TUTORIAL 3: SORTING

Problem: given a list of values, rearrange them into order

$$[2,5,2,1] \longmapsto [1,2,2,5]$$

Solution: there are many ways (i.e. algorithms) to do this!

PROPERTIES OF SORTING ALGORITHMS

Stability

Preserves the relative order of duplicate values after sort

Adaptivity

Complexity / run time varies if the values are already pre-sorted

1. Show examples of stable / unstable sorting:

course name program

e.g. 1. would come after 7. in the sorted list, ...

sorting by name...

	course	name	program
1.	COMP1927	Jane	3970
2.	COMP1927	John	3978
3.	COMP1927	Pete	3978
4.	MATH1231	John	3978
5.	MATH1231	Adam	3970
6.	PSYC1011	Adam	3970
7.	PSYC1011	Jane	3970

stable sorted

unstable sorted

course name program

e.g. 7. comes before 1.