Algorithm 2 two-array medium

Input: sorted arrays A, B (1-based) with length n and m
Output: the medium of the two arrays

$i \leftarrow (m+n+1)/4$
$a_{left}, b_{left} \leftarrow 0$
while $i > 1$ **do**
    if $A[a_{left}+i] < B[b_{left}+i]$ **then**
        $a_{left} += i+1$
    else
        $b_{left} += i+1$
    end if
    $i \leftarrow (n+m-a_{left}-b_{left}+1)/4$
end while
if $m+n$ is odd **then**
    return $min(A[a_{left}], B[b_{left}])$
else
    return the average of the smaller 2 of A[i], A[i+1], B[i] and B[i+1]
end if