

**CSC7426: Practice Exam**  
**Dr J Paul Gibson**

**Friday 14<sup>th</sup> April 2023**

**Answer only 1 question** – if you answer more than 1 question then only the first answer will be evaluated and awarded a mark.

You are allowed access to any secondary material (notes/books/web). Please correctly cite/reference any material that you use in your answer that is not your own work. (Plagiarism of secondary material will be punished and may lead to disciplinary action.)

You have 3 hours for the exam. You should not need more than 2 hours to answer a question. Please submit your answer electronically – email [paul.gibson@telecom-sudparis.eu](mailto:paul.gibson@telecom-sudparis.eu) - as a .pdf (or plain text).

If necessary, more time can be provided (but you should not need it).

**Question 1:**

What is your favourite programming language and why? If you could change 3 things about the language what would these be and why? Give concrete examples.

**Question 2:**

Many individuals have made major contributions to software and data engineering. Choose an individual who you believe has made a significant contribution and summarise their impact (direct and/or indirect) on the way in which you work as a software developer.

**Question 3:**

Using some code that you have written as an example, explain the importance of testing and documentation in improving the quality of the code.

**Question 4:**

Which of the problems that you worked on was the most challenging (explain why)? Which of the problems did you learn from the most (explain why)? Please do not use the same problem for both of these.

**Question 5:**

If you could choose a software development company to work with during a summer internship, which company would you chose and what sort of project would you wish to work on. What would be the learning objectives of the internship and how would you hope to achieve them?

**Question 6:**

Given the current advances in AI, do you think that software developers will be replaced by AI in the near future? What software development roles are the most likely to be around in the long-term (for the next 50 years) even if General Artificial Intelligence is reached during this timeframe?