

Consecutive Array "easier" insert by keeping "end"
slightly harder putAtIndex and removeAtIndex

* array for storing top game entries

```
class Record {
public:
    String name;
    int score;
};
```

need:

- ① often: list top 20 players in order
- ① often: update list by "inserting" new record & removing old one (lower)

- ② seldom: remove some records

* if using Fixed Len Array of size 20

- ① find First, find Second, ..., find 19th, find 20th ?
same for using Consecutive Array

Ordered Array:

a Consecutive Array such that

$arr[0] \geq arr[1] \geq arr[2] \geq \dots \geq arr[end-1]$
• Score

- ① construct

from nothing : ConsecutiveArray.construct()

from ConsecutiveArray : selectionSort()

(new) list Orderly()

for $i \leftarrow 0$ to $len-1$

print $arr[i]$

① findAt Index : trivial

② putAt Index : VERY restricted

③ insert (value) :

先"找到"

從頭 for $i \leftarrow 0$ to $end-1$

if $arr[i] < value$

插隊

從尾 for $i \leftarrow end-1$ to 0

if $arr[i] > value$

插隊

④ remove At Index (idx) :

"補位"

for $i \leftarrow idx+1$ to $end-1$

$arr[i-1] \leftarrow arr[i]$

$end \leftarrow end-1$

找到 + 插隊

can be combined here

(see textbook)

* about "找到" find Index Of (value)

find Record of (key)

score here

naive: Sequential Search

$len-1$ non-Consecutive

for $i \leftarrow 0$ to $end-1$ Consecutive

if $arr[i].score = key$

return $arr[i]$

return FAIL

Ordered 偷吃步

else if $arr[i].score < key$

return FAIL