

**Q2.** You are testing an e-commerce system that sells products like caps and jackets. The problem is to create functional tests using boundary-value analysis and equivalence class partitioning techniques for the web page that accepts the orders. A screen prototype for the order-entry web page is shown below.

Item ID	<input type="text"/>	Item thumbnail goes here
Quantity	<input type="text"/>	
Item Price	<input type="text"/>	Animated shopping cart graphic showing contents goes here
Item Total	<input type="text"/>	
<input type="button" value="Continue Shopping"/>		<input type="button" value="Checkout"/>
Cart Total		<input type="text"/>

The system accepts a five-digit numeric item ID number from 00000 to 99999. The system accepts a quantity to be ordered, from 1 to 99. If the user enters a previously ordered item ID and a 0 quantity to be ordered, that item is removed from the shopping cart. Based on these inputs, the system retrieves the item price, calculates the item total (quantity times item price), and adds the item total to the cart total. Due to limits on credit card orders that can be processed, the maximum cart total is \$999.99

**Solution:**

**Equivalence classes:**

**ID**

Valid :

- ID between 00000-99999 (both inclusive) i.e.  $00000 \leq ID \leq 99999$

Invalid :

- ID less than 00000 (00000 excluded) i.e.  $ID < 00000$

- ID greater than 99999 (99999 excluded) i.e.  $ID > 99999$

### Quantity

Valid :

- quantity between 0-99 (both inclusive) i.e.  $0 \leq \text{quantity} \leq 99$

Invalid :

- quantity less than 0 (0 excluded) i.e.  $\text{quantity} < 0$
- quantity greater than 99 (99 excluded) i.e.  $\text{quantity} > 99$

### Cart total (in dollars) :

Valid :

- Cart total between 0-999.99 (both inclusive) i.e.  $0 \leq \text{cart total} \leq 999.99$

Invalid :

- Cart total greater than 999.99 (999.99 excluded) i.e.  $\text{cart total} > 999.99$

Let us assume that cart total is \$100 (for some selected items) and the price of an item with ID 55555 is \$50.

Test case	Input Data	Expected Outcome
ID < 00000	10	Error
ID > 99999	1000000	Error
quantity<0	-5	Error
quantity>99	1000	Error
Valid ID	55555	Item price=\$50
Valid cart total	ID = 55555 Qty = 10	\$500
Invalid cart total	ID = 55555 Quantity = 100	Cart total = \$5000 Error (since, cart total > 999.99)
quantity=0	ID = 11111	Item with ID 11111 removed from shopping cart [if Item with ID 11111 was purchased previously]
quantity=0	ID = 11111	Error [if item with ID 11111

		was NOT purchased previously]
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