

## RSE Assessment: Develop a CURB-65 Calculator

This assessment will test you on your attention to detail and use of your own initiative to research and develop a project.

Please do not spend more than 2 hours on this task, even if you are unable to complete it.

### Aim

You have been asked by a researcher to create and make available a Linux-based web tool which given appropriate inputs calculates the CURB-65 score<sup>1</sup> - a commonly used measure of severity in pneumonia patients.

### Requirements

1. Develop using Python as it is best supported by the informatics team.
2. Use a CSS framework as the basis of your tool to simplify UI design
3. Create a web form which contains the fields required to calculate the CURB-65 score. The researcher who asked for this tool also requested that:
  - a. age is calculated from fields containing date of visit and date of birth
  - b. patients are identified using a manually entered unique ID (pattern Pnnnnnn)
  - c. the inputs are appropriately validated
4. Calculate the score upon submitting the form
5. Save the field data and the calculated score into a DBMS
6. Show the score to the user.
7. Show severity to the user using different colours / formatting if patient is: low severity (CURB-65 0-1); medium severity (CURB-65 2); or high severity (CURB-65 3-5).
8. Add unit/regression tests within your codebase to confirm the score/severity is calculated correctly and handles edge cases/null values.
9. In a README.md, document:
  - i) how to install (assuming python and pip are already installed)
  - ii) execute tests
  - iii) run a test server on Linux
  - iv) justification for your choice of technologies (e.g. libraries, frameworks, DBMS etc)
  - v) any other questions you would ask the researcher about the project

N.B. you do not need to use a full Python package management system

10. Create a repository containing your project in github and share with `rcfree` and `bryant7136`
11. Email [rob.free@leicester.ac.uk](mailto:rob.free@leicester.ac.uk) and [luke.bryant@leicester.ac.uk](mailto:luke.bryant@leicester.ac.uk) to confirm you have done this.

If you have time remaining, you can add:

- i) options to view the list of individuals entered, with pagination
- ii) a search function to find patients using their ID
- iii) improve visual look (e.g. add common header and footer, improved format etc.)

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<sup>1</sup> Lim W, van der Eerden MM, Laing R, Boersma W, Karalus N, Town G, et al. Defining community acquired pneumonia severity on presentation to hospital: an international derivation and validation study. *Thorax*. 2003 May;58(5):377–82.