Object-Oriented Programming in Python

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- Based on the concept of "objects"
- Helps model real-world entities like BankAccount, Student, Car
- Makes code more organized, reusable, and easier to maintain

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Class Declaration

```
class BankAccount:
"""Class to simulate bank account"""
```

Explanation: Defines a class to simulate a basic bank account.

Constructor Method

```python
def __init__(self, password):
    self.balance = 0
    self.password = password.strip()
```

Explanation: Initializes the balance and stores the password securely.

Deposit Method

```python
def deposit(self, amount):
    self.balance += amount
    return self.balance
```

Explanation: Adds amount to the balance and returns updated balance.

Withdraw Method

```python
def withdraw(self, amount):
    user_password = input("Enter password to withdraw: ").strip()
    if user_password != self.password:
        return "Incorrect password. Withdrawal denied."
    if amount > self.balance:
        return "Insufficient Balance"
    self.balance=self.balance-amount
    return self.balance
```

Explanation: Allows withdrawal after verifying password and checking balance.

Account Creation

```
ac101 = BankAccount(password="1234")
```

Explanation: Creates an account object with the password "1234".

Main Menu Loop

```python
while True:
    print("\n==== Bank Menu ====")
    print("1. Deposit")
    print("2. Withdraw")
    print("3. Check Balance")
    print("4. Exit")
    choice = input("Enter your choice (1-4): ").strip()
```

Explanation: Displays a menu and runs until the user chooses to exit.

Deposit Option

```
if choice == "1":
    amount = float(input("Enter amount to deposit: "))
    ac101.deposit(amount)
    print("Amount deposited. Current balance:", ac101.balance)
```

Explanation: Takes deposit amount and updates the account balance.

Withdraw Option

```
elif choice == "2":
    amount = float(input("Enter amount to withdraw: "))
    result = ac101.withdraw(amount)
    print("Withdrawal result:", result)
    print("Balance after withdrawal:", ac101.balance)
```

Explanation: Takes withdrawal amount, verifies password, and processes the transaction.

Check Balance / Exit

```python
elif choice == "3":
  print("Current balance:", ac101.balance)
elif choice == "4":
  print("Thank you for banking with us.")
  break
else:
  print("Invalid choice. Please select from 1 to 4.")
```

Explanation: Option 3 displays balance, option 4 exits, other inputs show error.

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