

# Data Structures

Damian Gordon



# Data Structures

- ▶ What is a queue?

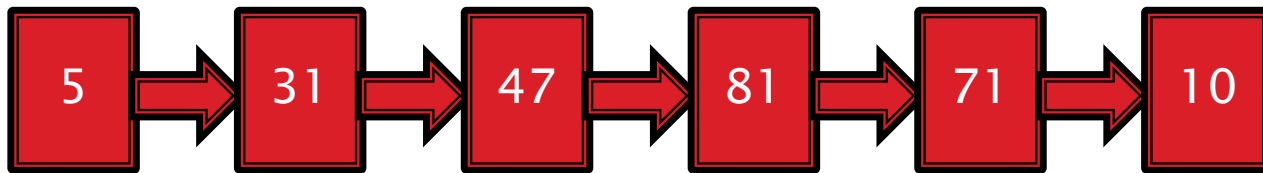
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- ▶ What is a queue?



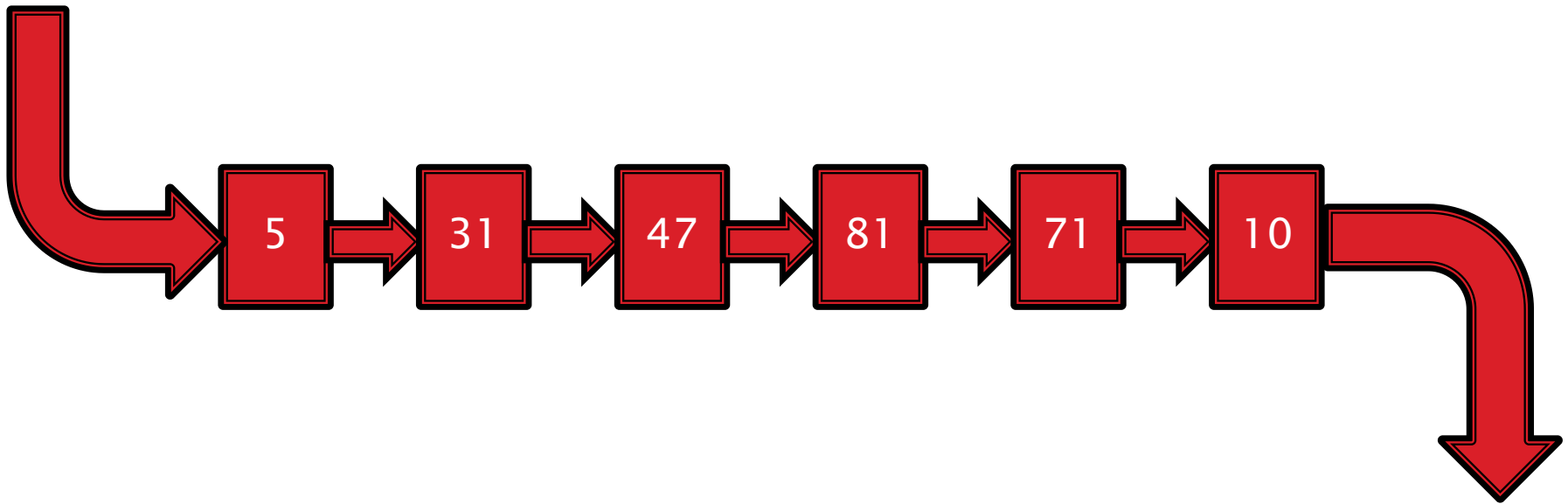
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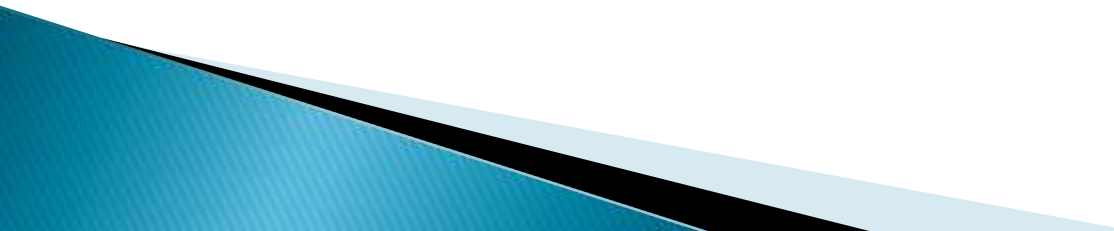


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# Data Structures

- ▶ What is a queue?
  - ▶ It's a structure that conforms to the principle of First In, First Out (FIFO).
  - ▶ The first item to join the queue is the first item to be served.
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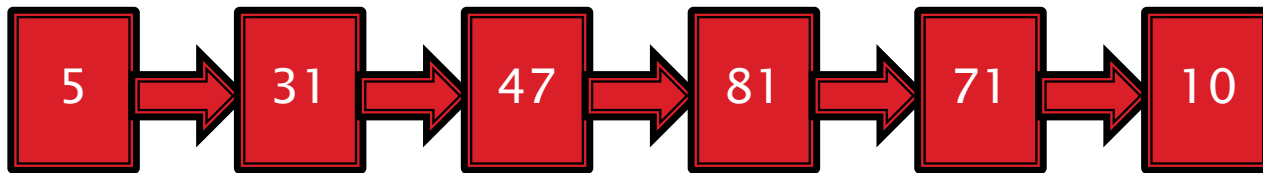
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- ▶ What is a stack?



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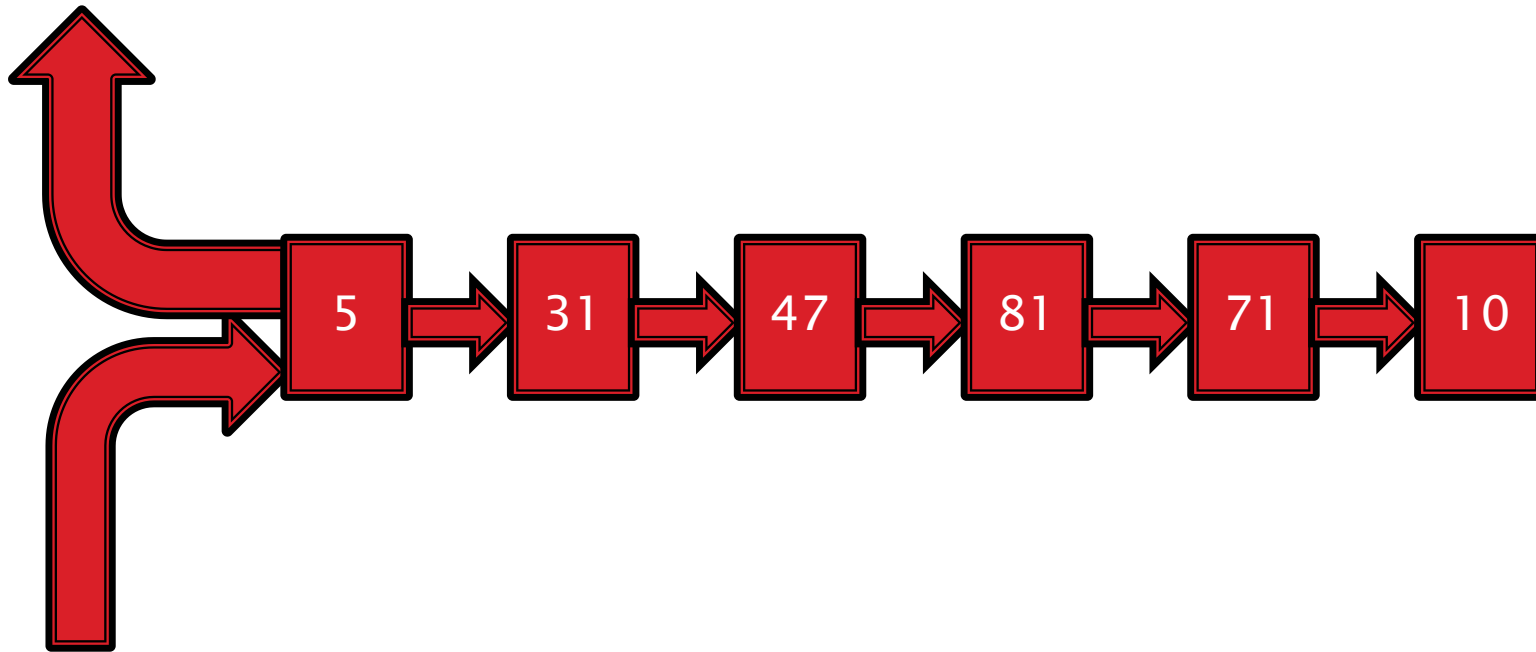
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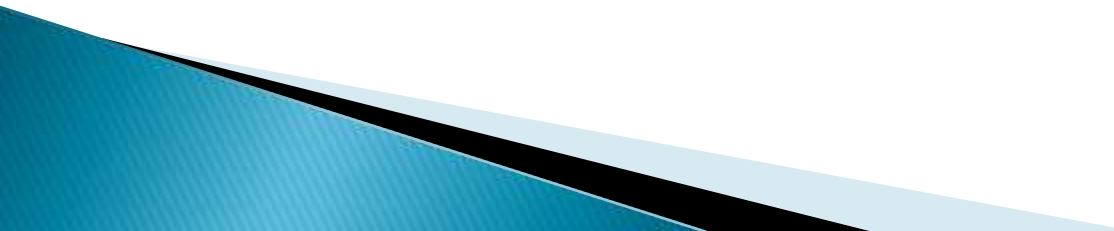


# Data Structures

- ▶ What is a stack?



# Data Structures

- ▶ What is a stack?
  - ▶ It's a structure that conforms to the principle of Last In, First Out (LIFO).
  - ▶ The last item to join the stack is the first item to be served.
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- ▶ What is a heap?

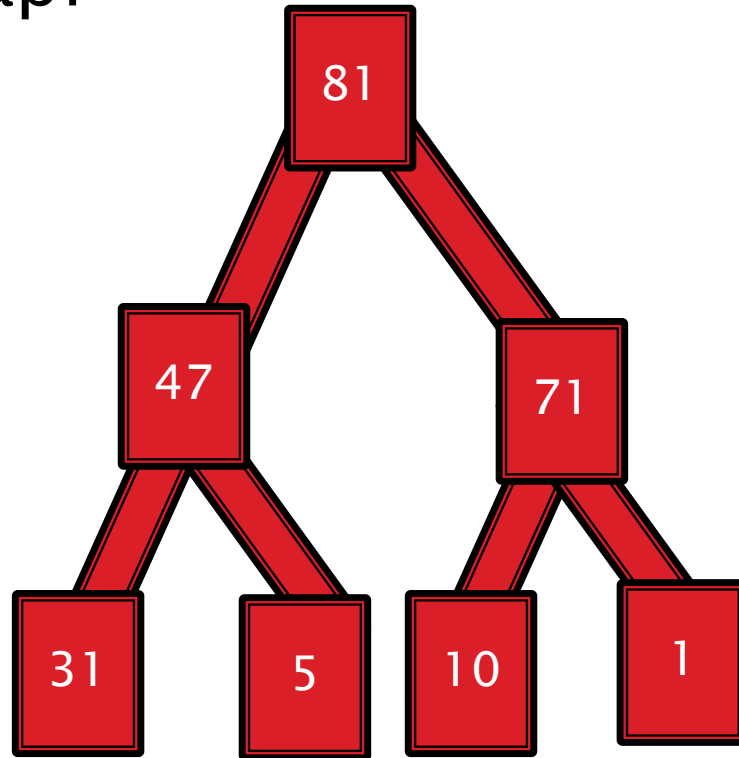
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- ▶ What is a heap?



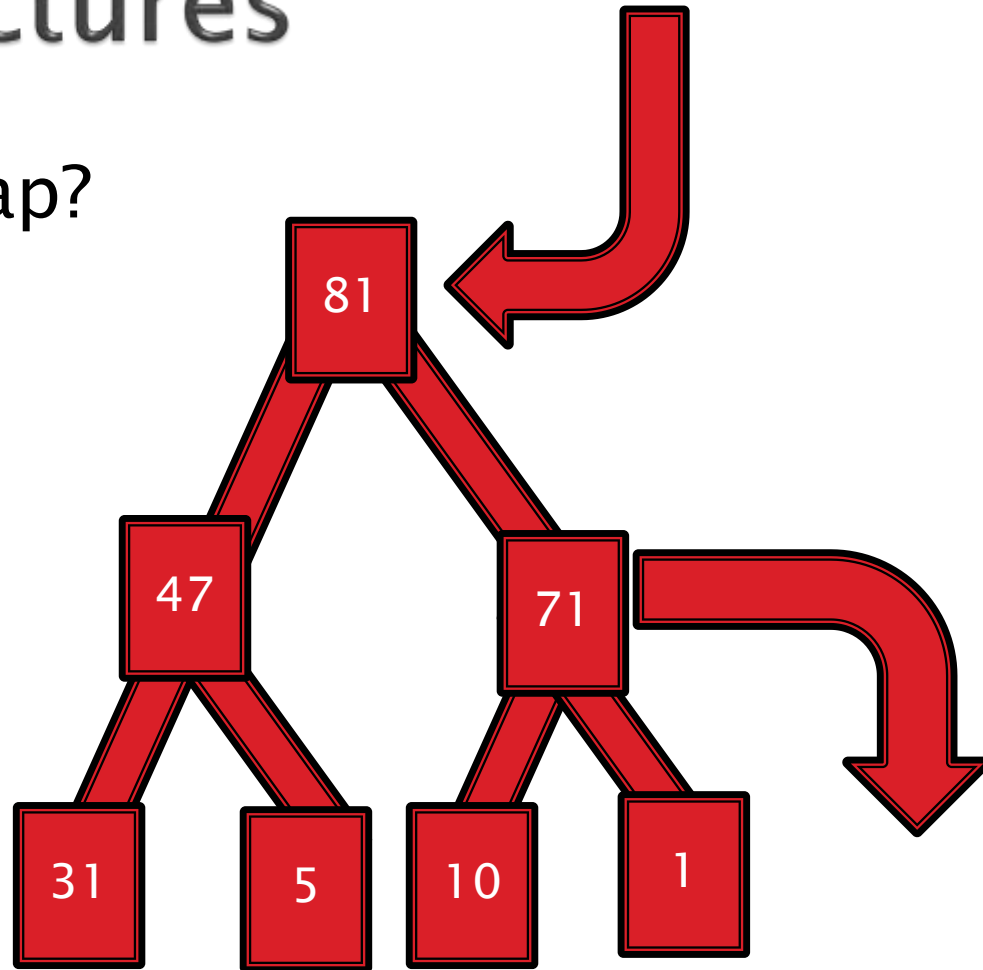
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- ▶ What is a heap?
- ▶ A heap is a tree-like structure generally each node has two children nodes, where the lower values are stored near the bottom of the tree and higher values towards the top of the tree.

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- ▶ What is a heap?
- ▶ MORE FORMALLY:
- ▶ The heap property:
  - If A is a parent node of B then the key of node A is ordered with respect to the key of node B with the same ordering applying across the heap



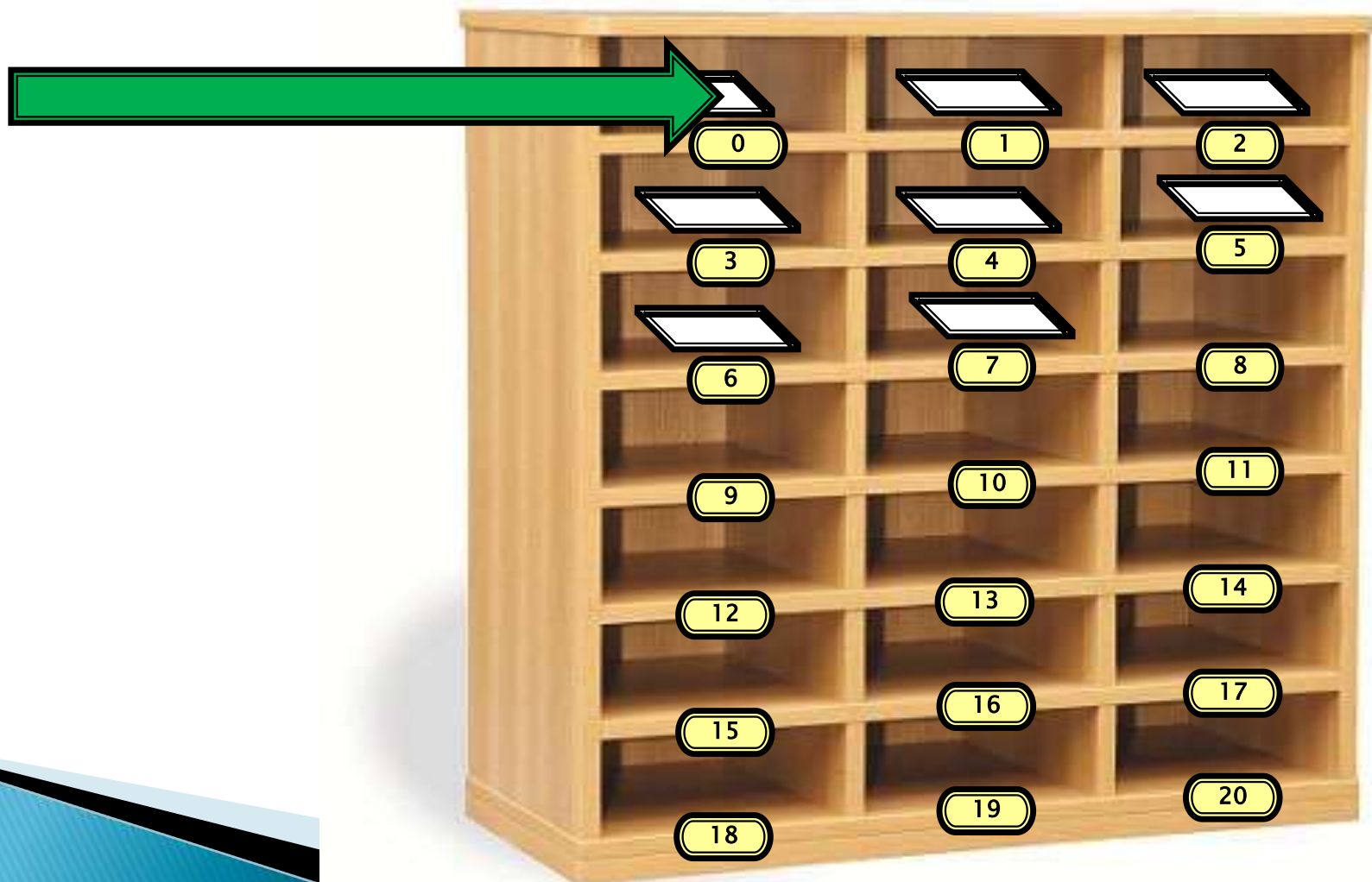
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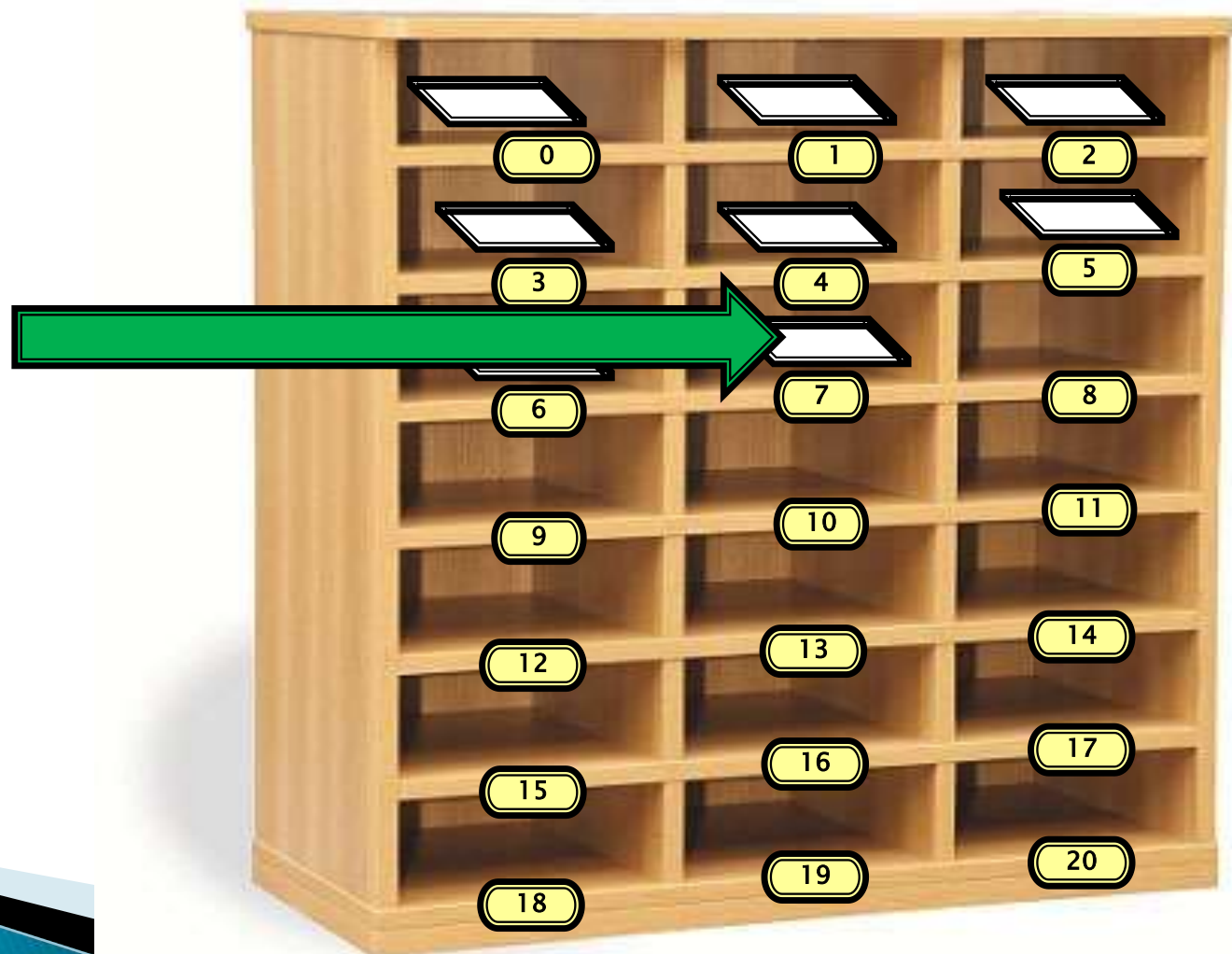
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