Welcome to the CoGrammar

Tutorial: OOP Classes

The session will start shortly...

Questions? Drop them in the chat. We'll have dedicated moderators answering questions.

CyberSecurity Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

CyberSecurity Session Housekeeping cont.

- For all **non-academic questions**, please submit a query: **www.hyperiondev.com/support**
- We would love your **feedback** on lectures: **Feedback on Lectures**
- Find all the lecture content in you **Lecture Backpack** on GitHub.
- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

Safeguarding & Welfare

We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:

Ian Wyles
Designated Safeguarding Lead

Simone Botes

Nurhaan Snyman

Rafiq Manan

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

or email the Designated Safeguarding Lead:
Ian Wyles
safeguarding@hyperiondev.com

CoGrammar HyperionDev

Stay Safe Series:

Mastering Online Safety One week at a Time

While the digital world can be a wonderful place to make education and learning accessible to all, it is unfortunately also a space where harmful threats like online radicalization, extremist propaganda, phishing scams, online blackmail and hackers can flourish.

As a component of this BootCamp the *Stay Safe Series* will guide you through essential measures in order to protect yourself & your community from online dangers, whether they target your privacy, personal information or even attempt to manipulate your beliefs.

Security Tip:
Enable Two-Factor Authentication (2FA)

- **Extra Layer of Security:** Adds a second step to verify your identity.
- **Use an Authenticator App:** Apps like Google Authenticator are more secure than SMS codes.
- **Protects Against Password Theft:** Even if your password is compromised, 2FA keeps your account safer.
- **Activate on Important Accounts:** Enable on emails, banking, and social media accounts.
- **Backup Codes:** Save your backup codes in a secure place in case you lose access to 2FA

OOP

November 2024

Learning Objectives/Outcomes

By the end of this lesson, learners should be able to:

- Design a Simple Project using OOP principles
- Evaluate and Troubleshoot OOP code
- Use OOP principles to structure programs efficiently.

Poll Questions

What does super().__init__() achieve in a subclass?

A) It calls the __init__ method of the subclass itself

B) It explicitly initialises all the attributes in the subclass

C) It calls the parent class's __init__ method, ensuring inherited attributes are initialised

D) It prevents the subclass from accessing any parent methods.

Poll Questions

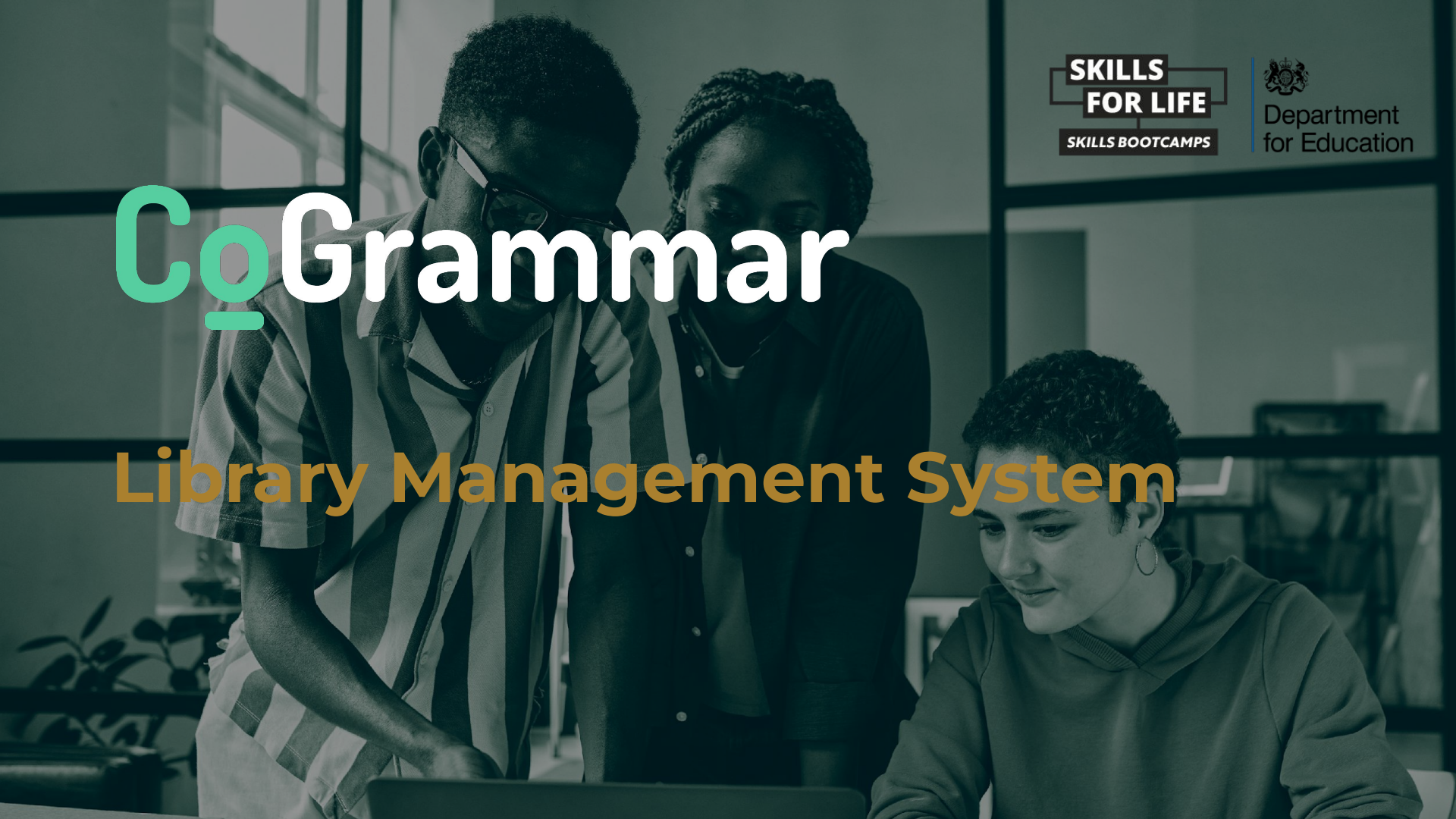
When a subclass provides a specific implementation of a method that already exists in its superclass, it is called:

A) Method Overloading

B) Method Shadowing

C) Method Overriding

D) Method Hiding



Library Management System

Project Goals

Catalog and Manage Books: The system will allow the library to add new books, display available books, and track the lending status of each book.

Member Registration and Book Borrowing: Members can borrow books, and the system will manage the lending process, ensuring only available books are lent out. Members can also return books, updating the library’s records.

Demonstrate Key OOP Concepts: The project will showcase encapsulation, inheritance, and polymorphism by creating classes and objects that interact seamlessly to manage the library's operations.

Key Components

1. **Book Class:** Represents each book in the library, with attributes like title, author, and availability status. The Book class will have methods to lend and return books, encapsulating the details and behaviors specific to individual books.
2. **Member Class:** Represents a library member with attributes like name and a list of borrowed books. The Member class will have methods for borrowing and returning books, enabling members to interact with the library system.
3. **Library Class:** Acts as the central system for managing books and members. It can list available books, find a book or add one. The Library class will provide an interface for members to borrow and return books, handling the interactions between Book and Member classes.

Questions and Answers

CoGrammar

Thank you for attending

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