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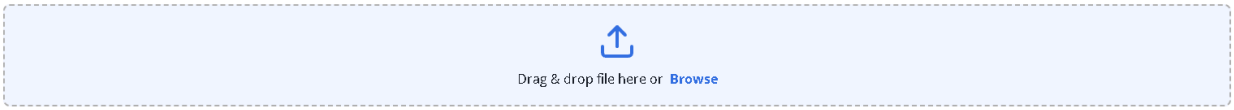
MARK AS COMPLETED

Q: 1

- **Define the following levels of testing** in your own words:
  - Unit Testing
  - Integration Testing
  - System Testing
  - Acceptance Testing
- **For each of the above testing levels**, provide a **real-world example**. Describe how you would apply that level of testing to test an e-commerce website (e.g., Flipkart, Amazon).
  - Example:
    - **Unit Testing**: Testing the function that calculates the total price of items in the cart.
    - **Integration Testing**: Ensuring that the payment gateway correctly integrates with the checkout system.
    - **System Testing**: Testing the entire e-commerce website to make sure all functionalities work as expected (login, search, checkout, etc.).
    - **Acceptance Testing**: Having the customer use the site to verify that all features meet their expectations before launch.



1. A. Unit Testing:

A single unit like login, add to cart, checkout, and other modules are tested in this testing to check it meets user expectations and requirements.

B. Integration Testing:

Here testing the interaction between integrated components, ensuring components are working together data sharing works well in their communication.

C. System Testing:

Testing entire System as a whole in the environment that closely mirror production environment meaning entire application taken as a single system testing in all possible ways.

D. Acceptance Testing:

Testing a software product meets business requirements and expectations, even if software with no defects/bugs, still does not meet user expectations and requirements is still a failure.

2. For An E-commerce Website:

A. Unit Testing: Testing the function that calculates the total price of items in the cart.

Used cypress as a automation tool, Steps taken to check total price is expected:

1. Variable to store sum.
2. Getting price data(String type) by Visiting to the price place.
3. Removing $ symbol.
4. Converting to Float type.
5. Incremental adding to the sum variable.

```
let sum = 0
   cy.xpath(paths.price).each(($price) => {
      let value = $price.text().substring(1)
      sum += parseFloat(value)
```

```
    })
    cy.xpath(paths.total).invoke('text').then((text) => {
        const startIndex = text.indexOf('$') + 1; // 3. Get substring start index after '$'
        const floatString = text.substring(startIndex); // 4. Get substring from index to
end
        const total = parseFloat(floatString);
        expect(sum).to.eq(total);
    })
```

Example:
https://github.com/RouthKiranBabu/tericsofttechnology-qa-tester-d69c/blob/main/output/02_Individual_work.cy.js.gif

B. Integration Testing:

In the real world scenarios, I have used cypress to check Add to Cart functionality to check the products are actually get add to the cart as expected. For this purpose, Took text of title and description of product before clicking add to cart button, then after clicking add to cart button. Same text and description of product is available in the cart.

C. System Testing:

Taking a role as a end user, and checking entire application works well as expected from login to total price checkup in add to cart.

D. Acceptance Testing:

Testing automation by cypress fallows as per the task document. And fallows business requirements and expectations.