




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 are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- 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.

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

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.



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Debugging

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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



Thank you for attending



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