# Code Reading

## Introduction

**(2 mins) Independently - Note down one thing about today's code reading club session in a sticky note...**

* ... that you are looking forward to or excited about
* ... that you are worried or confused about

**(5 mins) Together - Discuss**

1. Give everyone a chance to read out their hopes and fears
2. Use the remaining time to discuss collectively what you want to get out of the club

## Activating Prior Knowledge

The goal of this exercise is to practice to get a first impression of code and relate it to things you already know, but also revealing what things you don't know.

**(5 min) Independently - Study the code**

**(5 min) Independently - Try to answer the following concrete questions about it**

1. What was the first element that caught your eye?
2. Why was that?
3. What was the second thing you noticed?
4. Why?
5. Are these two things related?
6. What syntactic elements are present in the code?
7. What concepts are present in the code?
8. What are things you don't know in the code?

**(10 mins) Together - Discuss the results**

Talk about why things might have jumped out for different people. Discuss the things that people don't know.

When encountering an unfamiliar concept, it is best to try to study it before diving into the code again.

## Monitoring

The goal of this exercise is to keep track of what you are reading and whether you understand it. This will help to communicate more clearly where you don't understand things

**(5 mins) Independently - Mark which lines you understand and which confuse you**

1. This might be related to the previous exercise
2. Try to find out why you find a line confusing: Is it syntax you don't understand, because the problem is complex or because the code is written in a complex way?

**(10 mins) Together - Discuss the results**

1. Try to categorize why some lines were hard to understand
2. Try to close knowledge gaps about the syntax

## Dependency Graph

The goal of this exercise is to be a concrete thing to *do* when looking at new code for the first time. New code can be scary, doing something will help!

**(12 mins) Independently - Examine structure**

*Variables*

1. Go through the code and highlight all variables in red
2. Then draw a link between variables and their uses

*Function / method calls*

1. Go through the code and highlight all methods in blue
2. Then draw a link between methods and their invocations (if possible)

*Instantiation*

1. Go through the code and highlight all instances of classes in green
2. Then draw a link between classes and their instances (if possible)

**(10 mins) Together - Discuss the results**

1. Did anyone have trouble deciding what constituted a variable, function or class?
2. What patterns are visible from the colors and links only?
3. How does the data flow through the code?
4. What parts of the code seem to warrant more attention?

## Summary

The goal of this exercise is to think about the core purpose or function of this code.

**(5 mins) Independently - Summarize**

1. Try to write down the essence of the code in a few sentences

**(10 mins) Together - Discuss**

1. Topics covered by many vs few
2. Strategies used to create the summary (e.g. method names, documentation, variable names, prior knowledge of system)