

Algorithm for Tax Calculation Application:

EMP No: 2577108

Name: Pramod

1. Define the Vehicle class with attributes and methods for vehicle details and tax calculation.
 - Attributes: regNumber, brand, cost, velocity, capacity, vehicleType, vehicleTax
 - Methods: Constructors, Getters, and Setters
2. Define the Property class with attributes and methods for property details and tax calculation.
 - Attributes: id, baseValueOfLand, buildup, ageOfProp, isInCity, propertyTax
 - Methods: Constructors, Getters, and Setters
3. Define the VehicleOperations class to manage vehicle-related operations.
 - Attributes: ArrayList of Vehicle objects
 - Methods: addVehicleDetails, viewVehicleDetails, calculateVehicleTax
4. Define the PropertyOperations class to manage property-related operations.
 - Attributes: ArrayList of Property objects
 - Methods: addPropertyDetails, viewPropertyDetails, calculatePropertyTax
5. Define the main class TaxCalculationApplication:
 - Display a welcome message.
 - Prompt the user to enter a username and password.
 - If the username and password match, proceed; otherwise, display an error message and exit.
 - Initialize instances of PropertyOperations and VehicleOperations classes.
6. Create a loop for the main menu:
 - Display the main menu options:
 1. Property Tax
 2. Vehicle Tax
 3. Total
 4. Exit
 - Prompt the user to select an option.
7. For option 1 (Property Tax):
 - Create a loop for property-related operations:
 - Display property-related sub-options:
 1. Add property details
 2. Calculate property tax
 3. Display all properties
 4. Back to main menu
 - Prompt the user to select a sub-option.
 - For sub-option 1:
 - Prompt the user for property details (id, baseValueOfLand, buildup, ageOfProp, isInCity).
 - Create a Property object and add it to PropertyOperations.
 - For sub-option 2:
 - Calculate property tax for the selected property and display it.

- For sub-option 3:
 - Display all property details.
- For sub-option 4:
 - Go back to the main menu.

8. For option 2 (Vehicle Tax):

- Create a loop for vehicle-related operations:
 - Display vehicle-related sub-options:
 1. Add vehicle details
 2. Calculate vehicle tax
 3. Display all vehicles
 4. Back to main menu
 - Prompt the user to select a sub-option.
- For sub-option 1:
 - Prompt the user for vehicle details (regNumber, brand, cost, velocity, capacity, vehicleType).
 - Create a Vehicle object and add it to VehicleOperations.
- For sub-option 2:
 - Calculate vehicle tax for the selected vehicle and display it.
- For sub-option 3:
 - Display all vehicle details.
- For sub-option 4:
 - Go back to the main menu.

9. For option 3 (Total):

- Calculate the total property tax and total vehicle tax using the respective operations.
- Calculate the total tax payable as the sum of property and vehicle taxes.
- Display the total property tax, total vehicle tax, and total tax payable.

10. For option 4 (Exit):

- Close the scanner and exit the program.

11. Implement helper methods for calculating total taxes for properties and vehicles.

12. Execute the main menu loop until the user chooses to exit.

13. End of the program.