Lesson Topic:
Loops using `label` and `goto` statements

Lesson Sequence:
6/8

Lesson Link:
https://csinschools.io/intro/6

Lesson Overview:
The idea of repeating sections of code is introduced.

To get students thinking, you might consider having students in pairs or groups think about examples where repeating code is useful. A good typical answer is code that "polls" for something (eg. checking if you're got new email) or code that "counts" (eg. a timer or a stopwatch).

The secret PIN activity shows that a loop is needed to repeatedly ask for a PIN number until the user gets it right. The flowchart drives home this point.

Loops are then introduced via `goto`. It is used as a scaffolding tool and will be done away with in our Year 8 programme. We know that most programmers hate `goto`. However, the idea of having a "bookmark" in code is much easier for students to understand than iteration with `while` or `for` at this introductory stage. Experienced programmers sometimes use `goto` to build state machines, and the text adventure that students write in later lessons is essentially a state machine. Just go with us for now!

The Virtual Pet menu and the Solar System exercise at the end of the material requires that the students put this into action.

Learning notes:
- Don't worry… proper `while` loops will be taught in [Intermediate Coding](#)!
- `goto` is only used as a scaffolding device
- `goto` in Python is only supported via the `csinsc` module (it uses Python's code tracing support to reset the line counter)

Logistics notes:
- Slides ideally to be presented to the class via a projector or screen, etc.
- Students can also follow along using the slides on their devices / computer
- Slides contain all the links to activities and worksheets which students need to click on

Suggested Breakdown for Topics and Timings:

Time (mins)	Topic covered	Student Activities	Resources
3	Roll and settle class		
10	Recap		[Slides](#) | [MS](#)
2	Learning objectives		[Slides](#) | [MS](#)
5	Secret PIN crack	Watch demo	[Slides](#) | [MS](#) [Demo - PIN Code!](#)
20	Looping and `goto`		[Slides](#) | [MS](#)
10		Activity - Easiest Game in the World!	[Activity - 06.01](#)
10		Number driven menu example	[Slides](#) | [MS](#)
10		Activity - Virtual Pet Menu!	[Activity - 06.02](#)
15		Activity - Your Solar System!	[Activity - 06.03](#) [Video guide](#)
5	Summarisation and reflection		[Slides](#) | [MS](#)

License Information

These CS in Schools lessons plans, worksheets, and other materials were created by the CS in Schools Team. They are licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.