

Computing

Lesson 5: Flowcharts

Programming Part 1: Sequence

Rebecca Franks



Use a flowchart to write a program



Introduction

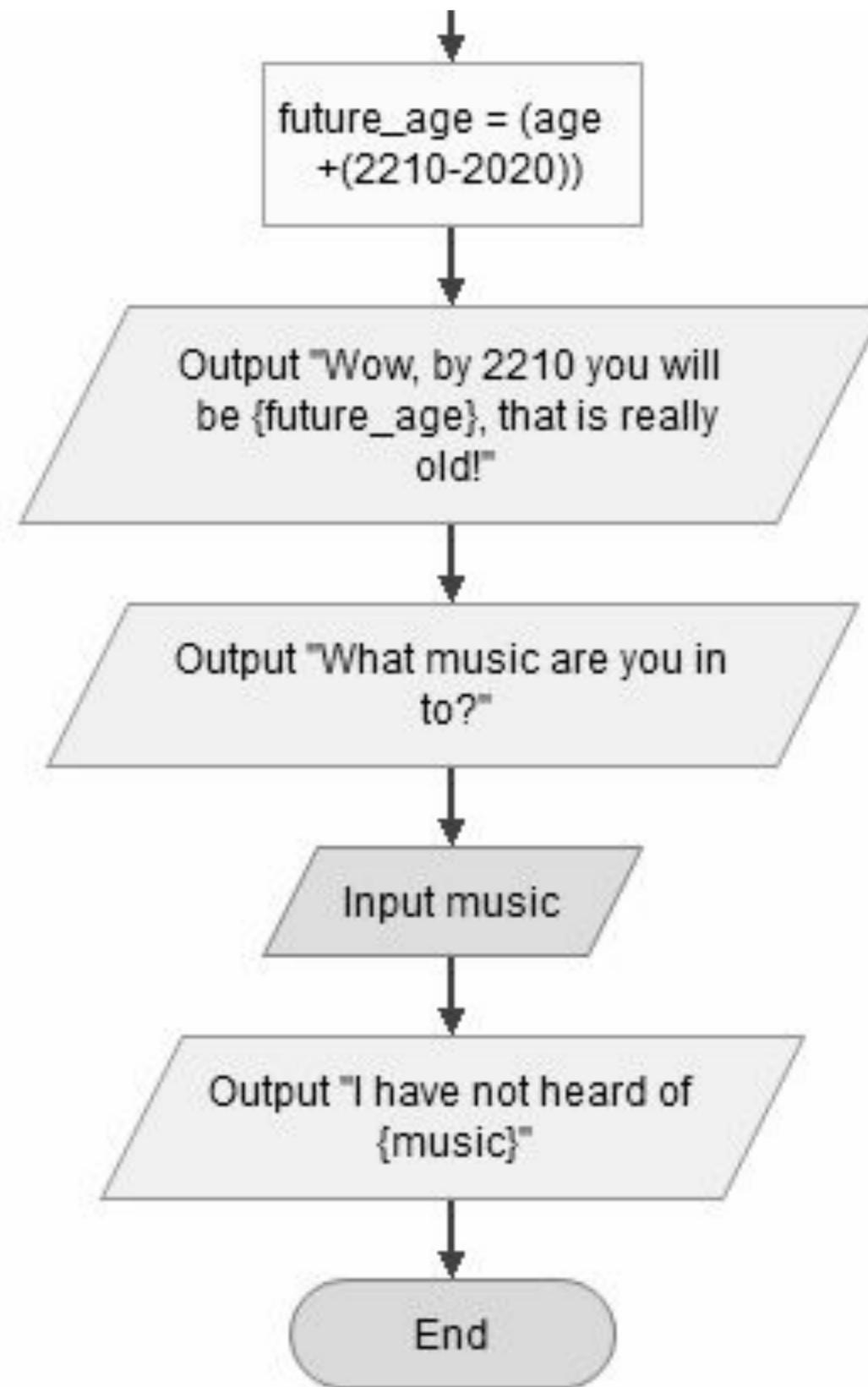
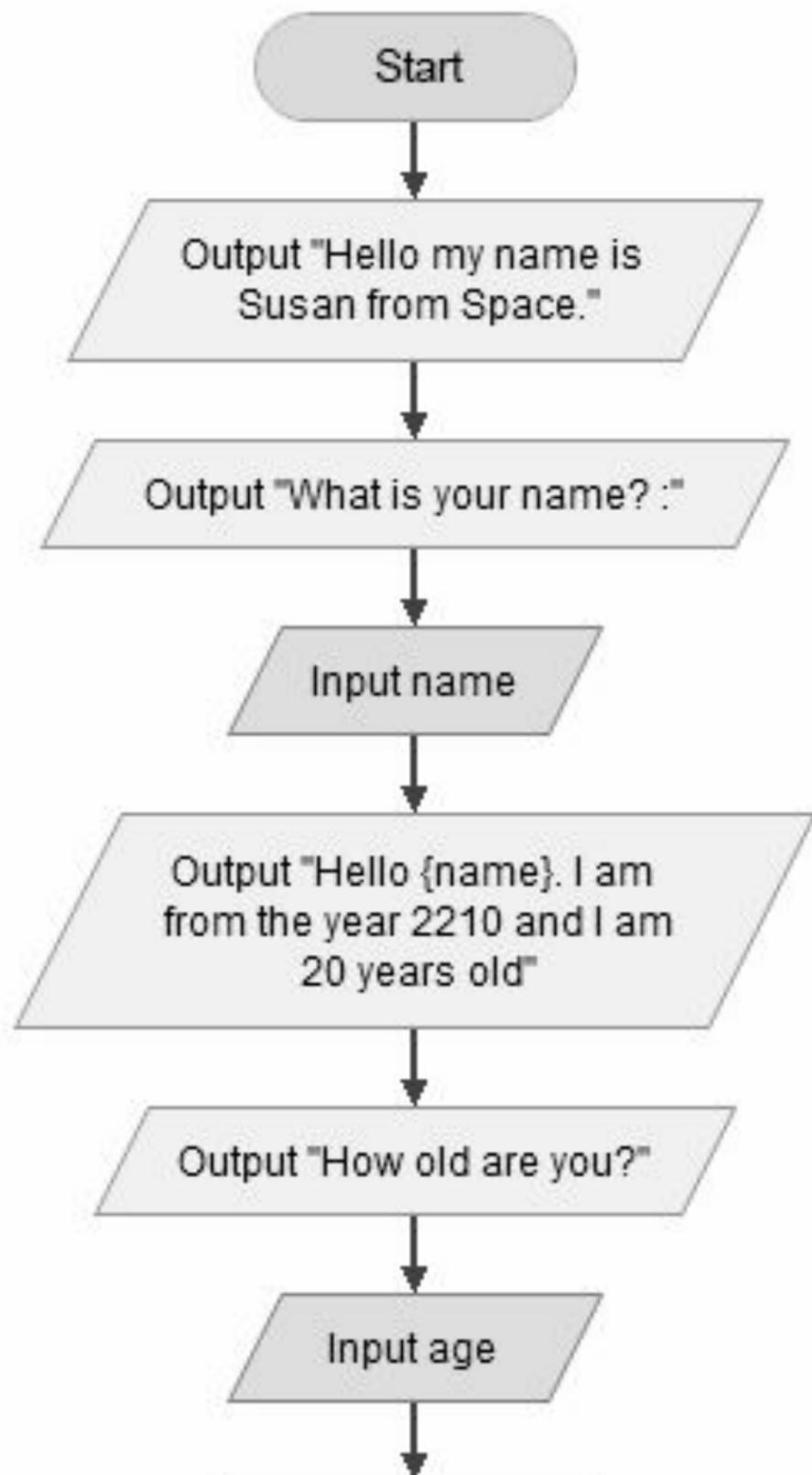
The following activity has been designed to allow you to practise using a flowchart to write a program. The flowchart is for a program for a chatbot from the future who is having a conversation with the user.

The following slide shows you the flowchart.

Note: The flowchart has been split into two to enable you to view it on your screen.

Read the left side of the flowchart first.





Task: Translate the program

1. Use the flowchart to translate the chatbot program into Python code.
2. Run and test the program. Use the syntax checklist below to help you fix any syntax errors that you might have.

Syntax checklist:

- Missing brackets
- Capital letter used for print
- Extra indents
- Missing indents
- Missing speech marks around text
- Missing the f for f-string e.g. `print(f"Hello {name}")`
- Spelling a variable incorrectly
- Missing the `int()` around an integer input e.g. `age = int(input())`



Design a flowchart



Introduction

This activity has been created to allow you to practise designing your own flowchart.

On the following slides are the instructions for a mind-reading maths trick, which can be carried out in the non-digital world or by a computer.

You must decide on the correct sequence for this maths trick, and think about any variables, inputs, and outputs that you might need.

Read the following slides carefully and then create your flowchart.



The mind reading trick, always 3

The **basic script** for the mind-reading trick:

- Pick a number between 1 and 10
- Multiply the number by 2
- Multiply the new number by 5
- Divide the current number by the original number
- Subtract 7 from the current number
- Your current number is 3

Source: Task derived from mind-reading trick at wikiHow



The mind reading trick, always 3

Adding **theatrics** to your trick (making it a performance!)

- Your program needs to be exciting for the player. Think about extra things that can be added to your program to improve it. Here are some ideas:
- Introduce yourself and ask the player their name. For example, “I am the great magician Mystical Meredith. What is your name?”
- Reply with “Welcome {name}, I am going to perform a mind trick on you”
- Give your player some thinking time by requiring the Enter key to be pressed before revealing Mystical Meredith’s guess
- Add some extra script before revealing the number to make it appear that Mystical Meredith is thinking

Source: Task derived from mind-reading trick at wikiHow



The mind reading trick, always 3

Using **calculations** to work out the answer

Although the answer to this trick is always 3, your program should calculate the answer based on the input given by the player at the start of the trick.

The answer should be revealed based on your calculation.

Source: Task derived from mind-reading trick at wikiHow



Checklist – Your flowchart for the program should:

- Introduce Mystical Meredith
- Ask for the player's name
- Recite the player name back to the player
- Ask for a number between 1 and 10
- Reveal the script (above) to the player
- Calculate the final number based on the script
- Reveal the 'guess' to the user, based on the calculation
- Include 'theatrics' to make it exciting

Source: Task derived from mind-reading trick at wikiHow

