Programming Techniques COSC1284/2010

Tutorial 4

Online Instructions (Microsoft Teams)

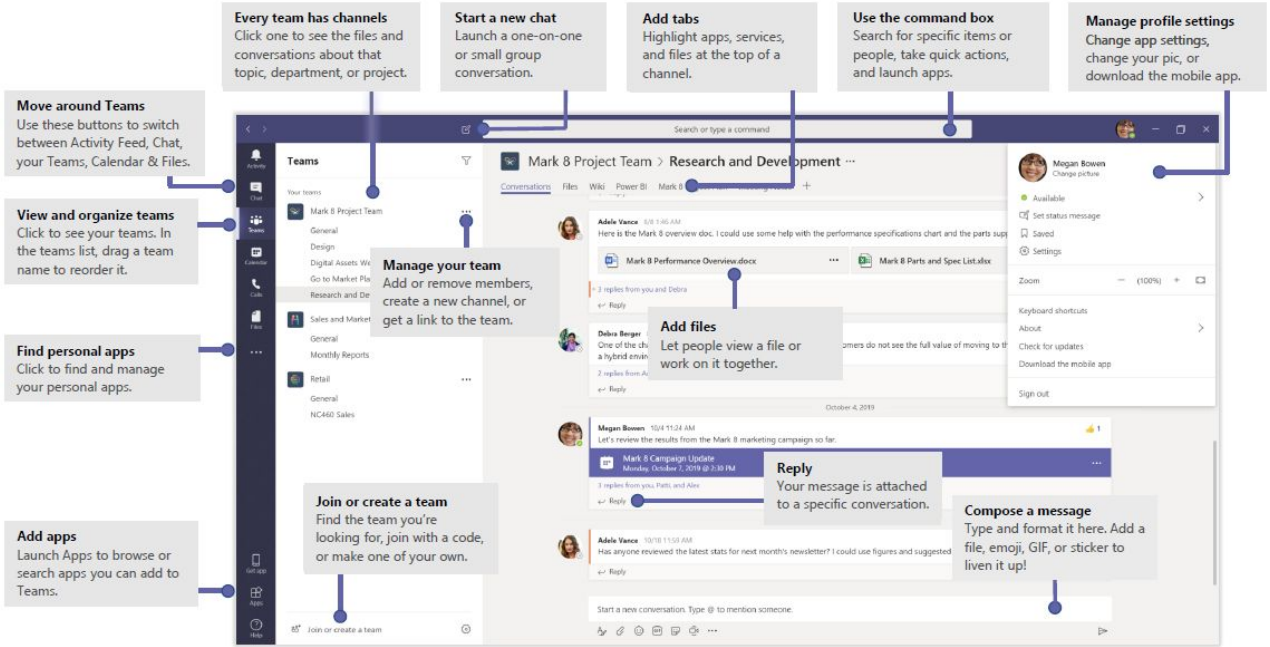
- To interact with your follow students and your tutor you will need the following:
  - Microsoft Teams installed (Web browser version is available)
  - Make sure, that you have signed into the correct tutorial i.e. the same tutorial that you attend on campus.
  - Once the tutorial has started, you will have the ability to interact with your follow students and your tutor via the written chat.
  - Joining Teams YouTube video: https://support.office.com/en-us/article/join-a-teams-meeting-078e9868-f1aa-4414-8bb9-ee88e9236ee4

Microsoft Teams

Microsoft

Quick Start Guide

New to Microsoft Teams? Use this guide to learn the basics.

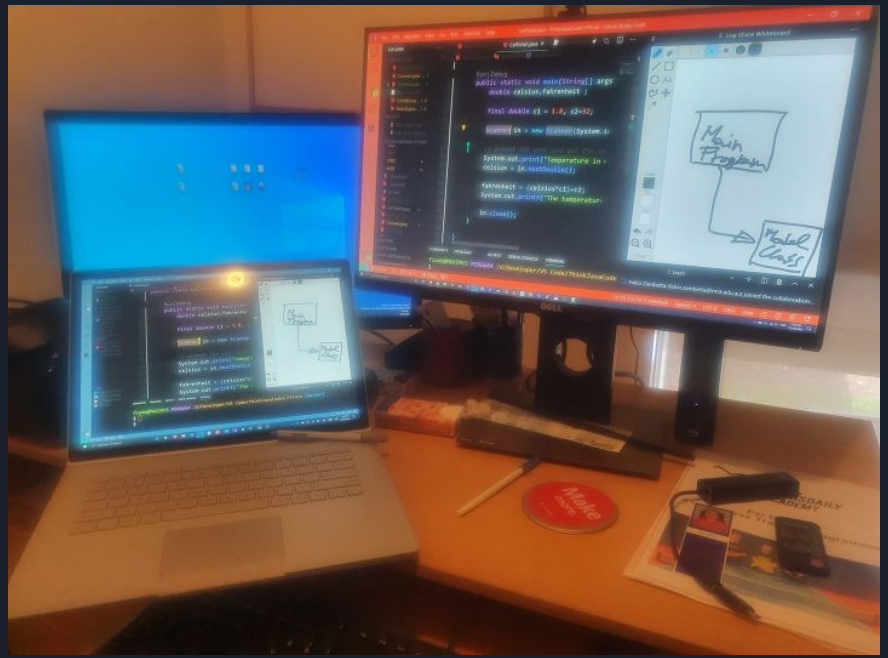


Online Instructions (VS Code)

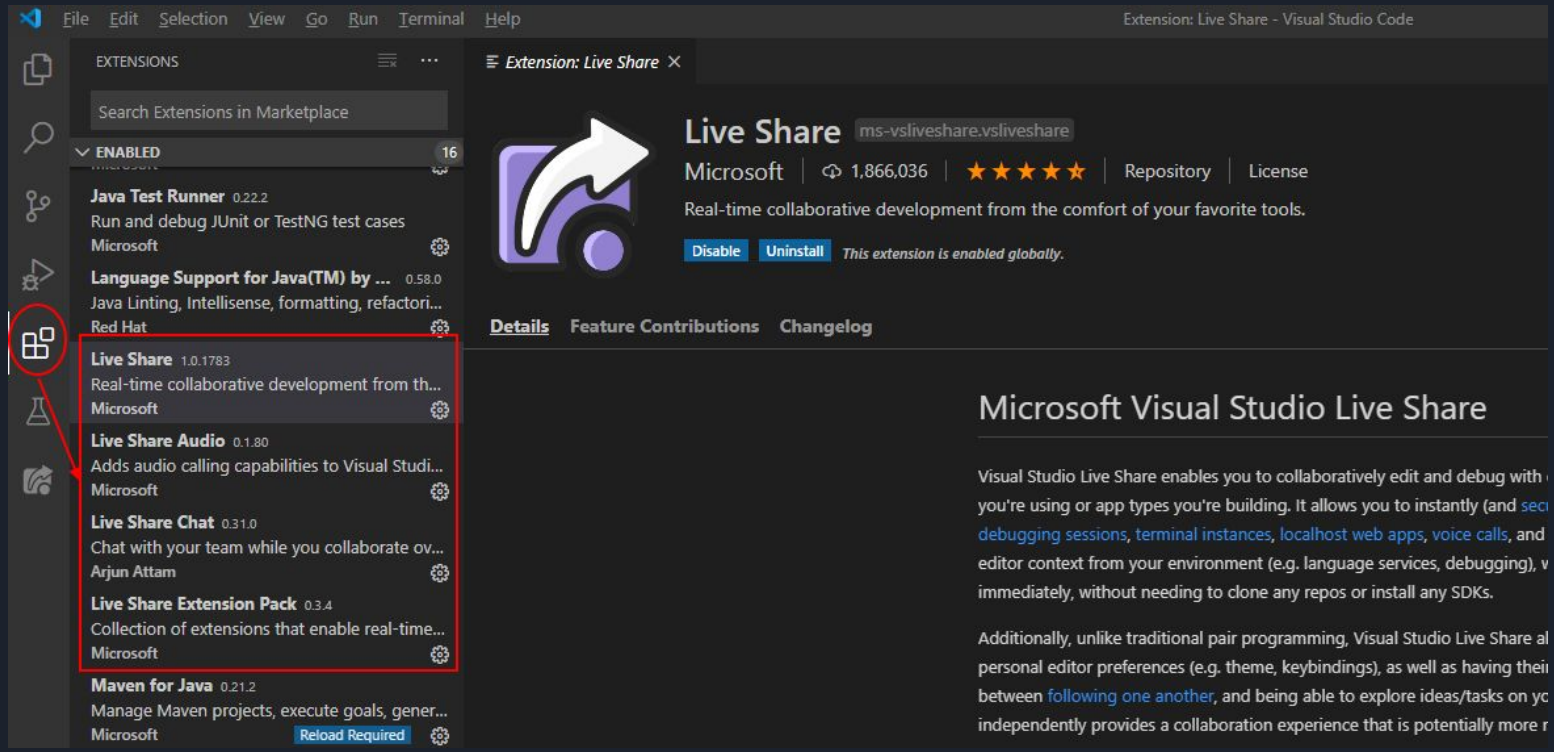
- Assistance to programming will be provided by your tutor via VS Code Live Share
  - Three extensions are needed for VS Code Online Interaction
    - Live Share (1.01783)
    - Live Share Audio (0.1.80)
    - Live Share Chat (0.31.0)
  - Can be installed via the Live Share Extension Pack (0.3.4) or installed individually.
  - Once all extensions are installed, you must restart VS Code to get everything to work.
  - Remember, you need to open the folder where you are storing your code, this true for Live Share too.

Other Useful Extensions for VS Code

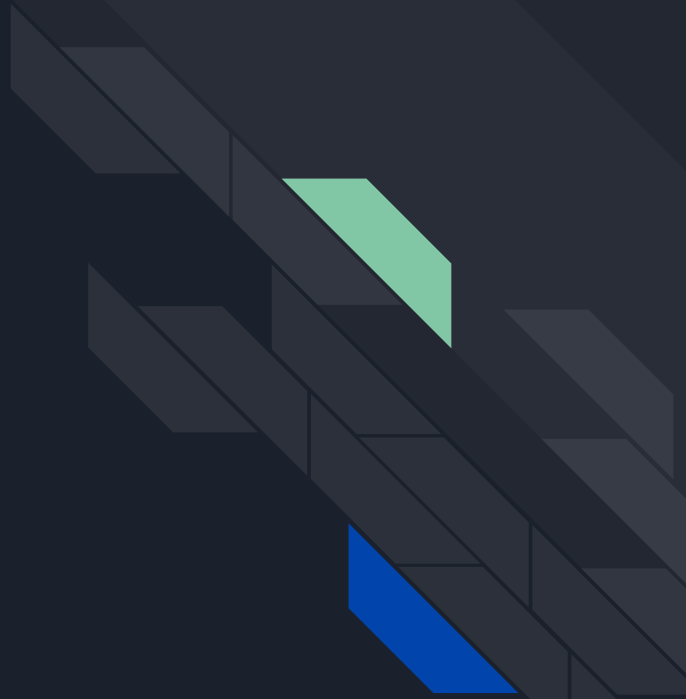
- Peacock: Subtly change the color of your Visual Studio Code workspace, comes with Live Share Extension Pack.
- Live Share Whiteboard: All participants can collaboratively draw on the whiteboard, and see each others changes in real-time, installed as separate extension.



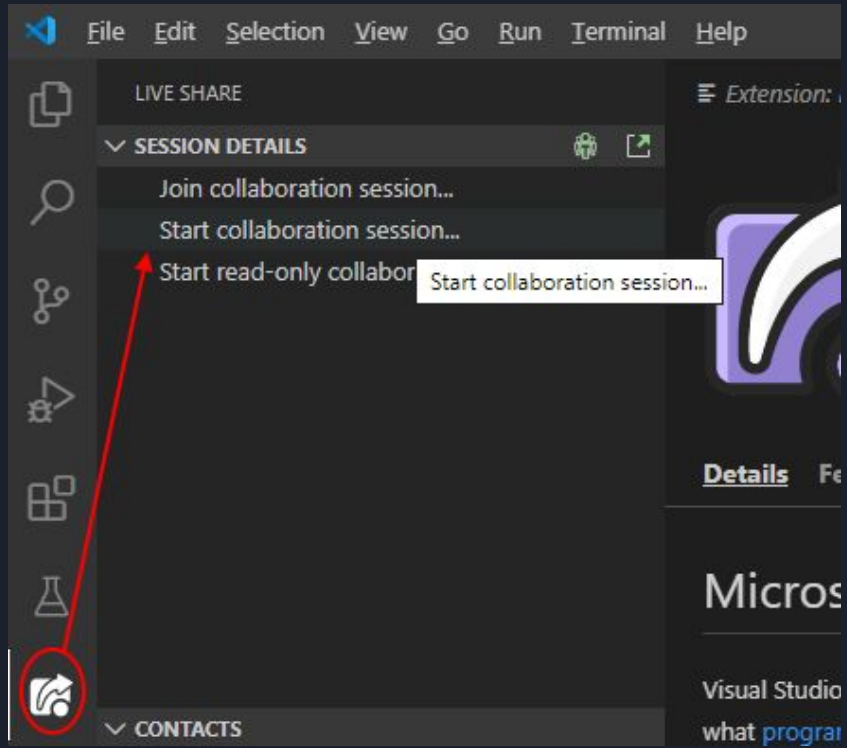
VS Code Live Share Extensions



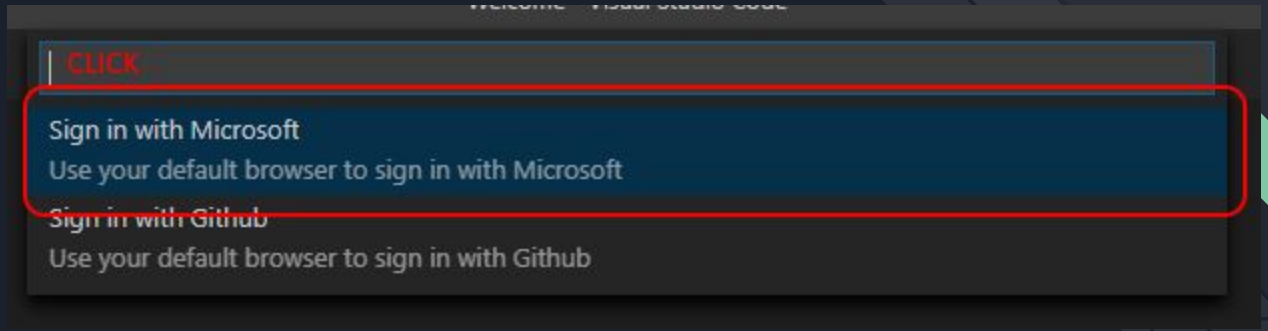
- Restart VS Code and once open,
- then open your code folder.
- You have to open the code that you are already working on, before sharing!

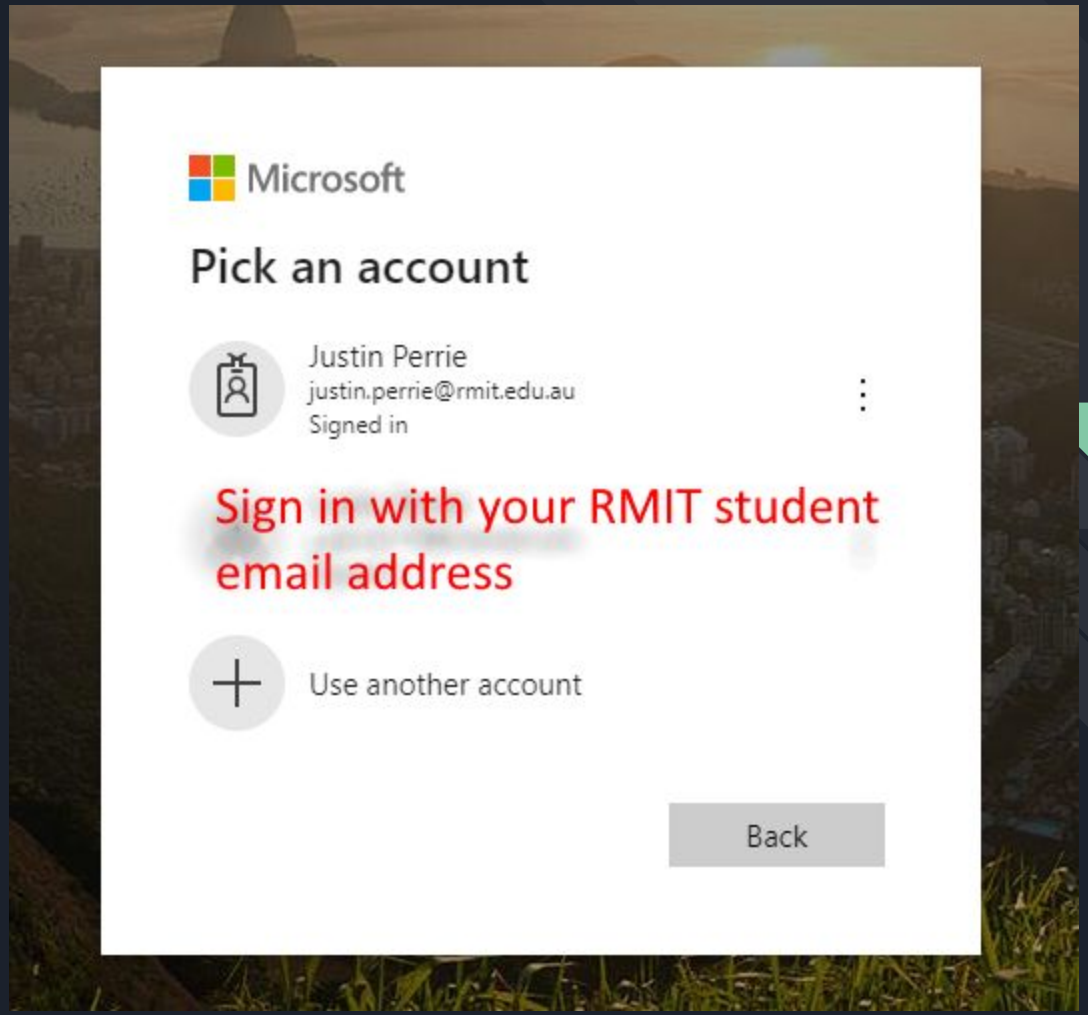


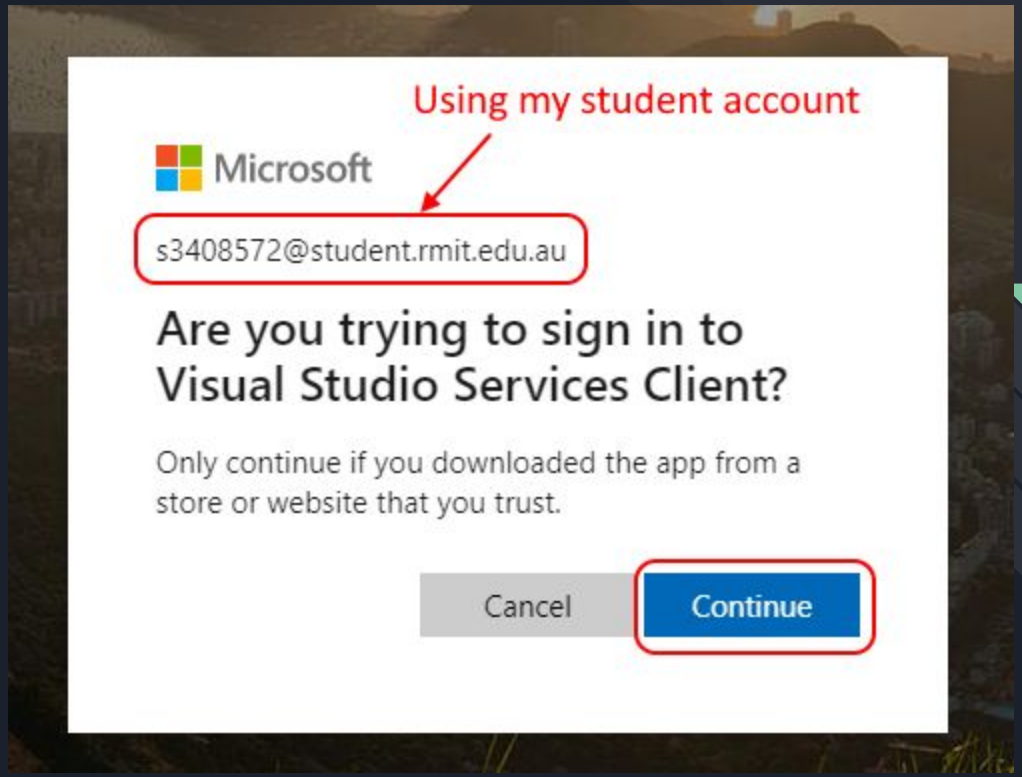
VS Code Live Share - Start Collaboration

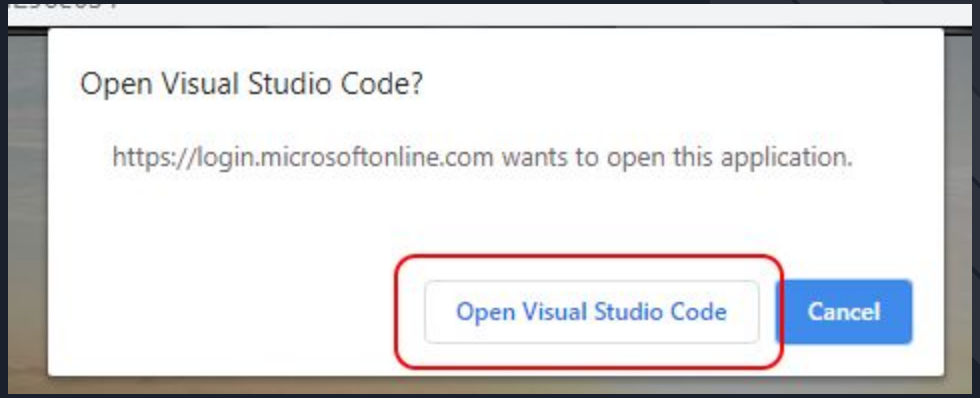


You must sign in with your student email account.

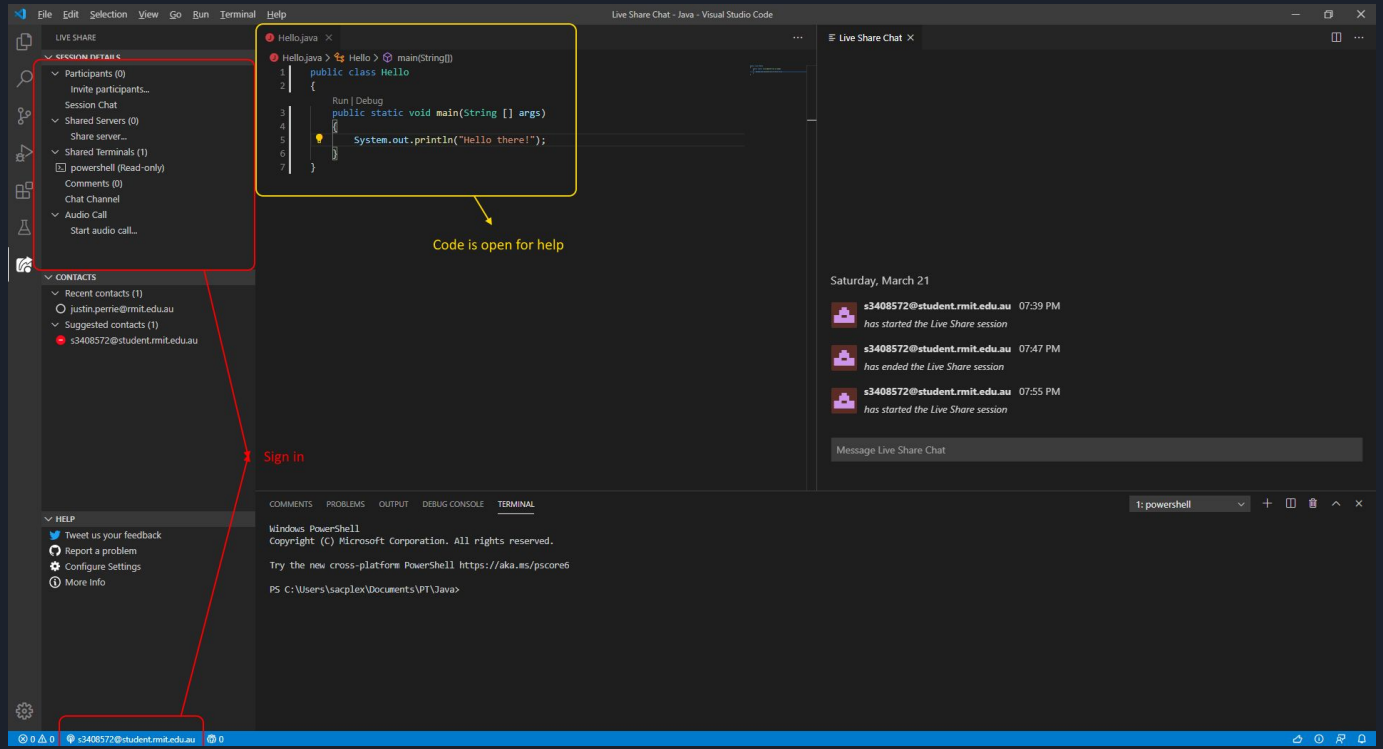

CLICK
Sign in with Microsoft
Use your default browser to sign in with Microsoft
Sign in with Github
Use your default browser to sign in with Github


Microsoft
Pick an account
Justin Perrie
justin.perrie@rmit.edu.au
Signed in
Sign in with your RMIT student email address
Use another account
Back


Using my student account
Microsoft
s3408572@student.rmit.edu.au
Are you trying to sign in to Visual Studio Services Client?
Only continue if you downloaded the app from a store or website that you trust.
Cancel
Continue

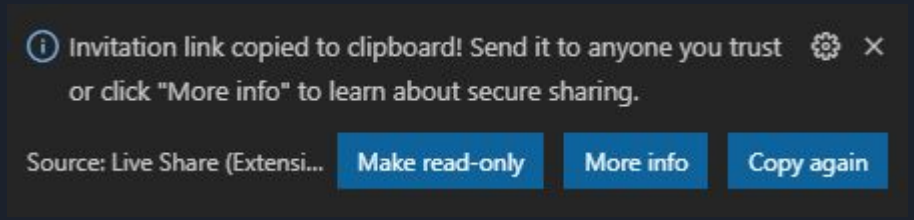

Open Visual Studio Code?
https://login.microsoftonline.com wants to open this application.
Open Visual Studio Code
Cancel

Once signed in, should be like this!

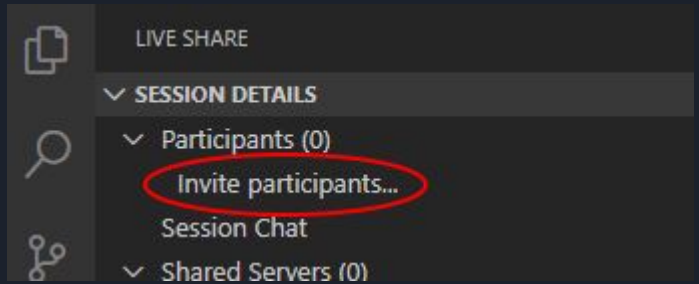


VS Code Live Share - Sending Invitation

- Once connected an invitation link is already stored your computer's memory (the clipboard). You can also copy the link again with this display

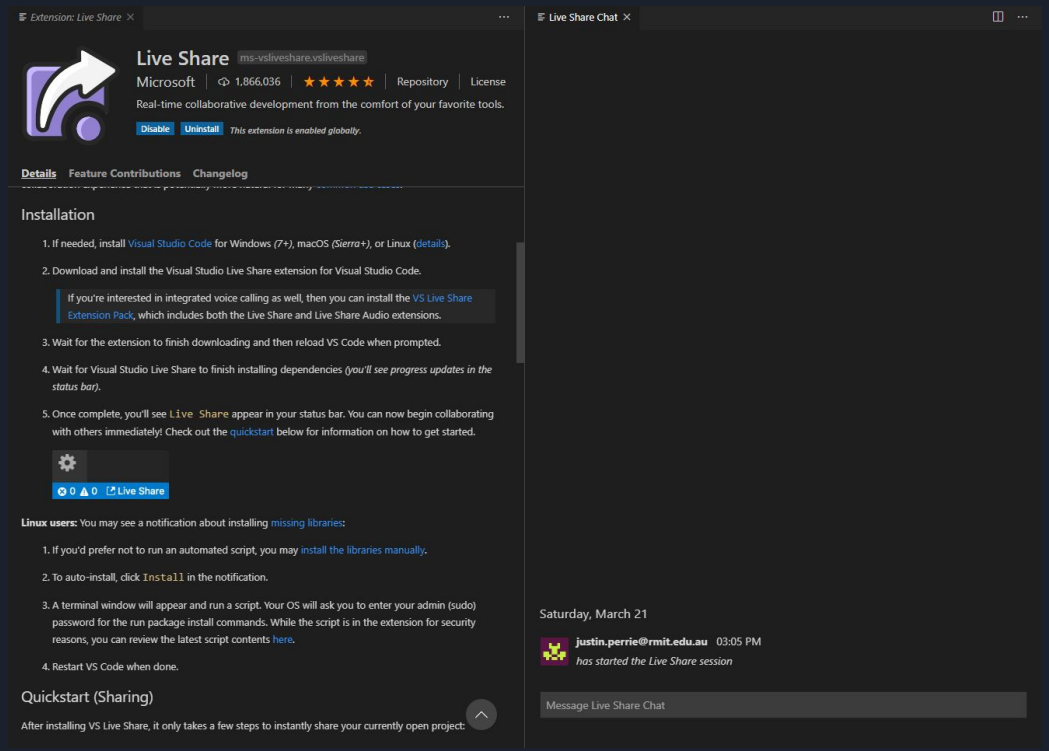


- If the display disappears, click "Invite participants..." on the left

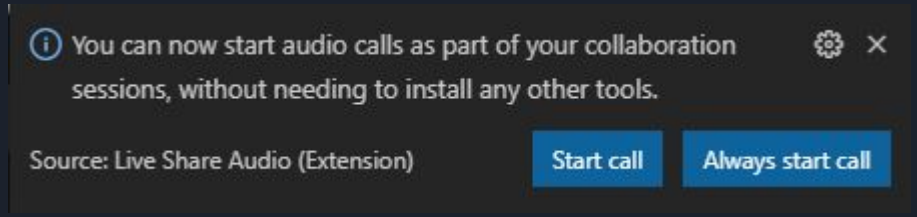


Send the invitation link via teams to your tutor.

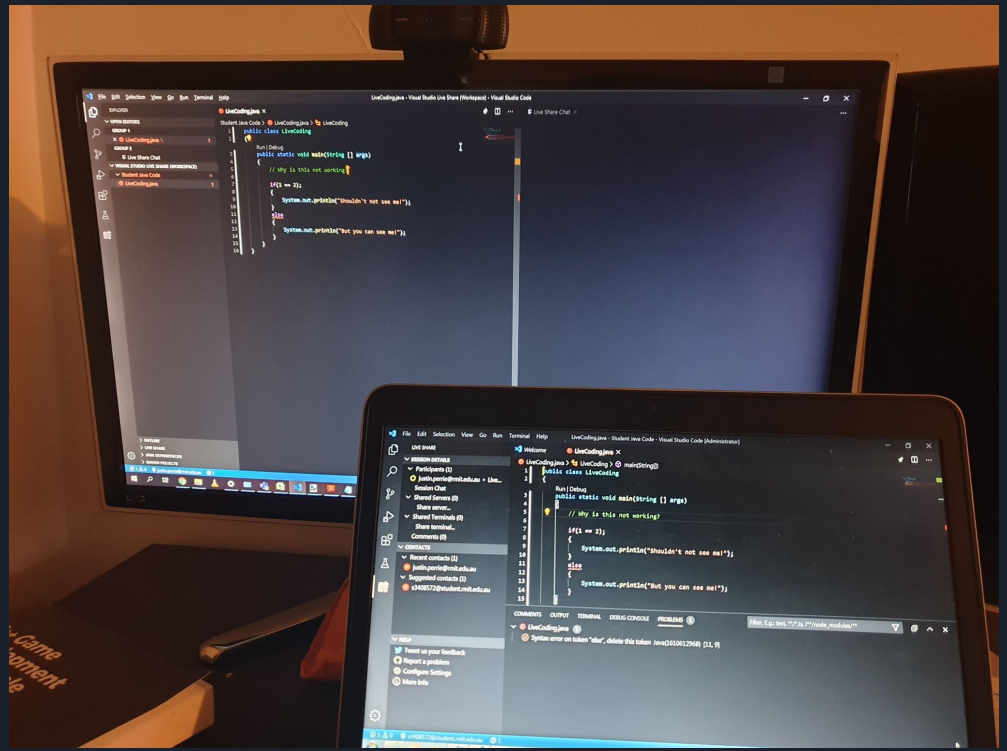
Live Share Chat



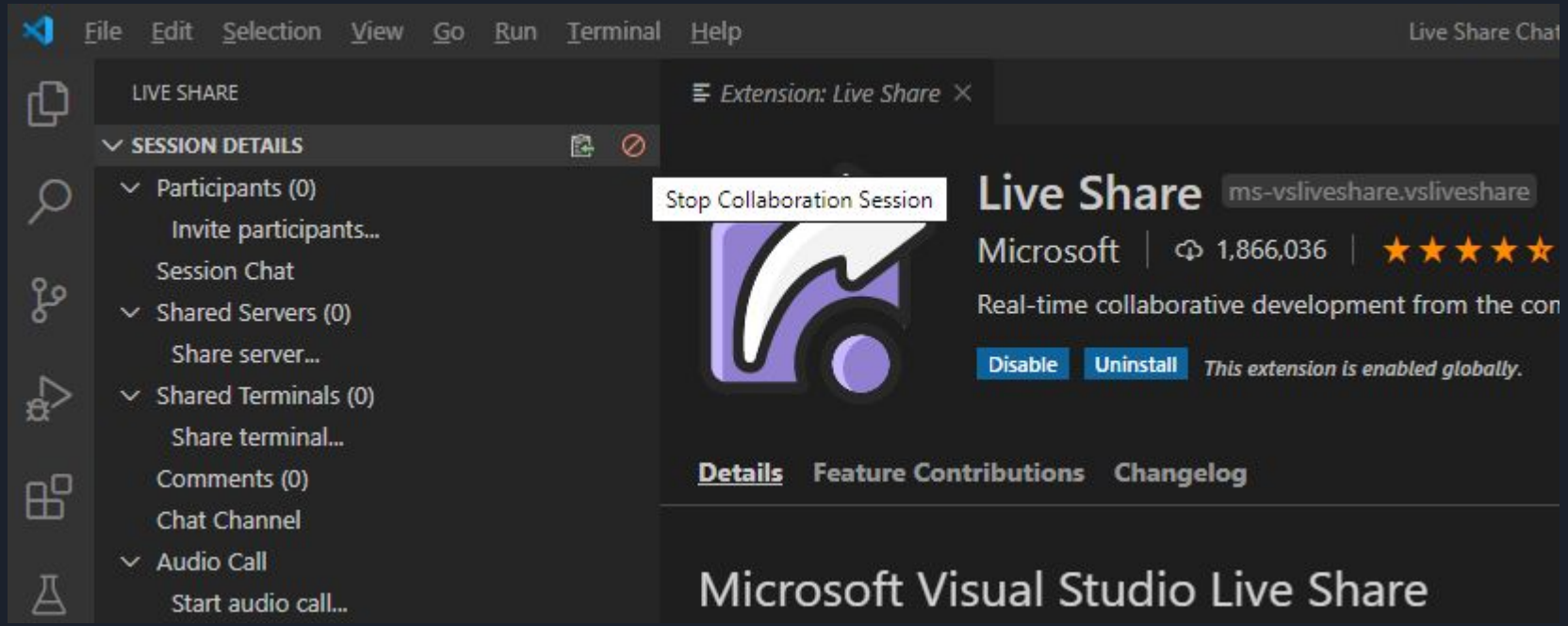
Live Share Audio



VS Code Live Share between Staff and Student



Stop collaboration



Agenda

- Tutorial/Lab
  - Read chapter 5 from the textbook
  - Discuss the concepts with your tutor and fellow classmates
    - Complete chapter 5 - Exercises 1 - 3
  - Attempt on your own
    - Complete chapter 5 - Exercises 4 - 7

Conditionals and Logic

- In the previous examples, we have seen programs start and end with no deviation or detour through the code, this also includes methods from last week.
- In many cases, this becomes impractical as your programs cannot respond to variations of inputs and other processing.
- In today's tutorial you will practice logical statements.
    - &&, II, ! (And, OR, Not)
- As well as if, else, else if.

Exercise 5.1

- Using the following variables, evaluate the logic expressions in the table below. Write your answers as true, false, or error.

```
boolean yes = true;
boolean no = false;
int loVal = -999;
int hiVal = 999;
double grade = 87.5;
double amount = 50.0;
String hello = "world";
```

Expression	Result
`yes == no || grade > amount`	
`amount == 40.0 || 50.0`	
`hiVal != loVal || loVal < 0`	
`True || hello.length() > 0`	
`hello.isEmpty() && yes`	
`grade <= 100 && !false`	
`!yes || no`	
`grade > 75 > amount`	
`amount <= hiVal && amount >= loVal`	
`no && !no || yes && !yes`	

Exercise 5.2

- What is the output of the following program? Determine the answer without using a computer.

```
public static void main(String[] args) {
    boolean flag1 = isHoopy(202);
    boolean flag2 = isFrabjuous(202);
    System.out.println(flag1);
    System.out.println(flag2);
    if (flag1 && flag2) {
        System.out.println("ping!");
    }
    if (flag1 || flag2) {
        System.out.println("pong!");
    }
}
```

```
public static boolean isHoopy(int x) {
    boolean hoopyFlag;
    if (x % 2 == 0) {
        hoopyFlag = true;
    } else {
        hoopyFlag = false;
    }
    return hoopyFlag;
}
```

```
public static boolean isFrabjuous(int x) {
    boolean frabjuousFlag;
    if (x > 0) {
        frabjuousFlag = true;
    } else {
        frabjuousFlag = false;
    }
    return frabjuousFlag;
}
```

The purpose of this exercise is to make sure you understand logical operators and the flow of execution through methods.

Exercise 5.3

- Rewrite the following code using a single if statement.

```
if (x > 0) {
    if (x < 10) {
        System.out.println("positive single digit number.");
    }
}
```