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Tutorial 5

Data Types and Structures in Python and R

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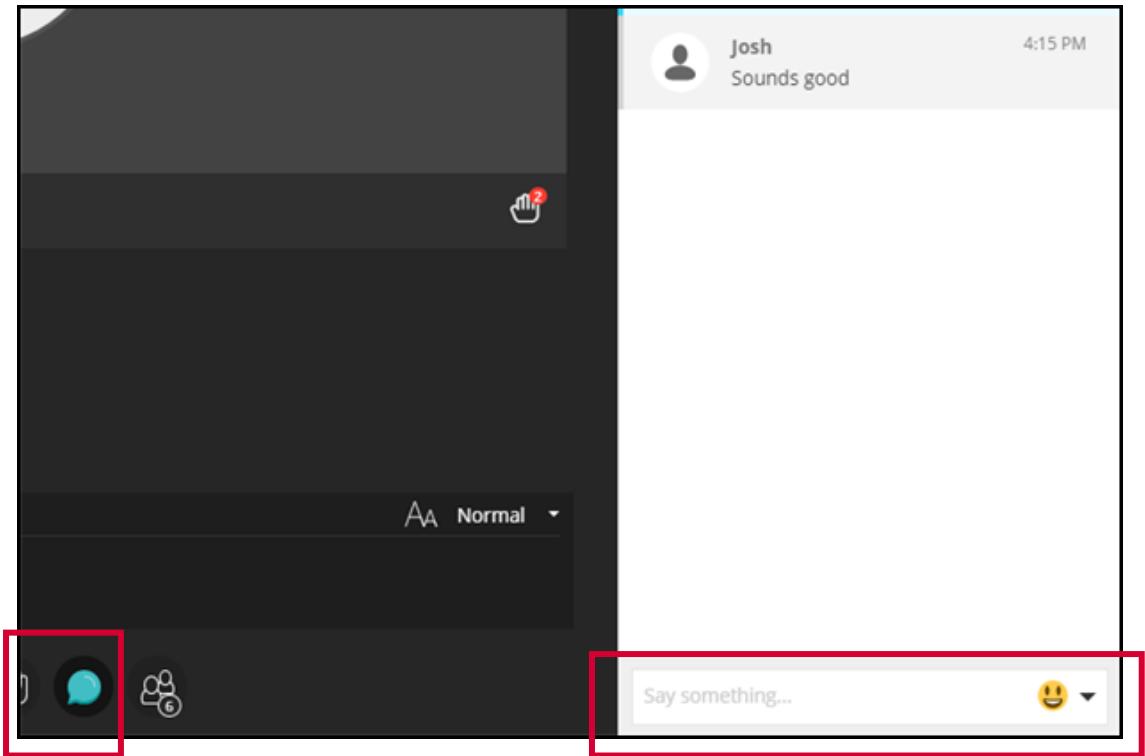
Audio check

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How are you feeling today on this range of expressive animals?



Agenda

- Do not forget 3 stars, a wish, and a step mini-diaries ★★★🚀🚧
- Assessment overview + Q&A – due 30 June 2025 2pm BST
- !? Error of the week
- 💬 More on data frames notebooks
- ? Any questions
- 🎁 [Course feedback survey](#)



Course Assessment



Assessment

This area includes information about the assessments for this course and submission dropboxes. (Click to expand)

- [Assessment Overview and Feedback Information](#)
Assessment details, important dates, where to find feedback, and other assessment information.
- [Reflective writing guidance](#)
- [Assessment Criteria and Submission Details](#)
- [Assignment Submission Portals](#)
Submission portals (Turnitin) for the following assignment elements • Python Code PDF • Python Code IPYNB notebook • R Code and Report PDF • R Code and Report RMD Submission Due Monday the 30th of June, 2:00pm (BST). Make sure you have put your exam number in the author line and file name of all submissions.
- [Questions about Assessment](#) 
If you have any questions about the assignment, please post them here. FAQ Is my exam number B123456? No! This is a placeholder that is obviously incorrect. You must change this to be your exam number both in the file name and in the author lines in both the .ipynb and .RMD files. You will be deducted points if you do not include your exam number correctly in your submission (this means do not include your name, your student number, or the placeholder exam number). Can I load the data for Task 1 from the PHS website? No. You must use the data files provided for the assessment. How do I submit my assignment? There are 4 submission boxes included in the Assessment folder on Learn. These are labelled by the file type to be submitted. I ...

- Assessment folder now on course GitHub repository
- See Assessment Criteria and Submission Details page on Learn
- Due 30 June 2025 14:00 BST (UCT+1)
- Submit via Turnitin Portals
- Submit 4 files
 1. .ipynb file with your Python code solutions
 2. PDF of your Python code solutions
 3. .RMD file with your R code solutions and report
 4. Knitted PDF of your R code solutions and report



Assessment outline

- Coding tasks and accompanying report
- 2 tasks to complete in both Python and R
- Report includes 3 sections **written in RMD file**
 1. Approach to solving the tasks – **1100 words max across both tasks**
 - Elaborating on the approaches you took to solve the tasks (what you did and why you did it this way) and how your approach was similar or different between the 2 languages
 2. Other data types and structures – **150 words max for each task**
 - Discussing 2 other data types or data structures and why they would or would not be suitable for each task (4 alternative data types or data structures in total in a language of your choice)
 3. Reflective account – **300 words max**



Submission requirements

- 1st step: rename the files and author lines with your exam number

Your exam number is listed at **MyEd > Accounts > Progression > My Student Record**.

- Points will be deducted on submissions that do not include exam numbers and/or include names or student numbers

The screenshot shows a user interface for managing student records. At the top, there are tabs for 'Current Addresses' (which is selected) and 'Future addresses'. Below this, there are sections for 'Home' and 'Semester'. The 'Home' section contains blurred address details and two 'Add new Address' buttons. The 'Semester' section contains blurred address details and a note: 'If you have a place in University accommodation you do not need to add a semester address. It will appear here automatically in September.' Below these sections is a note: 'If you need to update any information below that cannot be edited from this screen please refer to the [Change Student Records](#) webpage.' At the bottom, there are fields for 'Full Name', 'Known as', 'Date of Birth', 'Exam Number' (which is circled in red), 'Country of Birth', and 'Nationality'. There are also 'Edit' and 'Add' buttons.



Submission requirements

- See video for more details on downloading and submitting files

-  Assignment Submission Portals

Submission portals (Turnitin) for the following assignment elements • Python Code PDF • Python Code IPYNB notebook • R Code and Report PDF • R Code and Report RMD Submission Due Monday the 30th of June, 2:00pm (BST). Make sure you have put your exam number in the author line and file name of all submissions.
-  Downloading and submitting final assignment files (19:24)

DTSPR HEIN11068 video explaining how to download and submit the files for the final assignment
-  Python Code (PDF) Submission (Part 1 of 4)

Due date: 30/06/2025, 14:00 (UTC+1)
-  Python Code (IPYNB notebook) Submission (Part 2 of 4)

Due date: 30/06/2025, 14:00 (UTC+1)
-  R Code and Report (PDF) Submission (Part 3 of 4)

Due date: 30/06/2025, 14:00 (UTC+1)
-  R Code and Report (RMD) Submission (Part 4 of 4)

Due date: 30/06/2025, 14:00 (UTC+1)



Marking criteria

50% of total mark for your written report

50% of total mark for your code

Criteria	Description	Weighting
Problem solving (code)	Evidence of analytical thinking in completing the coding tasks, integrating what has been taught in the course	20%
Python code quality (code)	Code is clean, meaningful, and well structured, integrating good coding practice. Demonstrating an understanding of Python and related libraries/modules	15%
R code quality (code)	Code is clean, meaningful, and well structured, integrating good coding practice. Demonstrating an understanding of R and related packages.	15%
Critical thinking (report)	Approaches to solving the tasks and other data types or structures are well reasoned and explained. Discussion is presented in clear academic writing showing critical analysis and understanding of the process to complete the tasks in each language, how they are similar and different, and larger context of data types and structures.	40%
Reflective practice (report)	Narrative reflection of your learning on the course	10%



Any questions?



!? Error of the week !?

Common errors when pivoting data frames





Course Feedback Survey

- Takes 5 minutes or less!
- Each response is read individually by the course team
- Feedback used to create adjustments to the course for next year
 - This is how the Data Dialogues series came about, for example!
- The only official way we know if we are doing a good job, so please let us know!
- Tell us what brought you joy and what you wish was different

[Give a gift to Brittany and the course team \(survey link\) here](#) 



Working with data structures notebooks

- 3 files for this tutorial
 1. Tutorial05-Python.ipynb
 2. Tutorial05-R.RMD
 3. Map-HealthBoards.png
- Solutions notebooks released after the Friday afternoon tutorial
 - Really do try the exercises without looking at the solutions – trial and error is the best way to learn!

