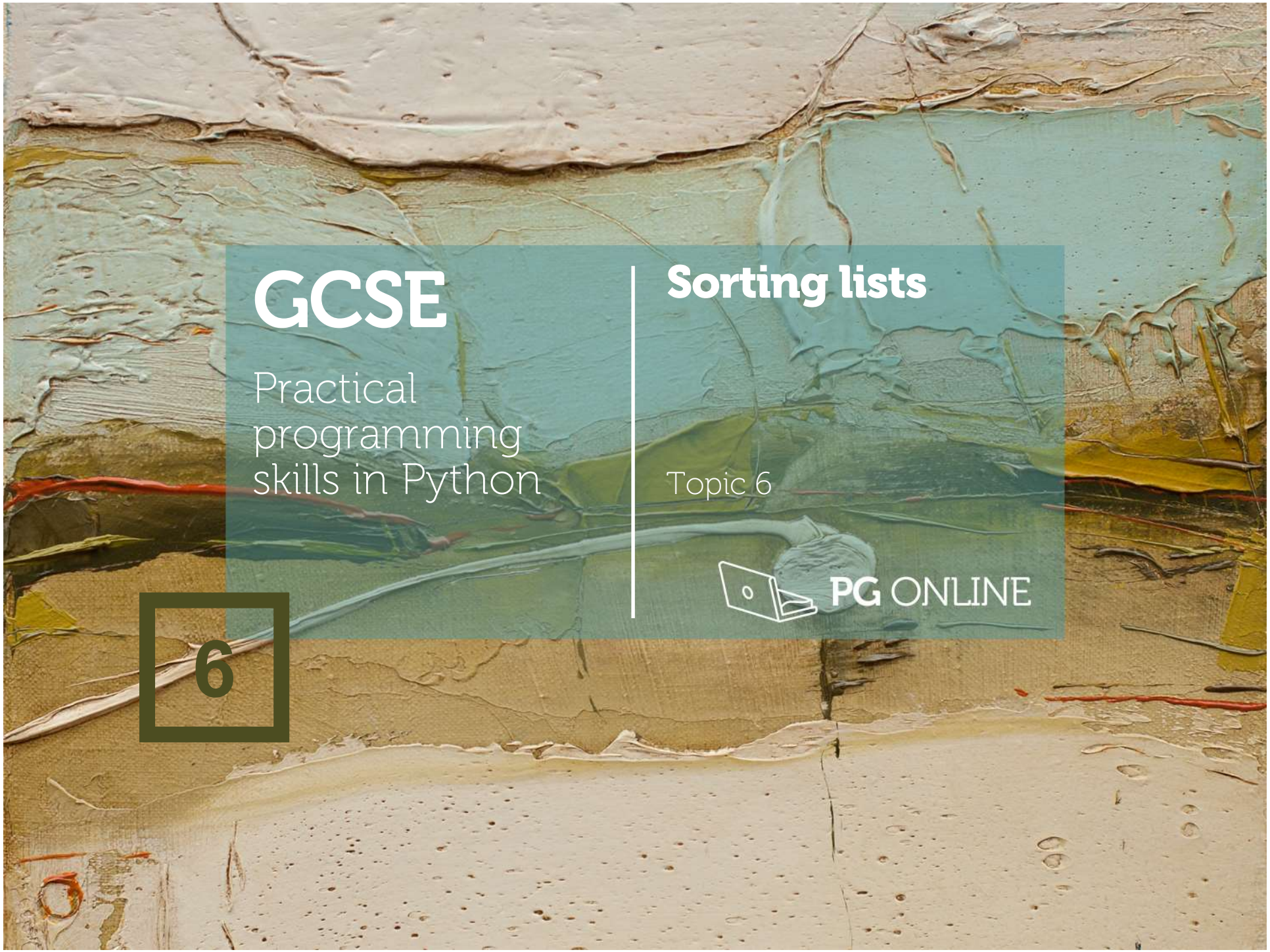
GCSE
Practical programming skills in Python
Sorting lists
Topic 6
PG ONLINE
6

Objectives

- Understand why you might want to sort a list
- Know how to sort a list using Python
- Be able to use other functions with lists

Starter

Put these famous people in order by:

- Product Name (Ascending order)
- Net Worth (Descending order)

Person	Product	Net Worth (est. 2017)
Sergey Brin	Google	$43 Billion
Mike Krieger	Instagram	$300 Million
Gabe Newell	Valve / Steam	$4.1 Billion
Markus Pearson	Minecraft	$1.4 Billion
Mark Zuckerberg	Facebook	$63 Billion

Starter

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Starter

Why is sorting a useful programming skill?

- It helps us identify the most successful people quickly
- It allows us to put items into a logical order
- It is especially useful with large sets of data

Sorting simple lists

- Sorting data in a list can be very easy to do in Python – especially if it is a simple list

Sorting simple lists

- Try this code:

```
values= [17,12,5,9,16,23,4,31,13]

sortedValues = sorted(values)

print(values)

print(sortedValues)
```

Reversing the sort order

- By default, Python will sort in ascending order
- Try the following lines of code to change this:

```
values= [17,12,5,9,16,23,4,31,13]

sortedValues = sorted(values,reverse=True)

print(values)

print(sortedValues)
```

Sorting simple lists

- You can sort almost any kind of data:

```
names= ["Luke","Leia","Yoda","Han"]

sortedNames = sorted(names)

print(names)

print(sortedNames)
```

Sorting simple lists

- But you can't sort lists with mixed data types:

```
values= [17,12,"Luke",31,13]

sortedValues = sorted(values)

print(values)

print(sortedValues)
```

Sorting simple lists

- Complete the challenges in **Task 1** of **Worksheet 6**

Other functions

- As well as sorting, you can use functions, a bit like you can with a spreadsheet:

```
values = [17,12,5,9,16,23,4,31,13]

largest = max(values)

smallest = min(values)

print(largest,smallest)
```

Finding a list average

- Working out the average is a little more tricky:

```
values = [17,12,5,9,16,23,4,31,13]
size = len(values) # Find size of list
total = sum(values) # Add up all values
meanAverage = total / size
print(meanAverage)
```

Other functions

- Complete the challenges in **Task 2** of **Worksheet 6**

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