Midterm Exams

Task 1:

- Declare a structure "Address" that can hold at least name, telephone number, and e-mail address, and write a program that can handle about 100 address data.
- Read about 10 address data from the input file and sorted by acending names, search a name by the binary search for this task and write the data matched first to the output file.
    - (1) Implement this program using an array of structure.
    - (2) Implement this program using a singly-linked list or a doubly-linked list. Confirm the second search is accelerated by moving data matched to the head of list (self-organizing search).
    - (3) Implement this program using queue.
    - (4) Read address data from the standard input, and add them to the queue. When the program reads the 11th address data, the queue is already full. So the program removes the first address data and adds the 11th address data. Print the removed address data to the standard output.

Task 2:

- Write a program that converts an expression in the infix notation to an expression in the reverse polish notation. An expression consists of single-digit positive numbers (from 1 to 9) and four operators (+, -, *, /). Read an expression in the infix notation from the standard input, convert it to the reverse polish notation, and output an expression to the standard output. Refer to the textbook for more details about the Reverse Polish Notation. For example,
  3+5*4 is input, the following will be output.
  3 5 4 * +
- Using stack and reverse polish notation above, write a program evalution an an expression in the infix notation.
  For example,
  3+5*4 is input, the following will be output.
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Lưu ý:

- Sinh viên nộp bài lưu qua MS Teams.

- Sinh viên có thể dùng github để upload toàn bộ chương trình, dữ liệu, readme và gửi link github