FORMATO TAD
TAREA INTEGRADORA I

Integrantes:
Juan David Bahamon Rodriguez
Carlos Javier Bolaños Riascos
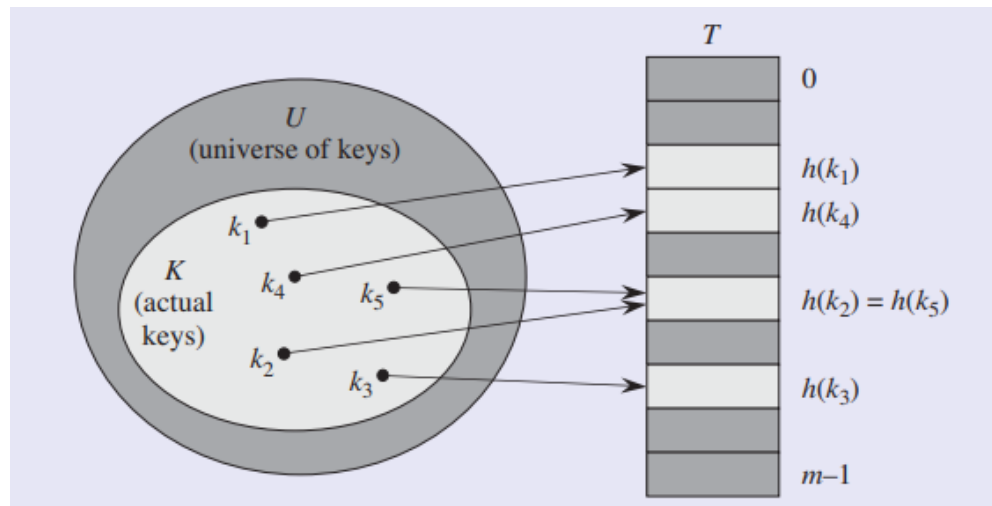Samuel Hernandez Espitia
David Esteban Peñaranda Scarpetta

- Realizar la TAD de las estructuras implementadas en la tarea integradora

---

Nombre: HashTable

Objeto abstracto:

$$HashTable = \ <h = \{h(k_1), h(k_2), h(k_3),..., h(k_{m-1})\}> \ tam = m$$
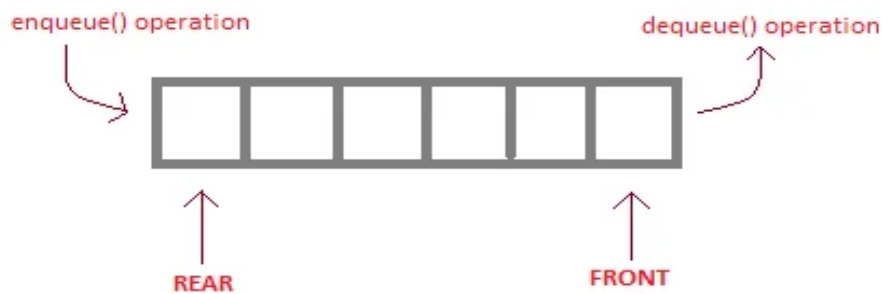

Invariante: $m \geq 0, \{c \mid c \in HT \ \wedge \ \forall c_i \in HT \ \wedge \ \forall c_j \in HT \ \wedge \ i \neq j \ \rightarrow e_i.k \neq e_j k\}$

Operaciones: ht = HashTable

- create: $\quad < \quad > \rightarrow < \quad void \quad >$
- put: $\quad < ht, i > \rightarrow < boolean >$
- remove: $\quad < ht, i > \rightarrow < boolean >$
- constains: $< ht, i > \rightarrow < boolean >$
- isEmpty: $< ht, i > \rightarrow < boolean >$

Nombre: Queue

Objeto abstracto:

enqueue( ) is the operation for adding an element into Queue.

dequeue( ) is the operation for removing an element from Queue .

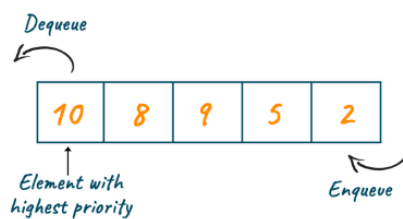**QUEUE DATA STRUCTURE**

Invariante:

Operaciones:
- create: < void >   →   < void >
- push: < Obj >   →   < void >
- isEmpty: <Queue a>   →   <boolean>
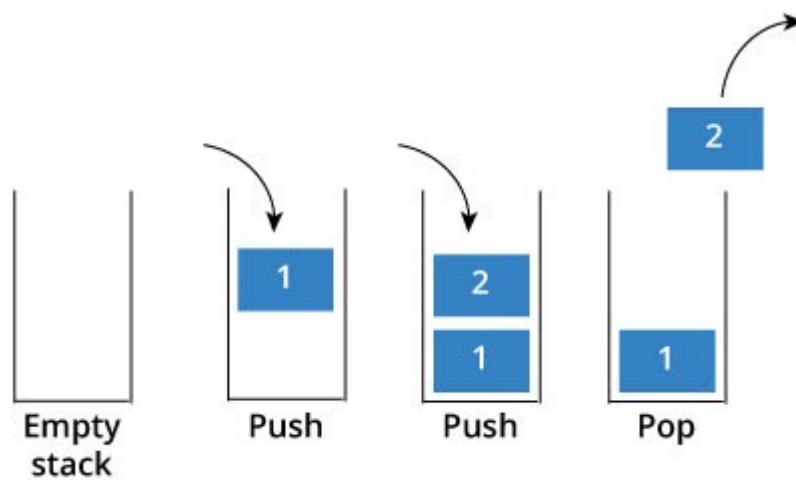- pop   <   > →   < void >

Nombre: Priority queue
Objeto abstracto: **Priority Queue** *Dequeue* | 10	8	9	5	2 | *Element with highest priority* *Enqueue*
Invariante:
Operaciones: ● insert :   \<Ord a\> →   \<a -\> CPriority a\> →   \<CPriority a\> ● first :   \<Ord a\> →   \<CPriority a\>   → \<a\> ● rest :   \<Ord a\> →   \<CPriority a\>   →   \<CPriority a\> ● isEmpty : \<Ord a\> → \<CPriority a\>   → \<boolean\> ● valid :   \<Ord a\> →   \<CPriority a\>   →   \<boolean\>

Nombre: Stack	
Objeto abstracto:	

Empty stack   Push   Push   Pop

Invariante:

Operaciones:
- create: < > → < void >
- size: < > → < int >
- push: < obj, stack > → < boolean >
- pop: < stack > → < boolean >
- isEmpty: < stack > → < boolean>