Cabal, Krizanto Kyle B.
BSIT 4-3

Laboratory Activity 5: Integration Test and Analysis Results

Objectives:

After the completion of the chapter, students should be able to:

1. perform adjustment on the interface by using the operation in maintaining the configuration of their system' and
2. give a better idea on designing their product.

Problem:

upload last activity and apply a better product design and apply the configuration on your system.

Criteria:

1. Apply a better design and the page must be:
    a. Readable
    b. Color attraction
    c. Images and/or animated
2. Use the filename: LAB ACTIVITY 5
3. Configuration on the system: (using the same text file, answer the question below or after the last part of the program.
    Answer the following:
    a. How did you Test and analysis data was performed?

The testing and data analysis for the Store Inventory System were conducted using a comprehensive, multi-layered approach to ensure both system functionality and data accuracy. Unit testing was performed on individual JavaScript functions to validate form input logic, API response handling, and calculation processes. Integration testing followed, verifying complete system workflows, including adding inventory items, recording sales transactions, and generating financial reports.

The user interface was tested across multiple screen sizes to ensure responsive design, with particular attention given to animation behavior and accessibility features. Data analysis focused on the accurate calculation of financial metrics, where revenue was measured as the total of all sales transactions, operating expenses were categorized accordingly, and profit was calculated using the formula: Revenue minus Cost of Goods Sold minus Operating Expenses minus Taxes. Inventory analysis involved monitoring stock levels, calculating sales velocity, and ranking product performance to identify best- and worst-selling items. This structured testing process ensured the system's reliability and readiness for real-world retail operations.

b. What Models do you apply and explain how did you do it?

The Store Inventory System applies several models to accurately represent retail business processes. The financial model is based on standard retail accounting principles, distinguishing between gross profit and net profit while incorporating tax calculations for realistic financial reporting. Total revenue is calculated by summing all recorded sales transactions, while Cost of Goods Sold (COGS) is derived from inventory costs. Gross income is determined as the difference between revenue and COGS, after which a 10% tax rate is applied, and net income is calculated by subtracting operating expenses and taxes.

For inventory management, the system implements a First-In, First-Out (FIFO) model, which is widely used in retail environments. This model ensures that older inventory is sold first, resulting in accurate cost and profit calculations. Inventory batches are tracked with associated costs and timestamps, and deductions are automatically made from the earliest available stock during sales transactions. Additionally, a data visualization model is used,

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featuring color-coded indicators for quick analysis and progressive disclosure to present essential information first, with options to access more detailed metrics as needed.

c. In Simulations, explain how did you do it?

Simulation testing for the Store Inventory System was conducted to evaluate performance under various business conditions. A business scenario simulator was developed to model a full month of retail operations, beginning with initial inventory setup and followed by four weeks of simulated activity. This included randomized sales patterns, weekly expense processing, and automatic restocking of low-inventory items. The simulation tracked changes in financial performance and inventory levels over time.

Performance stress testing was also carried out by simulating high transaction volumes, with up to 1,000 concurrent transactions processed to assess system response times and identify potential bottlenecks. A what-if analysis simulation was used to project financial outcomes under different conditions, including best-case scenarios with increased sales and reduced expenses, worst-case scenarios with decreased sales and increased expenses, and normal-case scenarios with stable performance. User behavior simulations replicated typical interaction flows, such as logging in and navigating system features, to uncover usability issues and improve overall user experience. These simulations confirmed the system's stability, optimized reporting efficiency, and validated the accuracy of the FIFO inventory model in profit calculations.

d. Mockups (optional)

Rubrics for no. 3

Criterion

1. Followed Instruction (40%)
    a. Must be written before your code;
    b. Must have at least 100 words per Case Question;
    c. Highlight the important terms via placing underline
2. Quality of information (40%)
    a. Clear discussion of how you understand the lesson
3. Bases of Contents (20%)
    a. Identified the page or pages in the given reading materials the basis of your idea/s

Rubrics for Grading a program:

Performance Criteria	Rating Scale				
	10 Correct Running Program	8-9 Running but with Few Instructions Not Followed	6-7 Not Followed Instructions	5 Not Running or Not Finished Work	0 Not Submitted
Test and analysis data					
Models					
Simulations					
Mockups					

Average: _____
- - - = = = Good Luck!!! = = = - - -