



**BITS Pilani**

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# Object Oriented Analysis & Design Module-3 (RL 3.3.3)

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## Writing Operation Contract for PoS

# Operation Contract: addLineItem



Contract CO2: addLineItem

**Operation:** addLineItem (itemID: integer, quantity: integer)

**Cross References:** Use Cases: Process Sale.

**Pre-conditions:** There is a sale underway.

**Post-conditions:**

- A SalesLineItem instance *sli* was created. (instance creation)
- *sli* was associated with the Sale. (association formed)
- *sli.quantity* was set to quantity. (attribute modification)
- *sli* was associated with a ProductSpecification, based on itemID match (association formed)

# Pre- and Postconditions

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- Preconditions are assumptions about the state of the system before execution of the operation.
- A postcondition is an assumption that refers to the state of the system after completion of the operation.
  - The postconditions are not actions to be performed during the operation.
  - Describe changes in the state of the objects in the Domain Model (instances created, associations are being formed or broken, and attributes are changed)

# addLineItem postconditions



- Instance Creation and Deletion

After the itemID and quantity of an item have been entered by the cashier, what new objects should have been created?

- A SalesLineItem instance *sli* was created.

# addLineItem postconditions



- Attribute Modification

After the itemID and quantity of an item have been entered by the cashier, what attributes of new or existing objects should have been modified?

- sli.quantity was set to quantity (attribute modification).



# addLineItem postconditions

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- Associations Formed and Broken

After the itemID and quantity of an item have been entered by the cashier, what associations between new or existing objects should have been formed or broken?

  - sli was associated with the current Sale (association formed).
  - sli was associated with a ProductSpecification, based on itemID match (association formed).