1-5 数据与数据结构 (II)

魏恒峰

hfwei@nju.edu.cn

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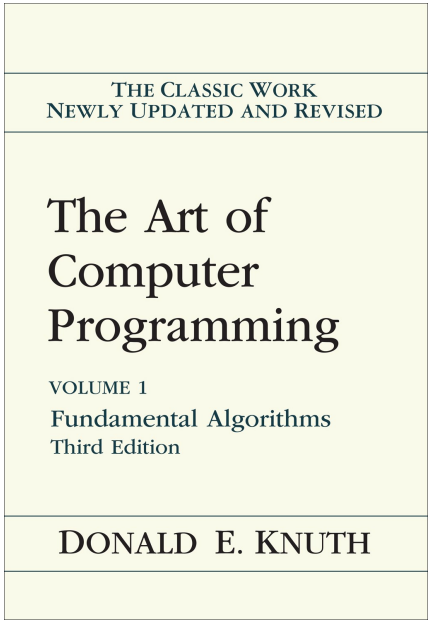
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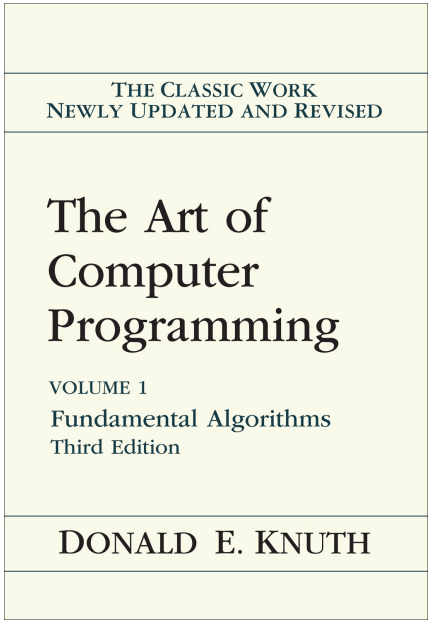
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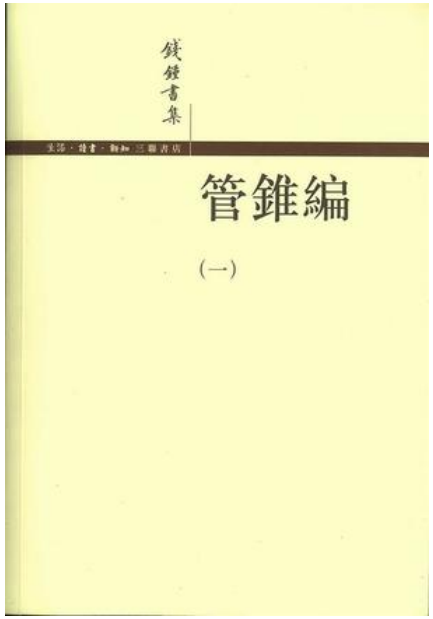
管錐編
(一)


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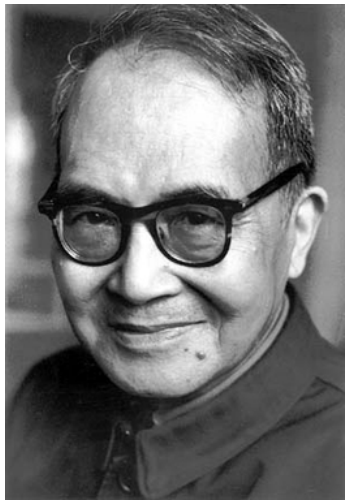
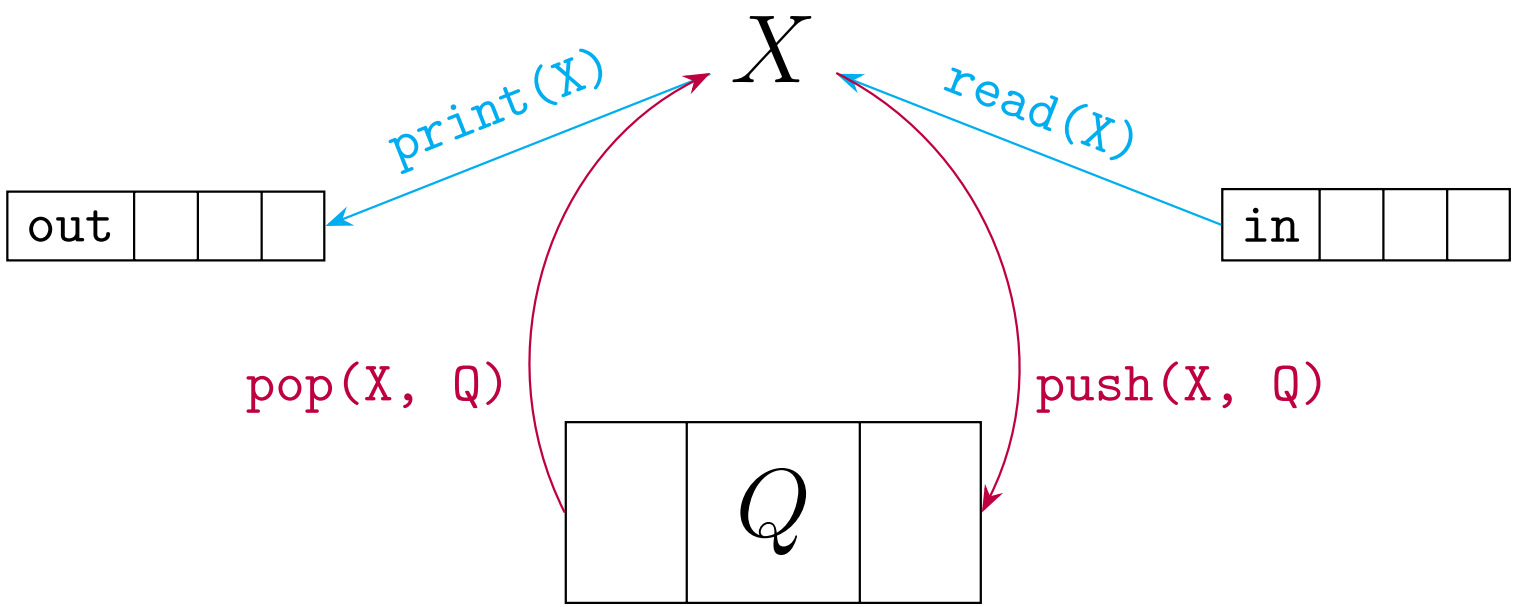


Stackable/Queueable Permutations

DH 2.14: Queueable Permutations

$$\texttt{out} = (a_1, \cdots, a_n) \xleftarrow[X=0]{Q=\emptyset} \texttt{in} = (1, \cdots, n)$$

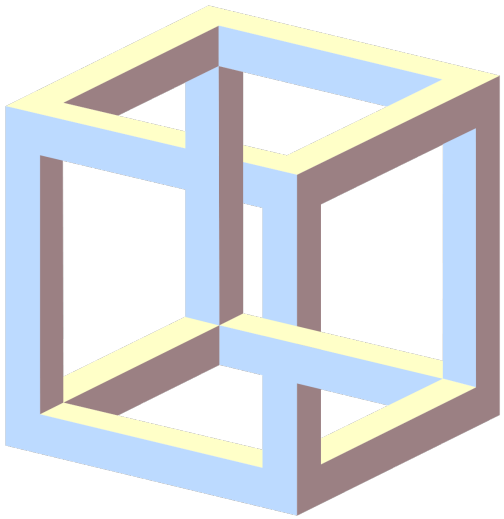


DH 2.14: Queueable Permutations

(a) Show that the permutations given in Excecise 2.12(b) are queueable.

(i) $(3, 1, 2)$

(ii) $(4, 5, 3, 7, 2, 1, 6)$



DH 2.14: Queueable Permutations

(b) Prove that every permutation can be obtained by a queue.

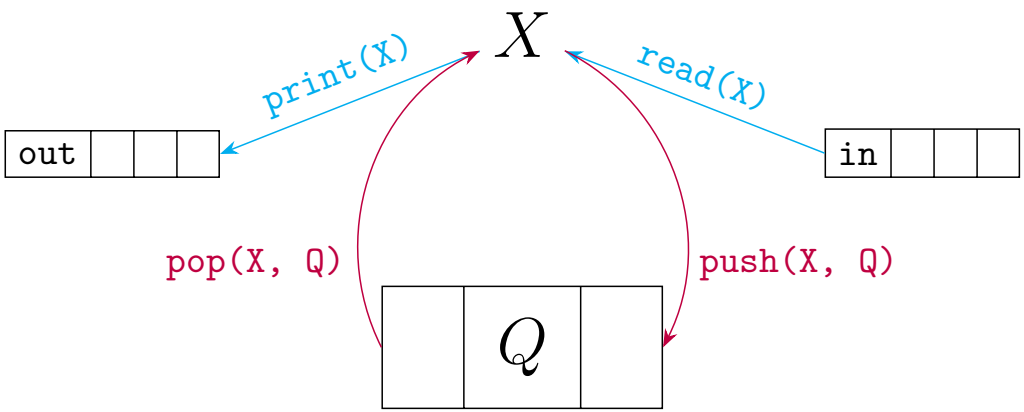
Alg here.

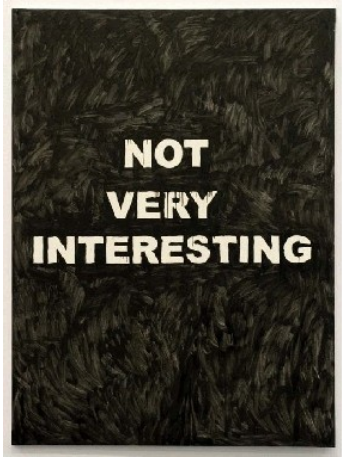
DH 2.14: Queueable Permutations

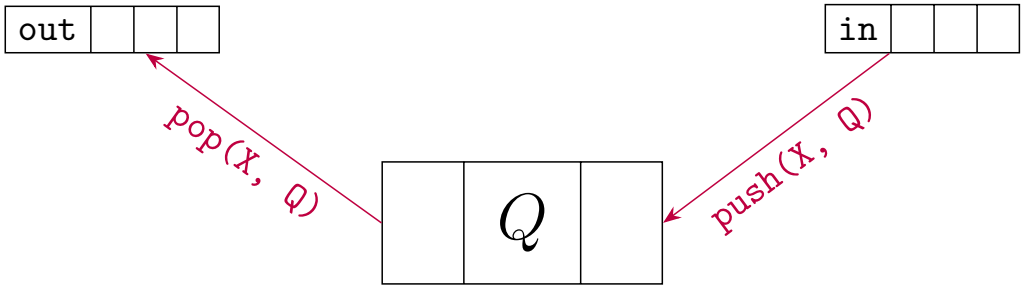
(c) Prove that every permutation can be obtained by two stacks.

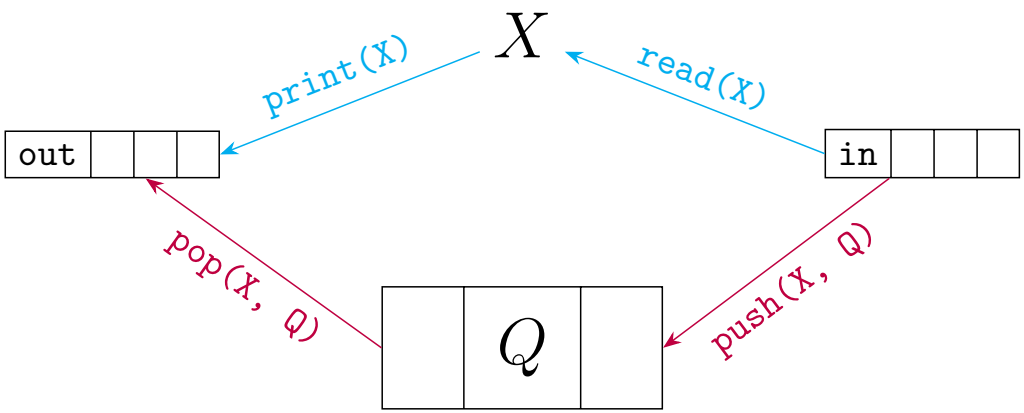
DH 2.15: Algorithm for Queueable Permutations

Extend the algorithm you were asked to design in Exercise 2.13, so that if the given permutation cannot be obtained by a stack, the algorithm will print the series of operations on two stacks that will generate it.

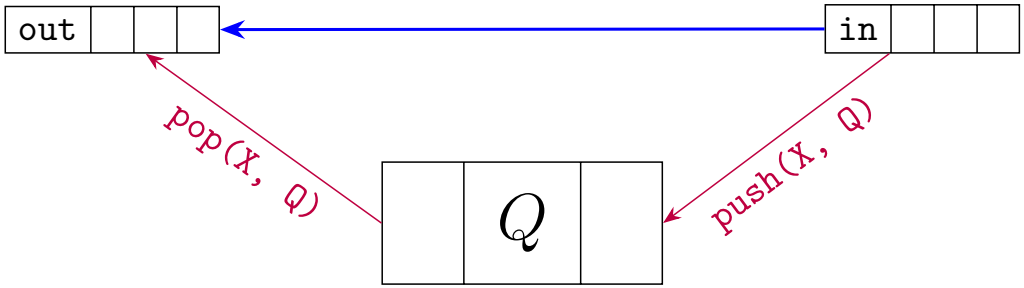

X
print(X)
read(X)
out
in
pop(X, Q)
push(X, Q)
Q


NOT
VERY
INTERESTING


out
in
pop(X, Q)
push(X, Q)
Q


X
print(X)
read(X)
out
in
pop(X, Q)
push(X, Q)
Q


哎呦
有点意思


out
in
pop(X, Q)
push(X, Q)
Q