Lesson 1: Programming a screen turtle

Year 4 – Programming – Repetition in shapes

Lesson 1: Programming a screen turtle

To identify that accuracy in programming is important

- I can program a computer by typing commands

- I can explain the effect of changing a value of a command

- I can create a code snippet for a given purpose
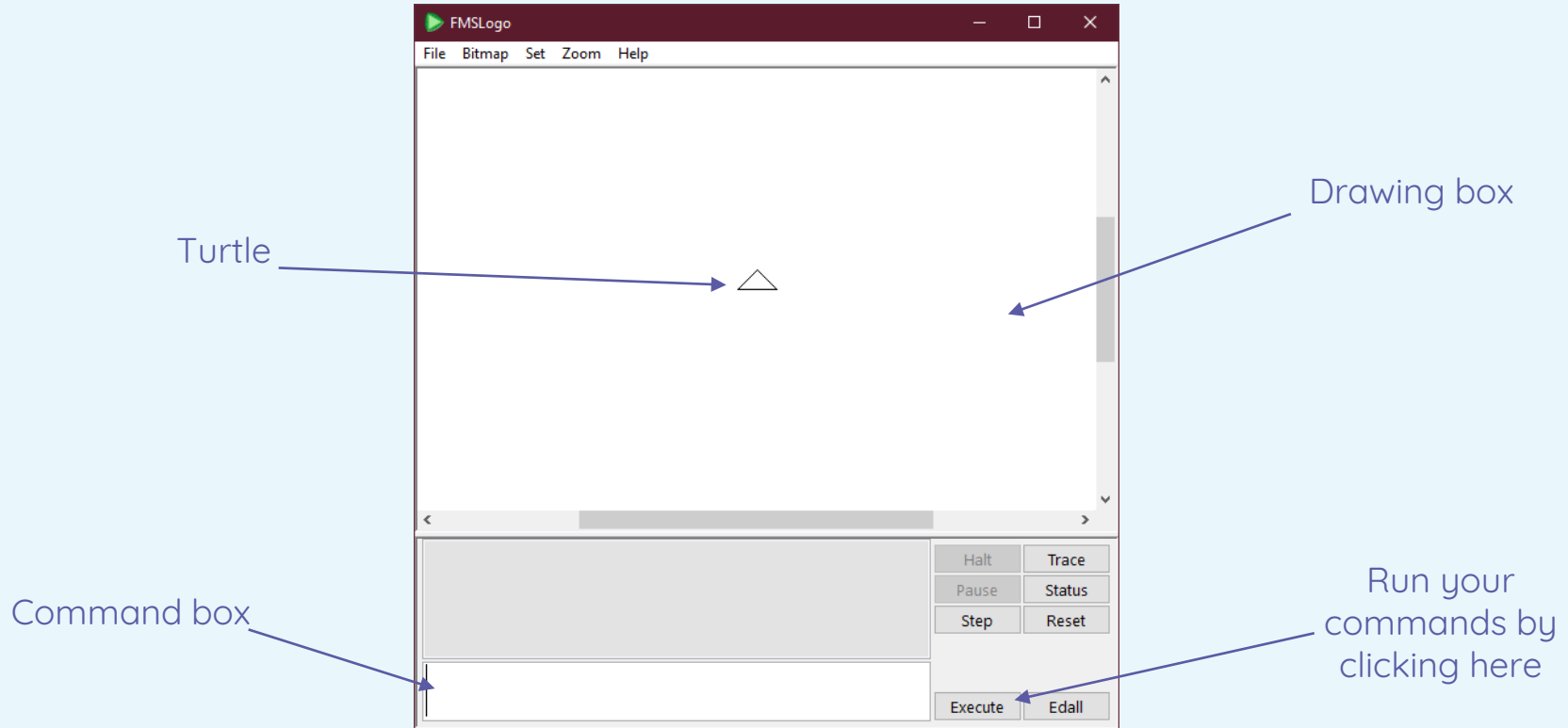
What went wrong?

Magda and Faheem wanted to go to the shop, but they ended up at the ship.

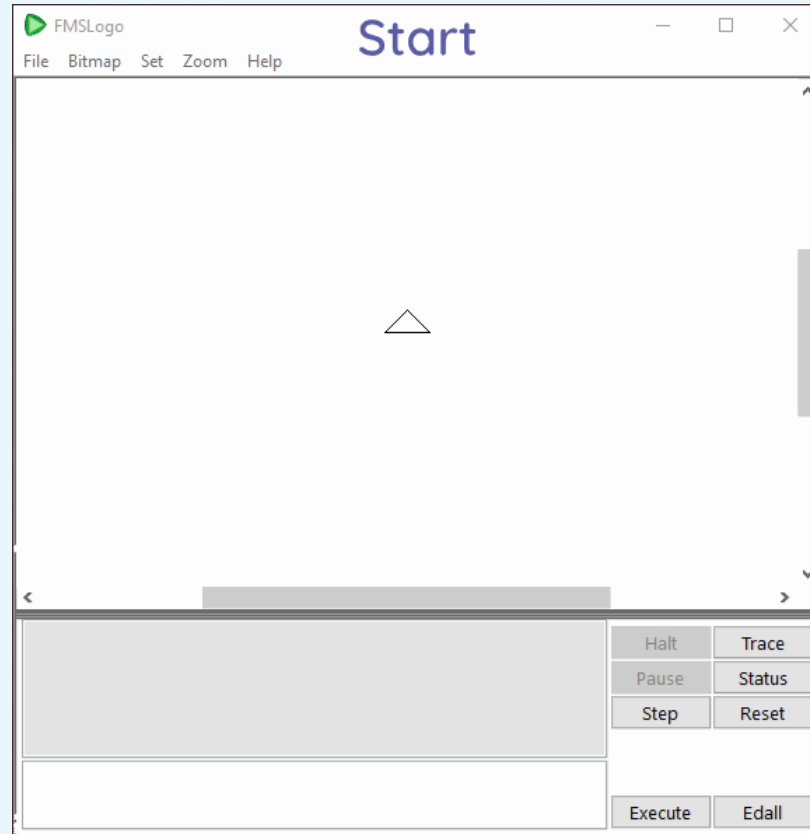Magda asked her mum for directions and they followed them exactly.

Magda checks her message. It said ship, not shop! It's important to be accurate.
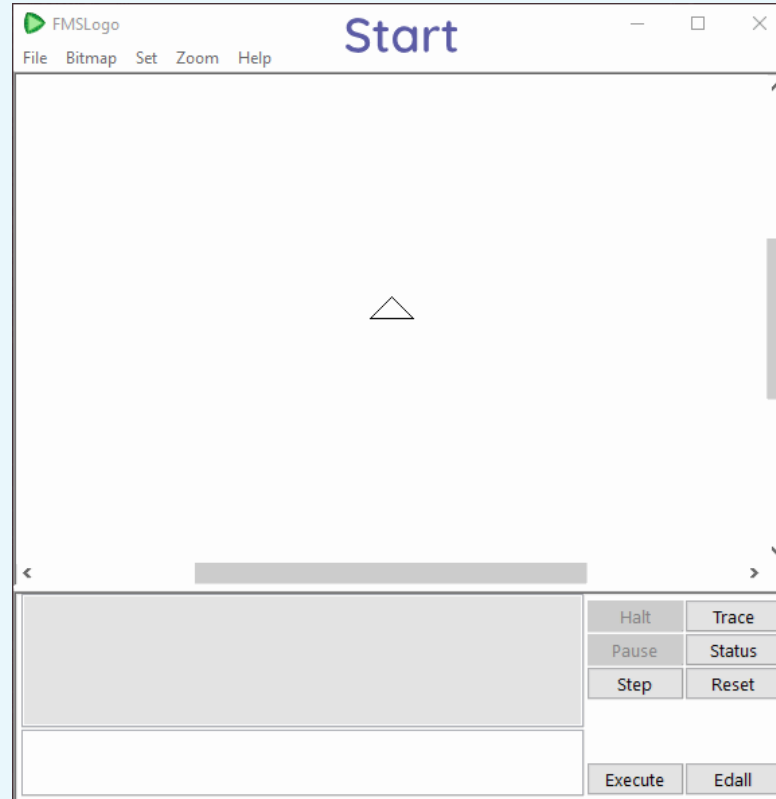
The Logo interface

Drawing box

Turtle

Command box

Run your commands by clicking here

Commands for forwards and backwards

Commands for turning left and right

Basic commands in Logo

`FD 100` — Forward 100 (moves forward 100 steps)

`BK 100` — Back 100 (moves back 100 steps)

`RT 90` — Right 90 (turns right 90°)

`LT 90` — Left 90 (turns left 90°)

`CS` — Clear screen

A number of logo commands need to have a number added after a space, eg
Command_number
FD 100
The number indicates how far to move or turn.

Basic commands in Logo — FD, BK, LT, and RT

- What happens if you type…
  - … `FD 100`?
  - … `FD 200`?
  - … `BK 50`?
  - … `RT 90`?
  - … `RT 180`?
  - … `CS`?
- How many Logo steps does it take to get to the top of your screen exactly?
- What happens if the turtle goes off the top of your Logo screen?
- How many Logo steps does it take to get across your screen exactly?

Programming longer sequences
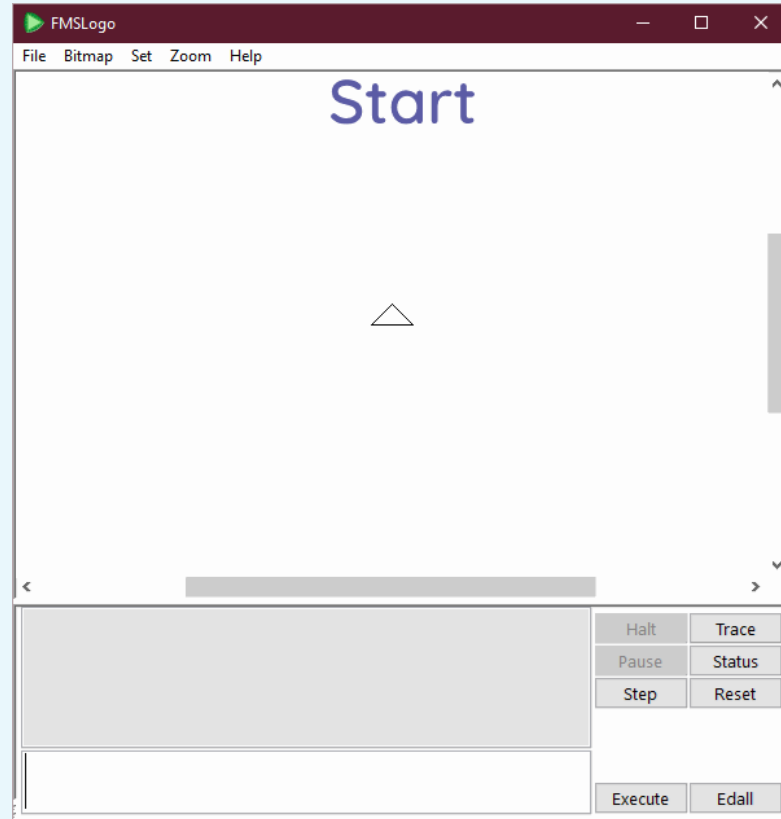
Using PU and PD
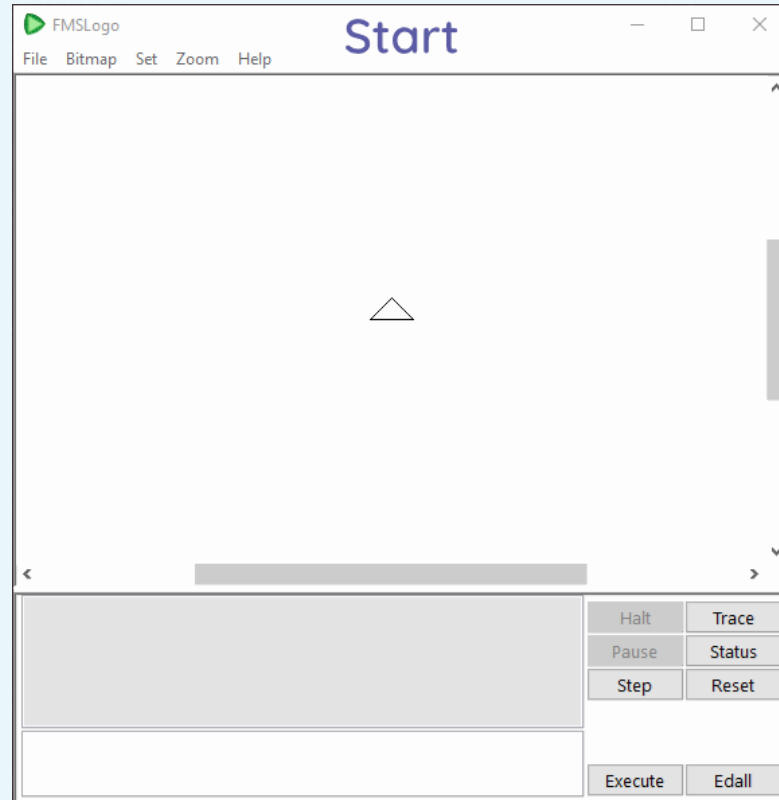
Programming longer sequences

- What happens if you type `FD 100 RT 90 FD 100` all on one line?
- What happens if you change the number of steps (marked with an X below)?

`FD XX RT 90 FD XX`

- What happens if you make the number of degrees bigger (marked with an X below)?

`FD 100 RT XX FD 100`

- What do you think these two new commands mean?

`PU`   `PD`

Creating a code snippet

Use your whiteboards to draw these commands, starting in the top left of your board:

FD 100

RT 90

FD 200

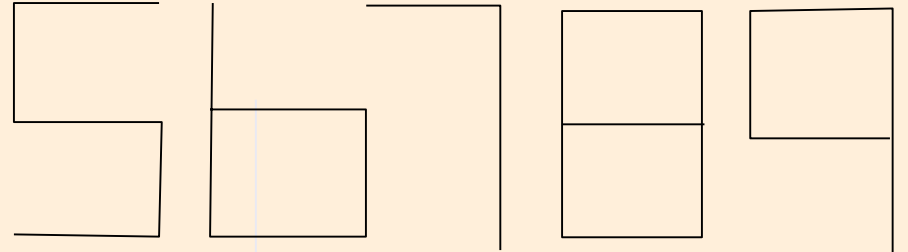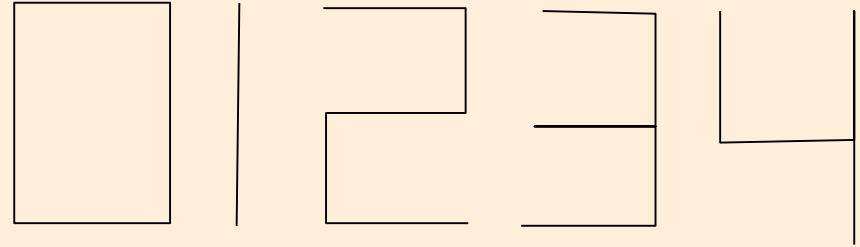Which digit have you drawn?

Start here

Creating a code snippet

Choose another digit and write down the commands needed to create it.

Use Logo to program the computer to draw the digit by following your commands.

Were they correct?
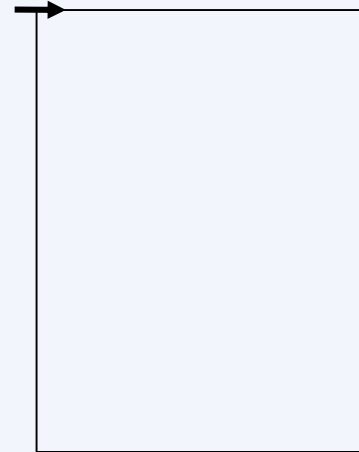
Programming a screen turtle

Put these commands in the correct order to create a 0, starting at the arrow.

FD 200   RT 90

FD 200   RT 90

FD 100   RT 90

FD 100   RT 90

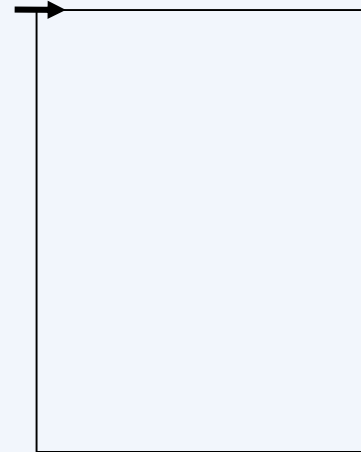How did you work it out?

Programming a screen turtle

Correct answer:

```
FD 100 RT 90
FD 200 RT 90
FD 100 RT 90
FD 200 RT 90
```

How confident are you? (1–3)

- I can program a computer by typing commands

- I can explain the effect of changing a value of a command

- I can create a code snippet for a given purpose

3 – Very confident

2 – Unsure

1 – Not confident

Next lesson

In this lesson, you…

Learnt the basic Logo commands and programmed the computer to draw lines of different lengths and with turns of different degrees

Read code and predicted which digit would be drawn, and programmed the computer to draw your own digits

Next lesson, you will…

Create and test an algorithm for a program that draws your initials