

## ESERCIZIO 2. pdf

### ESERCIZIO 10 - 90 parte

●  $\text{SELECT}(A, k)$  % trova l'elemento di rangok in A

if  $|A| = 1$  return  $(A[1])$

else

scegli  $q$  caso  $q$  e dividi A in  $A_1 = \{x \in A : x < q\}$

e  $A_2 = \{x \in A : x > q\}$ , calcola  $j = |A_1|$

if  $k = j + 1$  then return  $(q)$

else if  $k \leq j$  then return  $(\text{SELECT}(A_1, k))$

else return  $(\text{SELECT}(A_2, k - j - 1))$

●  $\text{SELECT}(A, k)$

$A = \{12, 3, 7, 2, 14, 8, 15, 5, 21, 6, 1, 10, 8, 4\}$

$q = 12$

$A_1 = \{3, 7, 2, 8, 5, 6, 1, 10, 8, 4\}$

$A_2 = \{14, 15, 21\}$

$j = 10$

$k = 11$  ? NO

$k \leq 10$   $\text{SELECT}(A_1, k)$

$q = 3$

$A_1 = \{2, 1\}$

$A_2 = \{7, 8, 5, 6, 10, 8, 4\}$

$j = 2$

$k = 3$  ? NO

$k \leq 2$   $\text{SELECT}(A_2, k)$

$q = 7$

$A_1 = \{5, 6, 4\}$

$A_2 = \{8, 10, 8\}$

$j = 3$

$k \leq j$   $\text{SELECT}(A_1, k)$

$q = 5$

$A_1 = \{4\}$

$A_2 = \{6\}$

$j = 1$

$k \leq j$   $\text{SELECT}(\text{SELECT}(A_1, 1))$

return 4