import copy

queue = [143, 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130]

# FCFS

prev = None

total = 0

for i in queue:

if prev is not None:

total += abs(i-prev)

prev = i

else:

prev = i

print "a. FCFS:", total

# SSTF

q = copy.copy(queue)

def find\_nearest(n):

nearest = None

for i in q:

if nearest is None:

nearest = i

elif abs(i-n) < abs(nearest-n):

nearest = i

return nearest

curr = q.pop(0)

total = 0

seq = [curr]

while len(q)>0:

nxt = find\_nearest(curr)

seq.append(nxt)

total += abs(nxt - curr)

q.remove(nxt)

curr = nxt

print "b. SSTF:", total, seq

# SCAN

q = copy.copy(queue)

total = 0

direction = 1

curr = q.pop(0)

seq = [curr]

while len(q)>0:

curr += direction

total += 1

if curr in q:

q.remove(curr)

seq.append(curr)

if curr == 4999:

direction = -1

if curr == 0:

direction = 1

print "c. SCAN:", total, seq

# LOOK

q = copy.copy(queue)

total = 0

direction = 1

curr = q.pop(0)

seq = [curr]

while len(q)>0:

curr += direction

total += 1

if curr in q:

q.remove(curr)

seq.append(curr)

if len(q) == 0:

break

if max(q) < curr:

direction = -1

if min(q) > curr:

direction = 1

print "d. LOOK:", total, seq

# C-SCAN

q = copy.copy(queue)

total = 0

curr = q.pop(0)

seq = [curr]

while len(q)>0:

curr += 1

total += 1

if curr in q:

q.remove(curr)

seq.append(curr)

if curr == 4999:

curr = 0

total += 4999

print "e. C-SCAN:", total, seq

# C-LOOK

q = copy.copy(queue)

total = 0

curr = q.pop(0)

seq = [curr]

while len(q)>0:

curr += 1

total += 1

if curr in q:

q.remove(curr)

seq.append(curr)

if len(q) == 0:

break

if max(q) < curr:

tmp = curr

curr = min(q) -1

total += abs(tmp - curr) -2

print "f. C-LOOK:", total, seq