

# Problem Solving for Computer Science

## IS51021C

Goldsmiths Computing

February 22, 2021



# Admin

- Fourth quiz closes **today at 4pm**
  - Fifth quiz opens next week
- Sudoku assignment:
  - Deadline: **1st March 4pm**
  - Cut-off date: **15th March 4pm**
  - See Department email
- Virtual Contact Hours
  - Classmates only
  - Priority: help with Sudoku assignment

# The module so far

## THEORY



Flowcharts

Searching

**Algorithms**

Recursion

Sorting

Queues

Stacks

Abstract Data Structures

Vectors &  
Dynamic Arrays

Computer model

Analysis

Time complexity

## EXPERIMENT



Functions

Node.js

Programming  
in JavaScript

Arrays & Objects

Command line



# Sorting Algorithms Tutorial

[http://igor.doc.gold.ac.uk/~afior002/sorting\\_algorithms/index.html](http://igor.doc.gold.ac.uk/~afior002/sorting_algorithms/index.html)

We already have two sorting algorithms

Why do we prefer one algorithm over another?

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Why do we prefer one algorithm over another?

*“One is faster than the other”*

Why do we prefer one algorithm over another?

*“One is **faster** than the other”*

Faster in what way?

For which processor?

For which inputs?

Faster in what way?

*The number of **sequential operations** (time-steps) is lower  
in one algorithm than another*

What are these operations?



*The number of **sequential operations** (time-steps) is lower  
in one algorithm than another*

What are these operations?

*Operations performed by a Random Access Machine*

For Review Seminar

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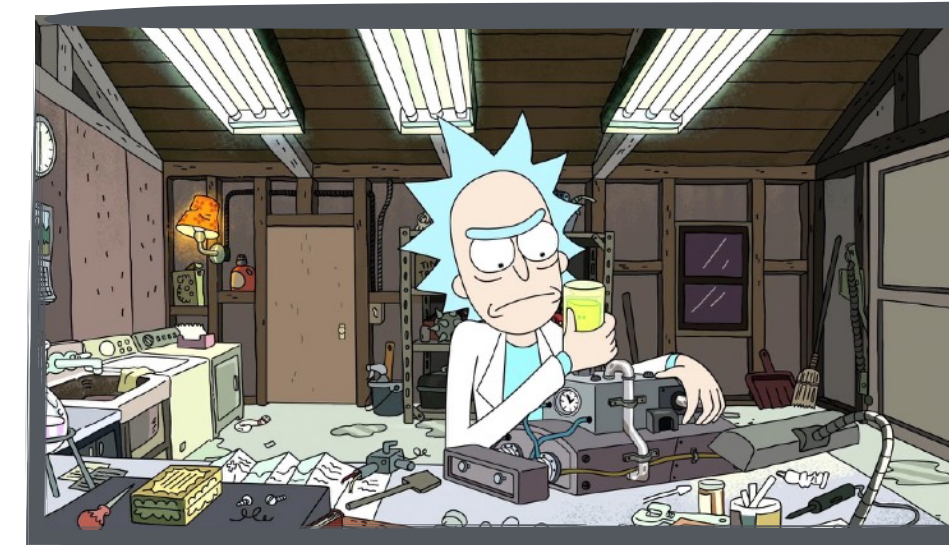
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Today

Go through solutions to Revision Exercises in Week 6