



Maharashtra Education Society's  
**MES SENIOR COLLEGE, PUNE**

(BBA, BBA-IB & BBA-CA)

Affiliated to Savitribai Phule Pune University, Pune

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## **TYBBA-CA 504-Python**

### **2<sup>nd</sup> Internal Evaluation**

Submission Date: 21<sup>st</sup> October 2023

Extended Date of Submission: 25<sup>th</sup> October 2023

#### **Case Study: Python Implementation in a Student Management System**

##### **Description:**

Imagine a retail store that wants to streamline its operations and enhance customer experience by implementing Python-based solutions. The store is interested in using Python for various tasks, from managing inventory and sales data to developing a user-friendly graphical interface for customers. Here are four scenarios related to different aspects of Python implementation in the retail store:

##### **Inventory Management:**

Write a Python program to manage the store's inventory efficiently. The program should allow the following operations:

- Add new items to the inventory.
- Update item quantities and prices.
- Remove items that are no longer available.
- Generate a report displaying the current inventory levels and pricing.

**Question 1: Write a Python program that implements the inventory management system with the specified features.**

##### **Sales and Customer Database:**

Develop a Python program to maintain a record of sales and customer data. The program should:

- Record each sale, including customer details and purchased items.
- Calculate the total sales for a specific period.
- Provide personalized discounts to frequent customers.
- Generate a report of the store's top customers and sales trends.

**Question 2: Write a Python program that handles the sales and customer database operations as described.**



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### Graphical User Interface (GUI):

Design a Python GUI application using Tkinter that allows customers to interact with the store. The application should enable customers to:

- Search for products and view their details.
- Add products to a shopping cart.
- Calculate the total cost of items in the cart.
- Place orders and provide delivery options.

**Question 3: Write a Python program that creates the specified Tkinter-based GUI for customer interactions.**

### Data Analytics and Visualization:

Develop a Python program using libraries like Pandas and Matplotlib to analyze and visualize sales data. The program should:

- Analyze sales trends over time.
- Create data visualizations, such as sales charts.
- Identify peak sales hours and popular products.
- Generate reports for store management.

**Question 4: Write a Python program that performs data analysis and visualization using Pandas and Matplotlib, as described.**

### Submission Guidelines

- Students should write the above given programs in their choice of IDE
- Students need to create GitHub account and make repository which should have roll no and name mentioned in repository name.
- All programs should be uploaded in the repository.
- The repository URL should be submitted in the below given google form.  
<https://forms.gle/upaxtbH2yUMCbnW16>