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# **FINAL PROJECT DOCUMENTATION**

## **SeedStory: The Seed Station**

**CS121: ADVANCED COMPUTER PROGRAMMING**

Submitted By:

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**IT – 2106**



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**I. PROJECT OVERVIEW**

The SeedStory System exists to manage sales and inventory within a seed shop, removing inefficiencies from manual operation and improving customer experience. It automates processes such as tracking of inventory, browsing of products, and payment handling for accuracy and efficiency while reducing errors and administrative burdens. By allowing such features as sorted browsing, real-time stock updates, and a seamless checkout process through an application of discount, the system enables customer satisfaction and helps expand the business by way of data-driven sales and inventory performance. Lastly, it aligns with the shop's mission to reliably and conveniently deliver quality seeds while being sustainable and operationally excellent.

**Included Features:**

- **Product Variety:** People can try to sort the seeds in numerous ways (by name, growth duration, and sales per week).
- **Inventory:** Seeds will be stored in groups arranged by seed name or kind, except for the time to grow, breeder, and weeks to grow, including the price for each item.
- **Cart:** Customers can add items to the cart, view the selected product, and make the payment. The system gives the customer a 5% discount if the user purchases five or more products.
- **Easy Checkout:** Multiple payment options—cash, Credit Card, and E-Wallet—are available with easy checkout so that customers do not face any hassle while shopping.
- **User-Friendly Navigation:** The system comprises intuitive menus for sorting, selecting, and buying seeds to enrich the customer experience.

**Excluded Features:**

- **Online Payment:** The system does not support payment processing through online platforms.
- **Multi-Language Support:** It operates in a single language and does not cater to multilingual users.
- **Custom Seed Packaging:** Customization options for seed packaging are unavailable.
- **Customer Feedback:** No functionality exists for collecting or managing customer feedback.

**Achievable Outcomes:**

- **Improved Sales Tracking:** Enable the ability to track seed sales, inventory, and customer transactions in full details up to 100% with the operational database within the first month from deployment.
- **Improved Customer Satisfaction:** Score at least 90 percent good feedback about ease of use and the checkout process within the first three months.
- **Inventory Updates:** To reduce manual stock updates by 80% through database integration by the end of Q1 2025.
- **Availability of Products:** Sorts by name, growth duration, and sales per week, allowing customers to look for products within 30 seconds of search time at launch.



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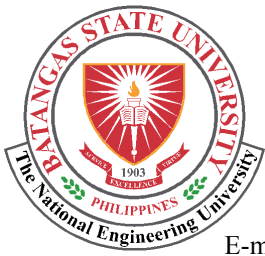
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**II. PYTHON CONCEPTS AND LIBRARIES**

Feature/Concept	Description	Purpose/Implementation
Object-Oriented Programming (OOP)	Classes such as <b>SeedDetails</b> , <b>Inventory</b> , and <b>ShoppingCart</b> encapsulate data and behavior.	Promotes modularity and reusability, with each class handling specific parts of the system (e.g., product details, cart).
Error Handling	<b>try-except</b> blocks manage invalid inputs and database errors gracefully.	Ensures smooth user experience by preventing crashes and handling issues like non-numeric input or database disconnections.
Database Integration	Uses <b>mysql.connector</b> to interact with a MySQL database for inventory.	Enables real-time updates for stock, cart, and transactions through SQL queries (CRUD operations).
Sorting and Filtering	Python's <b>sorted()</b> function organizes inventory based on criteria like seed name, growth duration, or sales.	Simplifies navigation, allowing users to find products efficiently based on their preferences.
User Input and Interaction	Input-handling capabilities create menus and prompts.	Provides a user-friendly interface for operations like adding items to the cart and checking out.
Mathematical Calculations	Arithmetic operations calculate discounts, totals, and change during checkout.	Applies business logic for pricing, ensuring accurate and efficient transactions.
Custom Libraries	Includes <b>create_connection</b> and <b>insert_sample_data</b> to manage database connectivity.	Ensures integration with the database for inventory.
Logical Flow	Conditional statements and loops guide the application's flow, such as retries for valid payments.	Ensures logical progression in operations, like cart clearing after checkout or asking users before proceeding with payment.



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**III. SUSTAINABLE DEVELOPMENT GOALS**

**SDG: Decent Work and Economic Growth (SDG 8)**

SDG 8 includes promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. This is to be focused on the entrepreneurial opportunities required for high productivity and innovation to ensure better wages, safe working conditions, and economic development for all sections, particularly in the developing regions.

**1. Empowering Local Farmers:** SeedStory will source seeds directly from local farmers and cooperatives. This will enable the company to make its market more predictable for the farmers; thus, the farmers are empowered to grow their businesses and earn a steady income. It also nudges smallholder farmers to invest in sustainable agriculture.

**2. Employment and Fair Labor:** SeedStory will provide employment opportunities in all operations such as managing stores, logistics, marketing, and education. It will provide a fair work environment at all times. Workers will be fairly compensated, safe, and included at all times, developing decent work conditions.

**3. Pushing Agri-preneurship:** SeedStory will help entrepreneurs in agriculture, offering low-cost, high-quality seeds. Workshops and training programs help them acquire techniques for effective planting and develop the ability to launch their own farms or businesses in order to uplift the local economies.

**4. Orienting Agriculture towards Sustainability:** By providing climate-resilient and sustainable seed varieties, SeedStory supports farmers in increasing productivity while minimizing environmental impact. This will help in ensuring sustainable economic growth by ensuring long-term viability in agriculture, which is critical for economic stability.

**5. Strengthening Local Economies:** SeedStory is working to energize the local economies through partnerships with local brands and organizations. Adding partnerships with local suppliers based on communities, as well as some reliable manufacturers of eco-friendly agricultural tools, further energizes economic activity at the local levels.

SDG 8, Decent Work and Economic Growth is integrated in SeedStory as the store would both develop as a business and benefit from growth in a more sustainable and inclusive economy. In this regard, SeedStory reflects commitment to growth helpful to people and the planet through fair employment, local farmers empowerment, and support of the agri-preneurs.



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**IV. PROGRAM/SYSTEM INSTRUCTIONS**

- 1. Initialization:** On the first run, the database, table, and sample data will be created.
- 2. Main Menu:** After the initial setup, the program will display the main menu for interaction.

```
-----MAIN MENU-----
(1) Browse Products
(2) View Cart and Checkout

(3) Exit
-----
Enter your choice (1-3): |
```

- 3. Browse Products:** If you choose option 1 to browse products, you'll see the sort menu.

```
-----Sort Products By:-----
(1) Name (A-Z)
(2) Growth Duration (Weeks)
(3) Weekly Sales

(4) BACK
-----
Your choice (1-4):
```

*Example output for sorting by Name (A-Z):*

SEED NAME	WEEKS(Growth)	SEED BREEDER	NET WT(g)	SALES(pw)	PRICE(PHP)	STOCK
Aloe Vera	16	Lowes	175	8	50.00	1900
Arugula	6	American Meadows	75	22	15.00	2800
Asparagus	16	Gurneys	175	10	50.00	1700

*(more products)*

Yarrow	12	Ferry-Morse	85	10	20.00	1800
Zinnia	8	American Meadows	100	25	12.00	3500
Zucchini	7	Burpee	110	25	42.00	4600
SEED NAME	WEEKS(Growth)	SEED BREEDER	NET WT(g)	SALES(pw)	PRICE(PHP)	STOCK

Add an item to cart? (yes/no):

- 4. Add to Cart:** If you choose to add an item to the cart, the program will prompt you to enter the Seed Name and Quantity to add.

*Example interaction:*



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```
Add an item to cart? (yes/no): yes
Enter seed name to add to cart: Rose
Enter quantity to add: 5

5 Rose(s) added.
Stock updated.

-----Sort Products By:-----
(1) Name (A-Z)
(2) Growth Duration (Weeks)
(3) Weekly Sales

(4) BACK
-----
Your choice (1-4):
```

5. **View Cart and Checkout:** If you choose option 2 to checkout, the cart summary will be shown.

```
-----MAIN MENU-----
(1) Browse Products
(2) View Cart and Checkout
(3) Exit
-----
Enter your choice (1-3): 2

CART SUMMARY - SEEDSTORY
-----
SEED NAME      SEED BREEDER      PRICE(PHP)      QUANTITY      TOTAL(PHP)
-----
Rose           Jackson & Perkins  30.00           5             150.00
-----
Subtotal: PHP 150.00
Discount: -PHP 0.00 (5% off for 5 or more items)
Total: PHP 150.00

Proceed to payment? (yes/no):
```

6. **Payment:** Upon proceeding to payment:

```
Proceed to payment? (yes/no): yes
-----
Enter payment (Total: PHP 150.00):
```

*After entering payment (e.g., PHP 200):*



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```
Enter payment (Total: PHP 150.00): 200
Payment successful.
RECEIPT - SEEDSTORY
-----
SEED NAME      SEED BREEDER      PRICE(PHP)      QUANTITY      TOTAL(PHP)
-----
Rose           Jackson & Perkins  30.00           5             150.00
-----
Subtotal: PHP 150.00
Discount: -PHP 0.00 (5% off for 5 or more items)
Total: PHP 150.00
Cash: PHP 200.00
Change: PHP 50.00
-----
-----MAIN MENU-----
(1) Browse Products
(2) View Cart and Checkout
(3) Exit
-----
Enter your choice (1-3):
```

7. **Exit:** If you choose to exit, the program will close with:

```
-----MAIN MENU-----
(1) Browse Products
(2) View Cart and Checkout
(3) Exit
-----
Enter your choice (1-3): 3
Exited SeedStory.
```