

Fixtures

To keep the original codes unchanged, mockers are used in the unit testing.

In each function, login stage is a pre-condition, so a test user and a test cart should be mocked in this case. Apart from this, the usage of `display_cart_items()` and `get_user_input()` in testing `check_cart()` function is a necessity. The implementation of these external functions can be skipped in the unit testing, so we can also choose to use a mocker.

To reduce the redundant codes, fixtures were written. Thus, we have 6 fixture functions:

- `replace_data`
- `mock_user`
- `mock_cart`
- `mock_global_products`
- `mock_input`
- `mock_display`

Unit testing of the `get_product(file name)` function

The objective of the `get_product` function is to load products from a CSV file, and there's a default csv file name.

Thus, there could be invalid input (IEC = Invalid Equivalence Class) :

- IEC1 - non-existent files
- IEC2 - invalid content in the file

We now turn to the valid inputs. It can be divided into 2 situations (VEC = Valid Equivalence Class):

- VEC1 – load the csv file successfully
- VEC2 – load the csv file successfully but with empty content

Unit testing of the `checkout(user, cart)` function

The objective of the `checkout` function is to complete the checkout process, that is, to check out all the items in the cart.

There's 4 possible situations:

- EC1 – Successful checkout
- EC2 – no item in the cart
- EC3 – total_price > user.wallet
- EC4 – item's price is 0

Unit testing of the check_cart(user, cart) function

The objective of the checkout function is to print the cart and prompt user for proceeding to checkout. There's a "if-elseif-else" structure in a true while loop, which means there're few different branches:

- meet the 1st if conditions
 - switch to checkout
- meet the 2nd if conditions
 - switch to display_cart_items
 - switch to remove items
 - remove successfully
 - invalid input
 - invalid input
- didn't meet both the 1st and 2nd if condition --> return False

Thus we have these situations:

- IEC1 – Invalid input at the removing item stage
- IEC2 – Invalid input which doesn't enter any branch
- IEC3 - Empty input
- VEC1 - Jump to check out
- VEC2 - Check items list
- VEC3 - Remove items successfully
- VEC4 - Cart is empty