

# Research Computing Coursework Report

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## Introduction

## Algorithm Selection and Prototyping

Paragraph on backtracking using templates [1] [2]

Paragraph on Prototyping

Order

## Development, Experimentation and Profiling

Mention of testing-led Development

Git: Branches main, dev, test. Commit messages. Gitignore

Started with templates

Refactoring

Commenting

First solve algorithm, brute-force of combinations

Extra template filtering

Proper backtracking

Read and write

Error catching

Profiling using line profiler in dev

Optimisation in test branch

## Validation, Unit Tests and Continuous Integration

Validation ?

Testing: reason for multiple files

pre-commit: testing excluded, changes to the args

## Packaging and Usability

Structure of packages, modularity, refactored code routines

Usability: docker, documentation, error catching?

## Summary

Reasons for software development practices  
Lessons learnt?

## References

- [1] wikipedia.org. Sudoku solving algorithms, 2023. Date accessed: 7/12/2023.
- [2] wikipedia.org. Mathematics of sudoku, 2023. Date accessed: 7/12/2023.