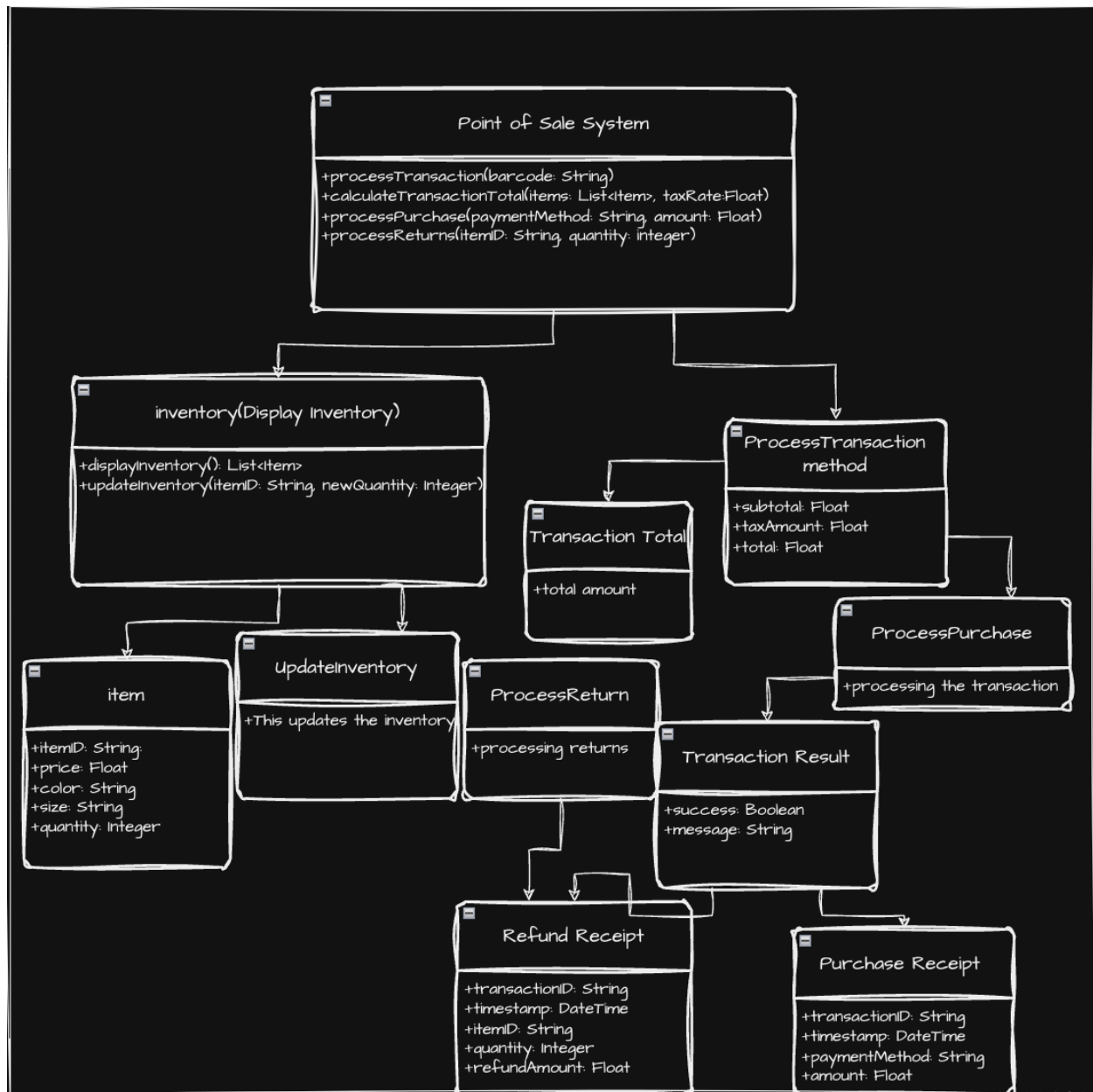


Software Design Specification



Here is an updated version of the UML diagram that now incorporates new functions that were inadvertently omitted in the previous assignment due to various tests conducted during the assignment. Functions such as "updateInventory," "ProcessReturn," "ProcessTransaction," "DisplayInventory," and many other features have been thoroughly tested and integrated into this assignment.

Verification Test Plan for the Clothing Store Point of Sale System

Unit Testing for PointOfSaleSystem Class:

- **Test 1:** Test processTransaction method
 - **Description:** Verify that the processTransaction method correctly processes transactions by scanning a barcode or entering an item ID manually.
 - **Test Set/Vector:**
 - Scan a barcode for an item.
 - Manually enter an item ID.
 - **Expected Outcome:** The transaction is processed successfully with the correct result.
 - **Pass/Fail Criteria:** The test passes if the transaction is successfully processed.

- **Test 2:** Test calculateTransactionTotal method
 - **Description:** Verify that the calculateTransactionTotal method calculates the transaction total accurately.
 - **Test Set/Vector:**
 - List of items with different prices.
 - Different tax rates.
 - **Expected Outcome:** The total amount is calculated accurately, considering item prices and taxes.
 - **Pass/Fail Criteria:** The test passes if the calculated total matches the expected value.

- **Test 3:** Test processPurchase method
 - **Description:** Ensure that the processPurchase method correctly records and processes purchases.
 - **Test Set/Vector:**
 - Different payment methods (credit card, debit card, cash).
 - Varying purchase amounts.
 - **Expected Outcome:** The purchase is recorded and processed correctly with the chosen payment method.
 - **Pass/Fail Criteria:** The test passes if the purchase is successfully processed.

- **Test 4:** Test processReturn method
 - **Description:** Validate that the `processReturn` method handles product returns effectively.
 - **Test Set/Vector:**
 - Item to be returned.
 - Quantity to be returned.
 - **Expected Outcome:** The return is processed accurately, and the refund receipt is generated.
 - **Pass/Fail Criteria:** The test passes if the return is successfully processed.

Unit Testing for the Inventory Class:

- **Test 5:** Test displayInventory method
 - **Description:** Confirm that the displayInventory method retrieves and displays the list of items in the inventory.
 - **Test Set/Vector:** None (no parameters).
 - **Expected Outcome:** The list of all items in the inventory is retrieved and displayed.
 - **Pass/Fail Criteria:** The test passes if all items are displayed as expected.

- **Test 6:** Test updateInventory method
 - **Description:** Verify that the updateInventory method correctly updates the inventory based on transactions.
 - **Test Set/Vector:**
 - Item to update.
 - New quantity.
 - **Expected Outcome:** The inventory is updated, and the method returns a success indicator.
 - **Pass/Fail Criteria:** The test passes if the inventory is updated, and a success indicator is returned.

Integration Testing for Inventory and Database Interaction:

- **Test 7:** Test the integration between the Inventory and Database classes
 - **Description:** Validate that the `Inventory` class interacts correctly with the database to update inventory.
 - **Test Set/Vector:**
 - Simulate multiple inventory update operations.
 - **Expected Outcome:** Inventory updates are reflected accurately in the database.
 - **Pass/Fail Criteria:** The test passes if the database accurately reflects inventory changes.

Integration Testing for Point of Sale and Inventory Interaction:

- **Test 8:** Test the integration between the PointOfSaleSystem and Inventory classes
 - **Description:** Ensure that the Point of Sale system interacts with the inventory for transactions correctly.
 - **Test Set/Vector:**
 - Simulate various transactions and inventory updates.
 - **Expected Outcome:** Inventory adjustments due to transactions are accurate.
 - **Pass/Fail Criteria:** The test passes if inventory is correctly adjusted.

System Testing for End-to-End Functionality:

- **Test 9:** Perform end-to-end testing of the entire Point of Sale system
 - **Description:** Verify the complete system's functionality, including scanning items, processing transactions, updating inventory, and generating receipts.
 - **Test Set/Vector:**
 - Simulate various real-world scenarios.
 - **Expected Outcome:** The entire system works cohesively and produces the correct results for transactions and inventory management.
 - **Pass/Fail Criteria:** The test passes if all system functions work as expected.

System Testing for Android and iOS:

- **Test 10:** Test the system's compatibility with Android and iOS devices with cameras
 - **Description:** Verify that the system works on both Android and iOS devices equipped with cameras.
 - **Test Set/Vector:**
 - Test on various Android and iOS devices.
 - **Expected Outcome:** The system functions correctly on all compatible devices.
 - **Pass/Fail Criteria:** The test passes if the system maintains functionality on all compatible devices.

Additional Testing - Security Testing:

- **Test 11:** Test security features
 - **Description:** Ensure that security features such as password protection and account access are working as intended.
 - **Test Set/Vector:**
 - Attempt to access the system without the correct credentials.
 - **Expected Outcome:** Unauthorized access is denied, and the system is secure.
 - **Pass/Fail Criteria:** The test passes if unauthorized access is prevented.