

# Stream Member Functions and Formatting Solutions

- What does setw() do?

It puts extra spaces into an output field to make it up to the required width

- Describe how to use setw()

Push it onto the output stream. Pass the required width as the argument to setw()

- Write a simple program which produces the following formatted output

```
Penguins 5  
Polar Bears 2
```

- What is meant by "justification" in the context of text formatting?

It describes where the extra spaces are added. Left-justification means the text is at the left of the output field, with the spaces added after the data (and vice versa for right-justification)

- How can the justification be changed in C++?

The left manipulator makes the output left justified. The right manipulator (which is the default) makes the output right justified

- What effect does applying the setfill manipulator have on the output?

It changes the padding character from a space to the argument of setfill

- Write a simple program which produces the following formatted output

```
#####Penguins 5
```

```
###Polar Bears 2
```

- Write a program that uses manipulators to display the following output. The names should be lined up on the left and the numbers lined up on the right:

Lions                      4

Chimpanzees    23

Wildebeest      247