Welcome to the CoGrammar

Debugging

The session will start shortly...

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

Cyber Security 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 will be a **Q&A** 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**

Cyber Security 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 **enable captions** on Google chrome/Microsoft Edge via the accessibility settings.

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/step 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 radicalisation, extremist propaganda, phishing scams, online blackmail and hackers can flourish.

As a component of this BootCamp the *Stay Safe Series* will/is designed to 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.

Download with Caution: Avoiding Dangerous Files

- Use Trusted Sources Only
- Look for HTTPS
- Avoid Clicking on Pop-ups
- Scan Downloads with Antivirus
- Keep Software Updated
- Beware of Free Downloads
- Check File Extensions

Learning Objectives & Outcomes

- Define debugging
- Explain why debugging is crucial in coding.
- Define hypothesis-driven debugging
- Use hypothesis-driven debugging to identify potential causes of issues.
- Use print statements and the VS Code debugger to locate and fix errors.

Debugging

January 2025

Dictionaries

What types of errors have come across with the programs you have written?

Dictionaries

What steps did you take to try and solve your errors?

Polls

Please have a look at the poll notification and select an option.

When an exception is not handled in Python, what typically happens?

A. The program continues executing
B. The program terminates immediately
C. The program displays a warning but continues
D. The program freezes without any message

Polls

Please have a look at the poll notification and select an option.

Which error type occurs when the program has incorrect output?

A. Syntax Error
B. Runtime Error
C. Logical Error

Debugging

- The process of finding and fixing errors or ‘bugs’ in code.
- Why debugging
    - Quality code
    - Better performance
    - Reduced crashes

Common Types of Errors

- Syntax Errors: issues in the syntax of the code.
- Logical Errors: Code runs but doesn't give the expected output.
- Runtime Errors: errors that occur while the code is running.

Debugging Tools

- We will use two different tools for debugging.
  - Python print() statements

```
print(f"{my_var = }")
```

  - Built-in VS code debugger

Hypothesis-Driven Debugging

- Hypothesis-driven debugging is forming ideas (hypotheses) about what could be causing the problem, then testing these ideas systematically.
- Steps:
  a. Observe the problem or unexpected output.
  b. Form a hypothesis about what might be causing the problem.
  c. Test the hypothesis by examining variables or isolating parts of the code.
  d. Fix the issue and re-run the code to confirm.

Polls

Please have a look at the poll notification and select an option.

Which option in the debugger allows you to go into a function and step over the code?

A. Step Over
B. Step Into
C. Step Under
D. Step Out

Polls

Please have a look at the poll notification and select an option.

Which option in the debugger allows you to go from breakpoint to breakpoint?

A. Restart
B. Step Into
C. Continue
D. None

Questions and Answers

CoGrammar

Thank you for attending

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