# Two advertising messages ... (no poll today)

Ethel Tshukudu, a PhD student, is studying how people learn new programming languages

She would still like to talk to some students from this course about your experiences

#### Details

Please only people who didn't know any Java before this course

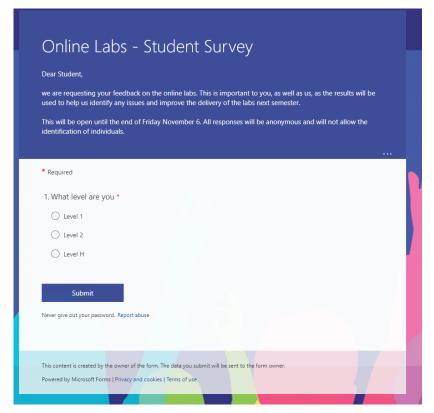
Interviews will be about 50 minutes, informal

Information will not be disclosed in any way that reveals your identity

Especially not to me

£10 Amazon voucher as compensation

Contact Ethel at 2371984t@student.gla.ac.uk



Link posted on Teams (Announcements channel)
Please complete by Friday 6<sup>th</sup> November

# Important thread building blocks

#### Methods of java.lang.Thread

- start()
- interrupt()
- join()
- sleep() (static)

#### java.lang.Runnable interface

• run()

#### Other relevant things

InterruptedException

### Possible issues when using threads

Safety – one thread overwriting data that another is using

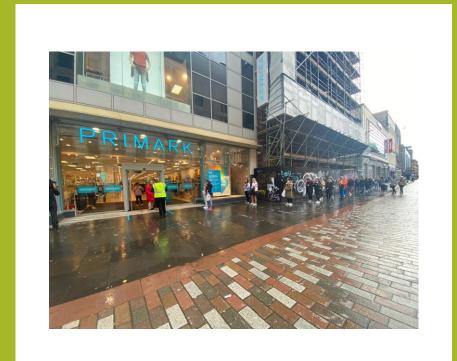
Addressed by locking – **synchronized** keyword, or Lock objects

Liveness, especially deadlock

Triggered by locking – each thread is waiting for the other, neither can progress

Addressed by making sure that locks are accessed in a defined order







## Everyday threads/locking example