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▼ Basic data structures

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FINDING THE MINIMUM (20/20 points)

Consider a non empty array of integers `a`.

1. Write a function `min : int array -> int` that returns the minimal element of `a`.
2. Write a function `min_index : int array -> int` that returns the index of the minimal element of `a`.

Do you think these functions work well on large arrays ?

3. Define a variable `it_scales` and set it to `"yes"` or `"no"`.

YOUR OCAML ENVIRONMENT

```
1 let min a =
2   let rec min_rec array inf sup =
3     if sup = inf then array.(inf) else
4     if array.(sup) > array.(inf) then
5       min_rec array inf (sup - 1) else
6       min_rec array (inf + 1) sup
7   in
8   min_rec a 0 (Array.length a - 1)
9 ;;
10
11 let min_index a =
12   let rec min_index_rec array sup=
13     if a.(sup) = min array then sup else
14     min_index_rec array (sup - 1)
15   in
16   min_index_rec a (Array.length a - 1)
17 ;;
18
19 let it_scales =
20   "no" ;;
21 |
```

Evaluate >

Switch >>

Typecheck

Reset Templ

Full-screen |

Check & Sa

Exercise complete (click for details)

20 pts

Completed, 10 pts

▼ Exercise 1: min

Found min with compatible type.

Computing min [|11; 7; -9; 4|]

Correct value -9

1 pt

Computing min [| -1; -9; -4; 14; -3; 8; -15; 0; -14; 4; -10|]

Correct value -15

1 pt

Computing min [| -1; 7; 11; -5; -6|]

Correct value -6

1 pt

Computing min [| -10; 2; 13; -14; -1; 11; -7; -5; 3; -8; 5|]

Correct value -14

1 pt

Computing min [|4; 2; 14; 6; 3; -12; -7|]

Correct value -12

1 pt

Computing min [| -15; -4; 5; 4; -13; -14; -1; 12|]

Correct value -15

1 pt

Computing min [|13; 8; -8; 6; 1; 4; -14; 12; -5|]

Correct value -14

1 pt

Computing min [|5; 13; -15; -9; -11|]

Correct value -15

1 pt

Computing min [| -5; -14|]

Correct value -14

1 pt

Computing min [| -10; 13; -11; 5; -5; -2; 0; -9|]

Correct value -11

1 pt

▼ Exercise 2: min_index

Completed, 10 pts

Found min_index with compatible type.

Correct value 2	1 pt
Computing min_index [-1; 12; 9; 10; 6; -15; 11; 3]	
Correct value 5	1 pt
Computing min_index [-13; 14; -7; -11; -10]	
Correct value 0	1 pt
Computing min_index [-13; 1; -15; -7; 0; 3; -3; 9]	
Correct value 2	1 pt
Computing min_index [1; 9; -10; 5; -12; -14]	
Correct value 5	1 pt
Computing min_index [5; 1; -10]	
Correct value 2	1 pt
Computing min_index [10; -9; 1; -11]	
Correct value 3	1 pt
Computing min_index [11; 3; 14; 12; -10]	
Correct value 4	1 pt
Computing min_index [11; 12; -15; -8; 4]	
Correct value 2	1 pt
Found it_scales with compatible type.	
You're probably right.	
Let's write better solution in the next exercise	

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