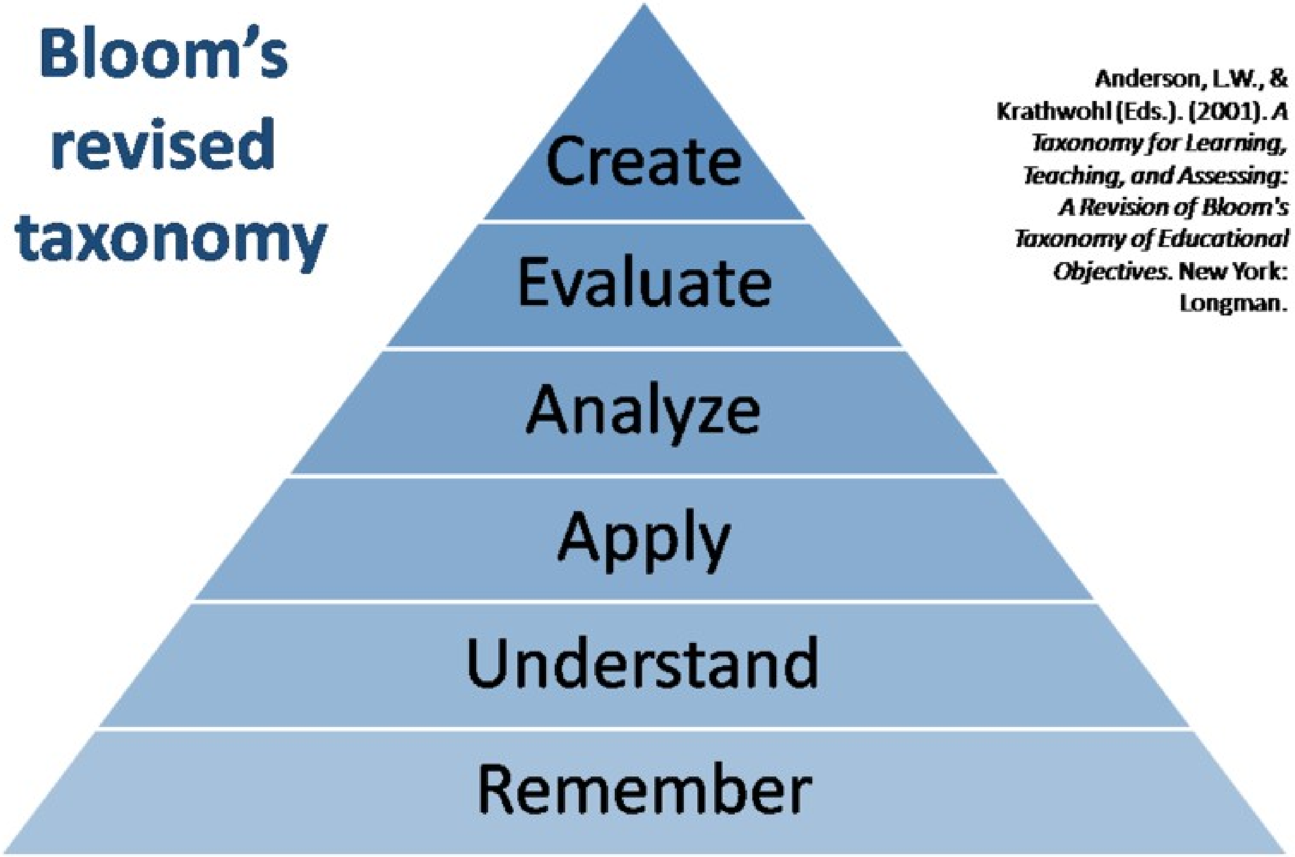
Exam Format

- 39 multiple choice
- 2 short design problems
- feedback



Bloom's revised taxonomy

Create

Evaluate

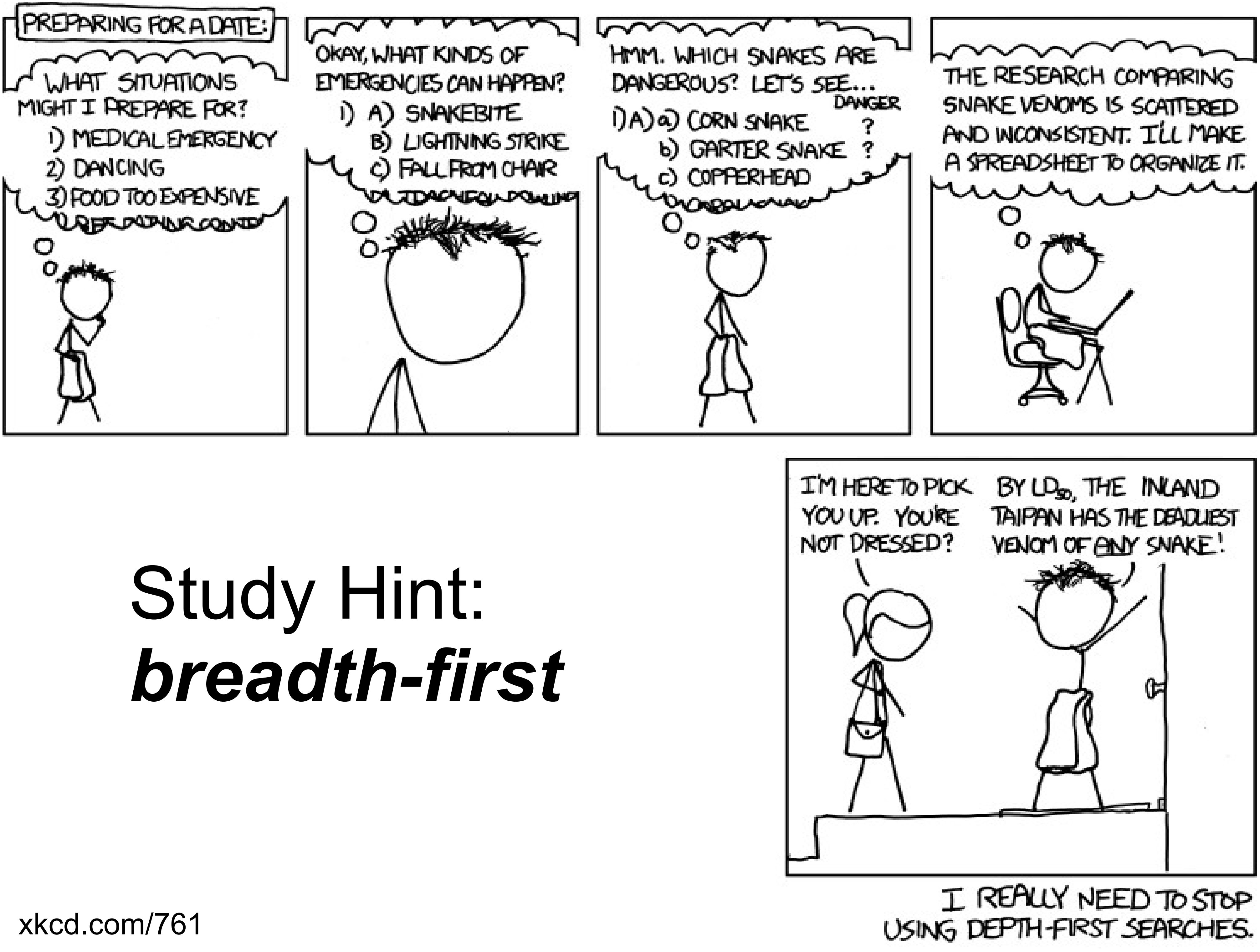
Analyze

Apply

Understand

Remember

Anderson, L.W., & Krathwohl (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.


PREPARING FOR A DATE:
WHAT SITUATIONS MIGHT I PREPARE FOR?
1) MEDICAL EMERGENCY
2) DANCING
3) FOOD TOO EXPENSIVE
OKAY, WHAT KINDS OF EMERGENCIES CAN HAPPEN?
1) A) SNAKEBITE
B) LIGHTNING STRIKE
C) FALL FROM CHAIR
HMM. WHICH SNAKES ARE DANGEROUS? LET'S SEE...
DANGER
1) A) a) CORN SNAKE ?
b) GARTER SNAKE ?
c) COPPERHEAD ?
THE RESEARCH COMPARING SNAKE VENOMS IS SCATTERED AND INCONSISTENT. I'LL MAKE A SPREADSHEET TO ORGANIZE IT.
I'M HERE TO PICK YOU UP. YOU'RE NOT DRESSED?
BY LD50, THE INLAND TAIPAN HAS THE DEADLIEST VENOM OF ANY SNAKE!
I REALLY NEED TO STOP USING DEPTH-FIRST SEARCHES.

Study Hint:
breadth-first

xkcd.com/761

Topic	Source	#?
UML Class Diagrams	Previous courses, web, etc	5
Design Patterns	Gamma et al. slides	5+2
Architectural Styles	Garlan & Shaw slides	6
Architecture Types	Hassan + Bowman slides	3
4+1 Views	Kruchten	4
Web/Enterprise	slides	11
Creativity	slides	5

Topics Not on Midterm (may be on final)

- Guest Presentation
  - Ian Davis (LSEdit)
- Design Processes
  - normal vs radical design
  - agile, RUP
- Case Studies
  - Linux, web servers, seL4 microkernel, KWIC, styles/compilers, styles/oscilliscopes
- Invariants, properties, verification, etc.
  - Alloy + Spin

Architectural Styles

- Styles
  - pipe & filter
  - data abstraction
  - implicit invocation
  - layered
  - repository
  - interpreter style
- For each
  - know the intent, advantages, disadvantages, variations, applications

Design Pattern

- Patterns
  - Singleton, Adapter, Bridge, Façade, Command, Iterator, Observer, Strategy, Composite, Visitor, Interpreter
- For each
  - intent, class diagram
  - applicability
    - given a scenario, which and why
  - discussion in the class

Types of Architectures

- Reference, Conceptual, Concrete
  - definition & differences
    - The role of each in the software design process
  - drift / erosion
    - definition

Architectural Views

- 4+1 View
  - Kruchten
- For each view
  - definition
  - diagram
  - purpose
  - usage
    - what views are required and what views are not and when

Enterprise Architecture

- Types of Architectural Styles
- Evolution
  - know the differences between
    - first, second, & third (gwt) generation
    - improvement & weaknesses
  - draw the diagrams
    - identify components & connectors clearly
    - request-response cycle

Enterprise Architecture

- Synchronous & asynchronous
- Separation of concerns
  - responsibility of each tier
- Functional vs. non-functional requirements
  - know the difference
  - which ones are
    - honoured (& why)
    - violated (& why)