

EECS 560 Sample Exam

- (1) Describe the advantage of passing rvalue reference as parameter.
- (2) What is the time complexity of searching for a specific element from a linked list? How about from a vector?
- (3) Explain why rehashing is required when table doubling/halving happens.
- (4) What is “Big Five” defined in the context of C++ object interface?
- (5) How many pointers should you store as the data field of a doubly-linked list object that contains 15 elements?
- (6) Which data structure has the first-in-first-out behavior? Given a real-world example where this data structure is used.
- (7) Convert the infix expression $12 + (27 * (13 + 9)) / (56 - 30)$ into a postfix expression. Show all steps.
- (8) Calculate the final result of the postfix expression from the previous question. Show all steps.
- (9) What is the worst-case scenario time complexity for an insertion into a vector? Explain why.
- (10) Remember we discussed the implementation of queue and stack as circular arrays. What would happen for queue if we do not implement it as circular? And what would happen for stack?