$O(1)$

Insert (val)
remove (val)
get Random ()

```
i   0  1  2  3  4
   [1. 1. 1. 2. 2]   ← vals.
```

$$\left\{ \begin{array}{l} 1 : [0, 1, 2], \\ 2 : [3, 4] \end{array} \right\}$$

↑   ↑

val   positions of val.

remove `1`

val   last

[1. 1. 1. 2. 2]

↑   ↑
P₁   P₂
↓   ↓

[1. 1. 2. 2. 1]

↑ pop

$$\left\{ \begin{array}{l} - \text{swap} \\ - \text{pop} \cdot \text{vals} \\ - \text{remove p1 from val} \\ - \text{remove p2 from last} \\ - \text{add p1 to last} \end{array} \right.$$