| **Stack ADT** |
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| Stack = { (, , ,...,), top} |
| 0 ≤ n ∧ Size(Stack) = n ∧ top = |
| * Stack − → Stack * push Stack × Element → Stack * pop Stack → Stack * peek Stack → Element * isEmpty Stack → Boolean * size Stack → Integer * clear Stack → Stack |

| **Stack − → Stack**  Builds an empty stack  Preconditions: −  Postconditions: Stack s = ∅. |
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| **push Stack × Element → Stack**  Adds the new element e to stack s  Preconditions: Stack s = (, , ,..., ) and element e or s = ∅ and element e  Postconditions: Stack s = (, , ,..., , ) or s = () |
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| **pop Stack → Stack**  Extracts from the stack s, the most recently inserted element.  Preconditions: Stack s ∅ i.e. s = (, , ,..., )  Postconditions: Stack s = (, , ,..., ) |
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| **peek Stack → Element**  Recovers the value of the element on the top of the stack.  Preconditions: Stack s ∅ i.e. s = (, , ,..., )  Postconditions: Element |
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| **isEmpty Stack → Boolean**  Determines if the stack s is empty or not.  Preconditions: Stack s  Postconditions: True if s = ∅, False if s ∅ |
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| **size Stack → Integer**  Returns the number of elements currently stored in the stack.  Preconditions: Stack s  Postconditions: size(s) = n, where n is the number of elements in the stack. |
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| **clear Stack → Stack**  This removes all elements from the stack, leaving it empty.  Preconditions: Stack s  Postconditions: s becomes an empty stack , s = ∅ |
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