

Introduction to Computer Programming

Lecture 1.1:

Course Introduction

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We are ...



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Time Line

- 1 Oct 5th
- 2 Oct 12th
- 3 Oct 19th
- 4 Oct 26th
- 5 Nov 2nd
- 6 Reading Week
- 7 Nov 16th
- 8 Nov 23rd
- 9 Nov 30th
- 10 Dec 7th
- 11 Dec 14th

Nov 23rd: Coursework assignment set

Dec 11th: Coursework assignment deadline

Weekly Schedule

Monday:

- Watch recorded video tutorials (2-3 videos per week), Blackboard or YouTube:
<https://www.youtube.com/playlist?list=PLlePLwgNVGWEIRQviZ2izI8UR8dYPWrTl>
- Complete exercises by Friday of the same week

Wednesday (14:00-16:00):

- Optional drop-in class
- Support and help with completing exercises 1-to-1 support from teaching assistants via video chat

Friday (see timetable for your group meeting time):

- Group tutorial with teaching assistant

Introduction to Computer Programming

School of Computer Science,
Electrical and Electronic Engineering,
and Engineering Maths



Blackboard site: <http://www.ole.bris.ac.uk>

- Course documents
 - Tutorial videos and slides
 - Examples
 - Weekly exercises
- Schedule
- Contact details

Drop-in Classes

Wednesday

1-to-1 support to help with weekly exercises

The screenshot shows the Blackboard Ultra interface. On the left, a dark sidebar lists course navigation: 'Introduction to Computer Programming 2020' (expanded), 'Welcome page', 'Announcements', 'Help for students', 'Live sessions', 'Recordings', 'Discussions', 'Resource lists', 'Weeks 1 - 6 (editable)', 'Assessment, submission and feedback', and 'Blackboard Collaborate Ultra'. The 'Blackboard Collaborate Ultra' item is highlighted with an orange box and has an orange arrow pointing to it from below. The main content area has a green header with the course title and 'School of Computer Science, Electrical and Electronic Engineering, and Engineering Maths'. Below this is a yellow bar labeled 'Welcome page'. The main content area contains a 'Welcome' section with text about the course, mentioning Python, and links to YouTube and slides.

Choose Blackboard Collaborate Ultra from the side pane of the main Blackboard page

The screenshot shows the Blackboard Collaborate Ultra course room. It features a dark header with the text 'Blackboard Collaborate Ultra'. Below this is a white area containing a black icon of a door with a lock, followed by the text 'Course Room Unlocked (available)'. An orange arrow points upwards from the bottom of the main content area towards this text.

Click to enter the Course Room
You will be assigned a TA for 1-to-1 support

Tutorials

Friday

Schedule ↴ ⏪

10 teaching weeks (05/10/20 - 18/12/20)

[break: week 6, 09/11/20]

WEEKLY SCHEDULE

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TEACHING ASSISTANT

MORNING (9:00-10:00)

Abel Pacheco Ortega	1
Ercan Ezin	2
Euan Judd	3
Faegheh Sardari	4
Fanqi Zeng	5
Frederico Dias Paulino Da Costa	6
Huseyin Burak Akyol	7
Kit Simmonds	8
Perla Jazmin Mayo Diaz de Leon	9
Richard Pyle	10
Yanan Liu	11
Zixuan Liu	12
Allison Horney	13
Holly Millea	14
Marceli Wac	15
Charles Khoury	16
Eddie Jones	17
Satya Rammohan& Charlie Leach	18

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Richard Pyle	10

TUTOR GROUP

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Morning 9:00-10:00
Afternoon 13:00-14:00

Your teaching assistant will email you to arrange your first tutorial.

Blackboard Collaborate Ultra

What do you need to know?

- **No** programming skills necessary!
- For those who know how to program, we'll make sure to keep it **interesting with extra challenges**
- Best way to learn programming is by doing it
- We are here to help you!

Weekly exercises are crucial!

TAs are here to support you!

Use of personal laptops



ANACONDA®

- Remote learning – use of personal laptops for duration of course
- First task! → software installation (Anaconda, Spyder)
- Watch the tutorial videos (Blackboard or YouTube)
- We will help you as much as possible but you will all be using different computers and may experience different problems.



What is programming?

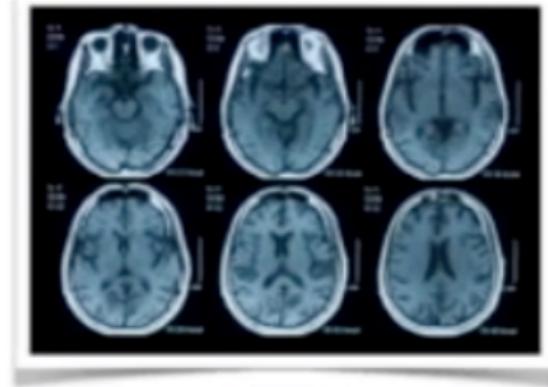
- Programming is telling a computer exactly what to do.
- You have to use a specific language.
- You tell the computer what to do in small steps → **algorithm**



Why are we doing this course?



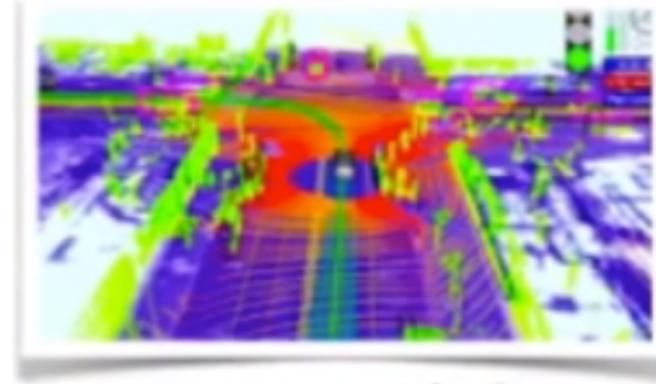
data science



artificial intelligence



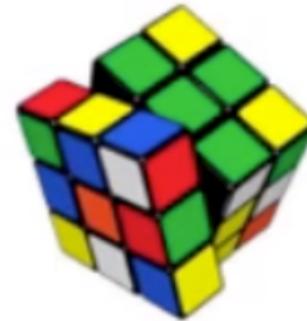
social media



autonomous vehicles

What is an algorithm?

- **Algorithm:** self-contained step-by-step set of operations to be performed
- **Examples:**
 - Cooking recipe
 - How to solve Rubik's cube
 - Solve a quadratic equation
 - Find the highest value in the list
 - etc.



Think like a computer !

Example

Task: Lift operation

1. Wait until door is closed

2. Wait for button to be pressed

If button pressed is higher than current floor

Move lift upwards

If button pressed is lower than current floor

Move lift downwards

3. Wait until current floor equals button pressed

4. Open doors



Example

Task: Lift operation

1. Wait until door is closed

2. Wait for button to be pressed

If button pressed is higher than current floor

Move lift upwards

If button pressed is lower than current floor

Move lift downwards

3. Wait until current floor equals button pressed

4. Stop lift

5. Open doors

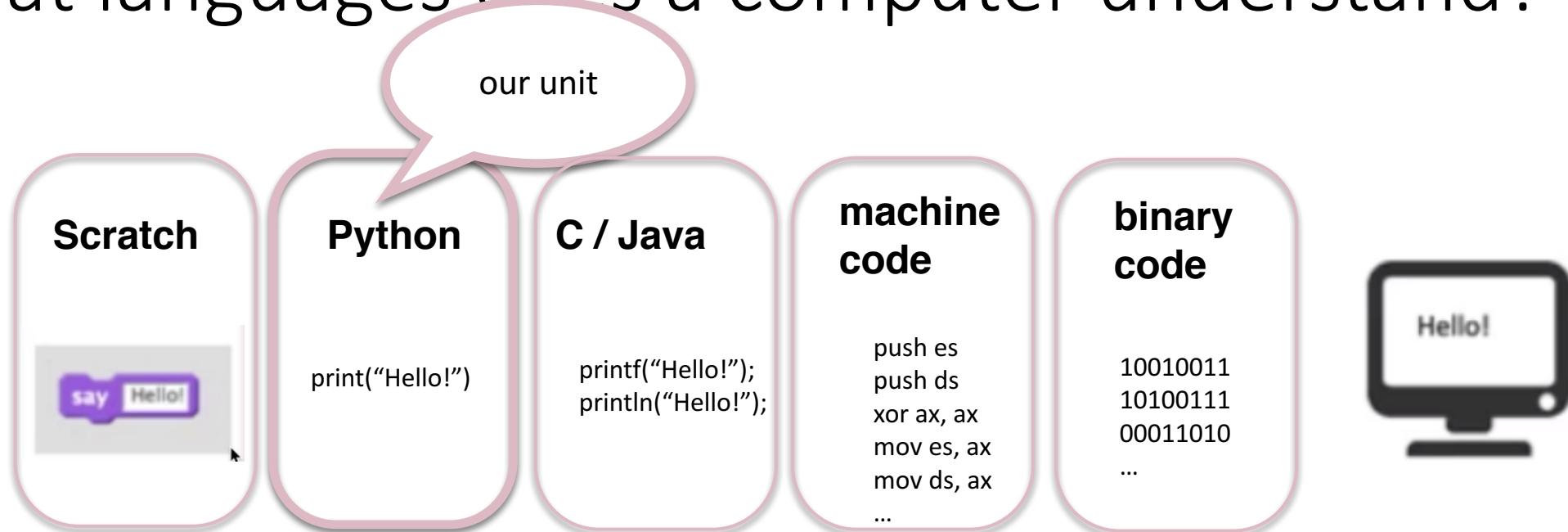


What languages does a computer understand?

1. Wait until door is closed
2. Wait for button to be pressed
 - If button pressed is higher than current floor
 - Move lift upwards
 - If button pressed is lower than current floor
 - Move lift downwards
3. Wait until current floor equals button pressed
4. Stop lift
5. Open doors



What languages does a computer understand?



**High-level
programming language**

**low-level
programming language**

Simplicity

Power, Speed

What languages does a computer understand?

Python

```
print("Hello!")
```



```
print("Hello!")
```

```
display("Hello!")
```



```
printf("Hello!")
```



```
print Hello!
```



```
print (Hello!)
```



Like every language it
has rules called syntax.

Next steps

- ✓ Watch this week's tutorial videos
 - Software installation (Mac, Windows, Linux)
 - Spyder software
- ✓ Attempt this week's exercises
- ✓ Go to drop-in session if you have any problems (*Wednesday*)
- ✓ Attend group tutorial (*Friday*)