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ROTATING THE CONTENTS OF AN ARRAY (22/22 points)

In this exercise, you will improve the code shown in the course (and given in the template) for rotating arrays.

1. There is something perfectible with the code of `rotate`. Find what, and fix the function!.
2. Define `rotate_by: 'a array -> int -> unit` adding a parameter that allows to rotate by `n` positions. For instance, `rotate_by [|1;2;3;4|] 3` should yield `[|4;1;2;3|]`.

YOUR OCAML ENVIRONMENT

```
1 let rotate a =
2   try
3     let n = Array.length a in
4     let v = a.(0) in
5     for i = 0 to n-2 do
6       a.(i) <- a.(i+1)
7     done;
8     a.(n-1) <- v
9   with _ -> ()
10 ;;
11
12 let rotate_by a n =
13   if n >= 0 then
14     for i = 1 to n do
15       rotate a
16     done
17   else
18     let stop = Array.length a in
19     for i = 1 to (n + stop) do
20       rotate a
21     done
22 ;;
23
```

Evaluate >

Switch >>

Typechecked

Reset Templ

Full-screen |

Check & Sa

Exercise complete (click for details)

22 pts

Completed, 11 pts

v Exercise 1: rotate

Found rotate with compatible type.

Computing rotate [| -2 |]

Correct value [| -2 |]

1 pt

Computing rotate [| -3; -4; -2; -4; -3; -2; -1; 3; 3; 1 |]

Correct value [| -4; -2; -4; -3; -2; -1; 3; 3; 1; -3 |]

1 pt

Computing rotate [| -2; 1; -1; -4 |]

Correct value [| 1; -1; -4; -2 |]

1 pt

Computing rotate [| -2 |]

Correct value [| -2 |]

1 pt

Computing rotate [| -2; 3; 0; -2; -2; -2 |]

Correct value [| 3; 0; -2; -2; -2; -2 |]

1 pt

Found rotate with compatible type.

Computing rotate [| |]

Correct value [| |]

1 pt

Computing rotate [| 'a'; 'n'; 'd'; 'h'; 'e' |]

Correct value [| 'n'; 'd'; 'h'; 'e'; 'a' |]

1 pt

Computing rotate [| 'k'; 'f' |]

Correct value [| 'f'; 'k' |]

1 pt

Computing rotate [| 'q'; 'k'; 'y'; 'w'; 'x'; 'r'; 't'; 'h'; 'i' |]

Correct value [| 'k'; 'y'; 'w'; 'x'; 'r'; 't'; 'h'; 'i'; 'q' |]

1 pt

Computing rotate [| 'e'; 'n' |]

Correct value [| 'n'; 'e' |]

1 pt

Computing rotate [| 'f'; 'j' |]

Correct value [| 'j'; 'f' |]

1 pt

Computing rotate_by [-5; 0; 0; 1; -2]	1 pt
Computing rotate_by [-5; -5] 0	
Correct value [-5; -5]	1 pt
Computing rotate_by [4; -4; 2] 2	
Correct value [2; 4; -4]	1 pt
Computing rotate_by [2; -2; 1; 0] 4	
Correct value [2; -2; 1; 0]	1 pt
Computing rotate_by [4; -2; -3; 1; 2; 0; 0; -5; -2; 0] 3	
Correct value [1; 2; 0; 0; -5; -2; 0; 4; -2; -3]	1 pt
Found rotate_by with compatible type.	
Computing rotate_by [] 0	
Correct value []	1 pt
Computing rotate_by ['s'; 'r'; 'z'; 's'; 'a'; 'f'; 'g'] -3	
Correct value ['a'; 'f'; 'g'; 's'; 'r'; 'z'; 's']	1 pt
Computing rotate_by ['f'; 'e'; 'z'; 'k'; 'p'; 'j'; 'i'; 'f'; 't'; 'g'] -1	
Correct value ['g'; 'f'; 'e'; 'z'; 'k'; 'p'; 'j'; 'i'; 'f'; 't']	1 pt
Computing rotate_by ['h'; 's'; 's'; 'p'; 'z'; 'n'; 'c'; 'j'] 0	
Correct value ['h'; 's'; 's'; 'p'; 'z'; 'n'; 'c'; 'j']	1 pt
Computing rotate_by ['v'; 'i'] 1	
Correct value ['i'; 'v']	1 pt
Computing rotate_by ['i'] -1	
Correct value ['i']	1 pt

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