Welcome to the

CoGrammar

Skills Bootcamp:
Control Structures: if, else, and elif Statements

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

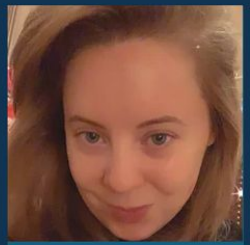
We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

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

Rafiq Manan



Charlotte Witcher

Nurhaan Snyman

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

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

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Learning Objectives & Outcomes

- Define the boolean data type.
- Explain what the boolean data type is used for
- Use the boolean data type within Python code.
- Define what a conditional statement is.
- Explain what a conditional statement is used for.
- Implement conditional statements to run code based on a specific condition.
- Create decision-making algorithms
- Debug control structures for errors

Control Structures

October 2024

Control Structures

Have you ever created a program where some of the code does not have to run every time?

Control Structures

Did you try to solve this problem? If so, how did you do it?

Polls

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

What is the boolean value of the expression 3 > 5?

A. True
B. False
C. None

Polls

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

What is the output of the following code?

A. True
B. False
C. None

```
x = True
if x:
    print("True")
else:
    print("False")
```

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Boolean Data Type

- Represents True or False.
- Can be used to represent other binary system.
- Used in conditional statements.
- Represent the binary data in databases.
- Do you have an idea of where you would use the boolean data type?

Conditions

- Produce a True or False result from a comparison.
- Operators:
  - >
  - <
  - <=
  - >=
  - ==
  - !=

Greater and Less Than

- Determines if one value is larger or smaller than the other.
- Greater than (>)
  - 10 > 5 - True
  - 3 > 7 - False
  - 5 > 5 - False
- Less than (<)
  - 2 < 8 - True
  - 7 < 4 - False
  - 3 < 3 - False

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Equal and Not Equal

- Determines if two values are equal or not equal to each other.
- Equal (==)
  - 10 == 10 - True
  - “Hello” == “Hello” - True
  - 5 == 1 - False
  - 5 == “5” - False
- Not Equal (!=)
  - 3 != 6 - True
  - “Hello” != “Hi” - True
  - 5 != 5 - False
  - “Hello” != “Hello” - False

Equal or Greater and Equal or less

- Determines if a value is greater than, less than or equal to another value.
- Greater than or equal (>=)
  - 10 >= 5 - True
  - 3 >= 7 - False
  - 5 >= 5 - True
- Less than or equal (<=)
  - 2 <= 8 - True
  - 7 <= 4 - False
  - 3 <= 3 - True

AND

- We can use ‘and’ to add more conditions
- All conditions have to be True for overall condition to be True
  - 4 < 5 and 10 > 7 - True
  - ‘Dave’ == ‘Dave’ and 2 <= 5 - True
  - ‘Good’ == ‘bye’ and 1 > 2 - False
  - 10 < 20 and 5 == 4 - False

OR

- We can also use ‘or’ to add more conditions
- Only one conditions has to be True for overall condition to be True
  - 10 > 7 or 20 < 100 - True
  - 5 == 5 or ‘1’ == 1 - True
  - 20 < 10 or 5 == 4 - False

Let’s take a break

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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.

Shop Smart:

Staying Safe with Online Purchases

- When shopping online, prioritize safety by purchasing from well-known, reputable websites and avoiding deals that seem too good to be true.
- Look for secure sites with "https://" in the URL and a padlock icon, indicating encrypted transactions.
- Use strong, unique passwords for your shopping accounts, enable two-factor authentication (2FA) where possible, and avoid saving payment information on websites.
- Stick to trusted payment methods, such as credit cards or PayPal, which offer buyer protection. Additionally, shop on private networks—avoiding public Wi-Fi—and monitor your bank statements regularly for any unauthorized transactions.

Conditions

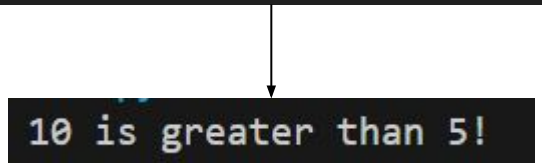
Give me the conditions for the following scenarios:

- How can I determine if an integer variable named “num” is smaller than 5?
- How can I determine if a string variable named “name” is equal to “John”?
- How can I determine if two variables named “num1” and “num2” are not equal to each other and “num1” is smaller than 5?

If-Statements

- Checks if a certain condition is True.
- If the conditional result is True the code inside the if-block will run.

```
if 10 > 5:
    print('10 is greater than 5!')
```

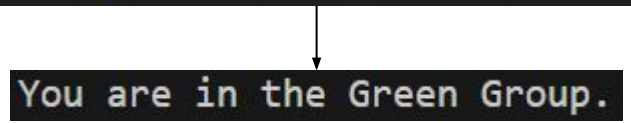


```
10 is greater than 5!
```

If-Elif-Statements

- Compare data to more than 1 value.
- Use ELIF to add another condition to an if-statement.
- If first condition is False the next condition is checked until one of the conditions is True or if there are no more conditions.

```
letter = "B"
if letter == "A":
    print("You are in the Blue Group.")
elif letter == "B":
    print(f"You are in the Green Group.")
```



If-Elif-Else-Statements

- Allows for a final clause in our if statement that will execute if no other conditions are True.

```
user_group = "C"
if user_group == "A":
    print("You are in the Blue Group.")
elif user_group == "B":
    print(f"You are in the Green Group.")
else:
    print("Unfortunely you do not have a Group.")
```

```
Unfortunely you do not have a Group.
```

```
x = 10
if x == 10:
    print("Equal")
elif x > 5:
    print("Greater")
else:
    print("Smaller")
```

Summary

- Boolean values are used to represent True and False, or binary values.
- Conditions compare values and produce a result of True and False
- Conditions are used in If-statements to have code execute based on a specific condition.
- We have different types of operators to create a variety of different conditions.
- Elif can be used to add more than one condition to check in an if-statement.
- Else allows for a clause at the end of an if-statement to execute if none of the conditions are True.

Questions and Answers

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Thank you for attending

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