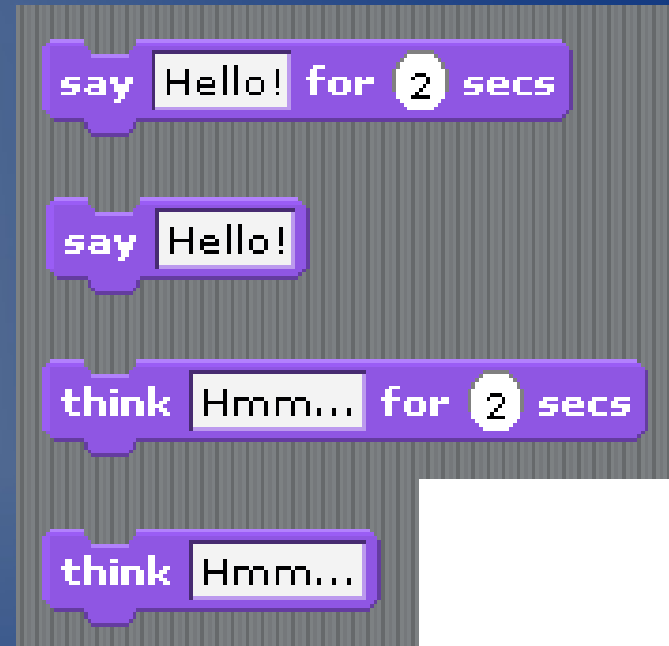


Introduction to Scratch Programming

Output in Scratch

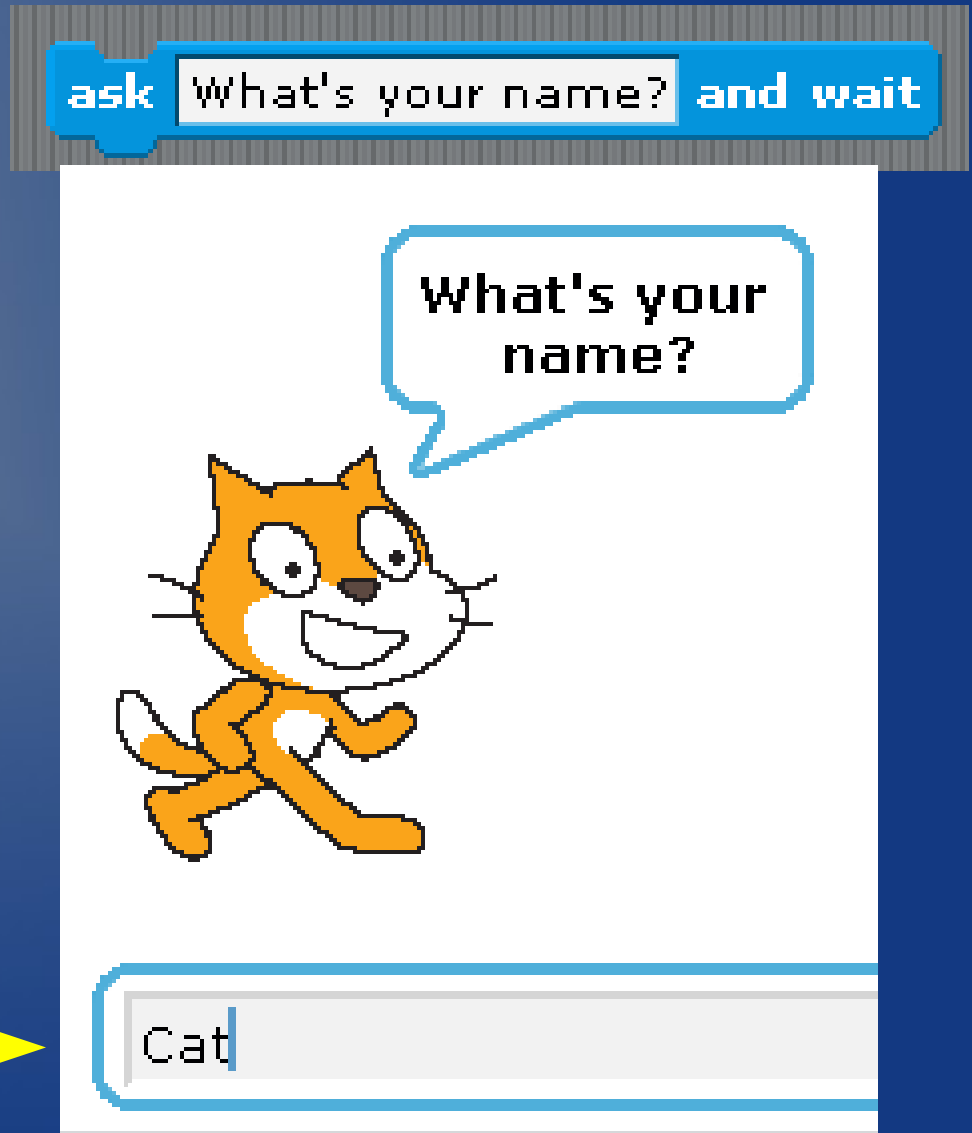
- there are only a few options for communicating with the user using text or numbers



Input in Scratch

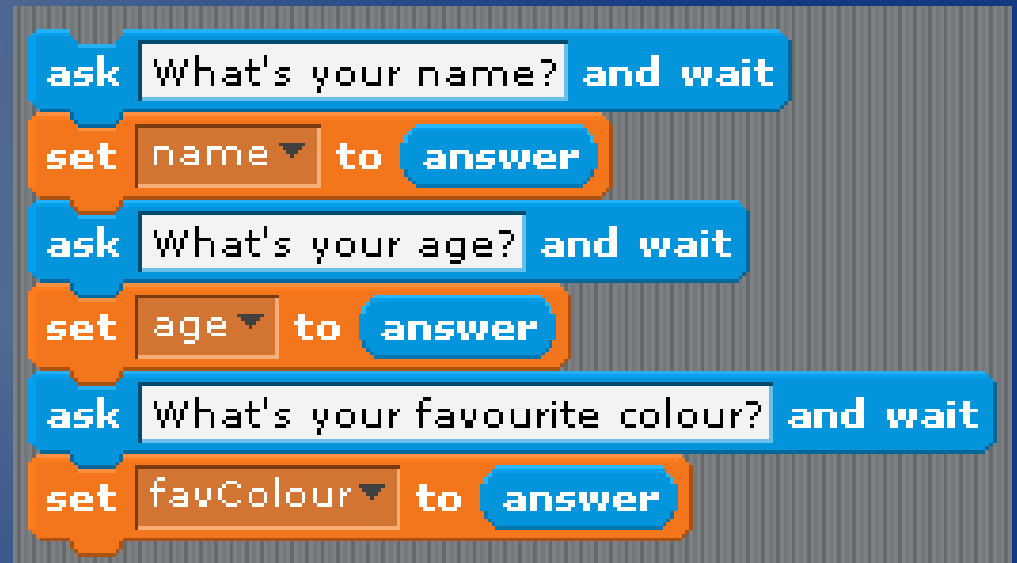
- many types of input (mouse, keyboard, microphone)
- we focus on text input from keyboard
- ask the user a question and wait for their answer

user types response here →



Variables in Scratch

- by default, all user responses are saved in the 'answer' variable
- treat this as temporary storage
- create your own variables to store answers to questions



Creating a Variable in Scratch

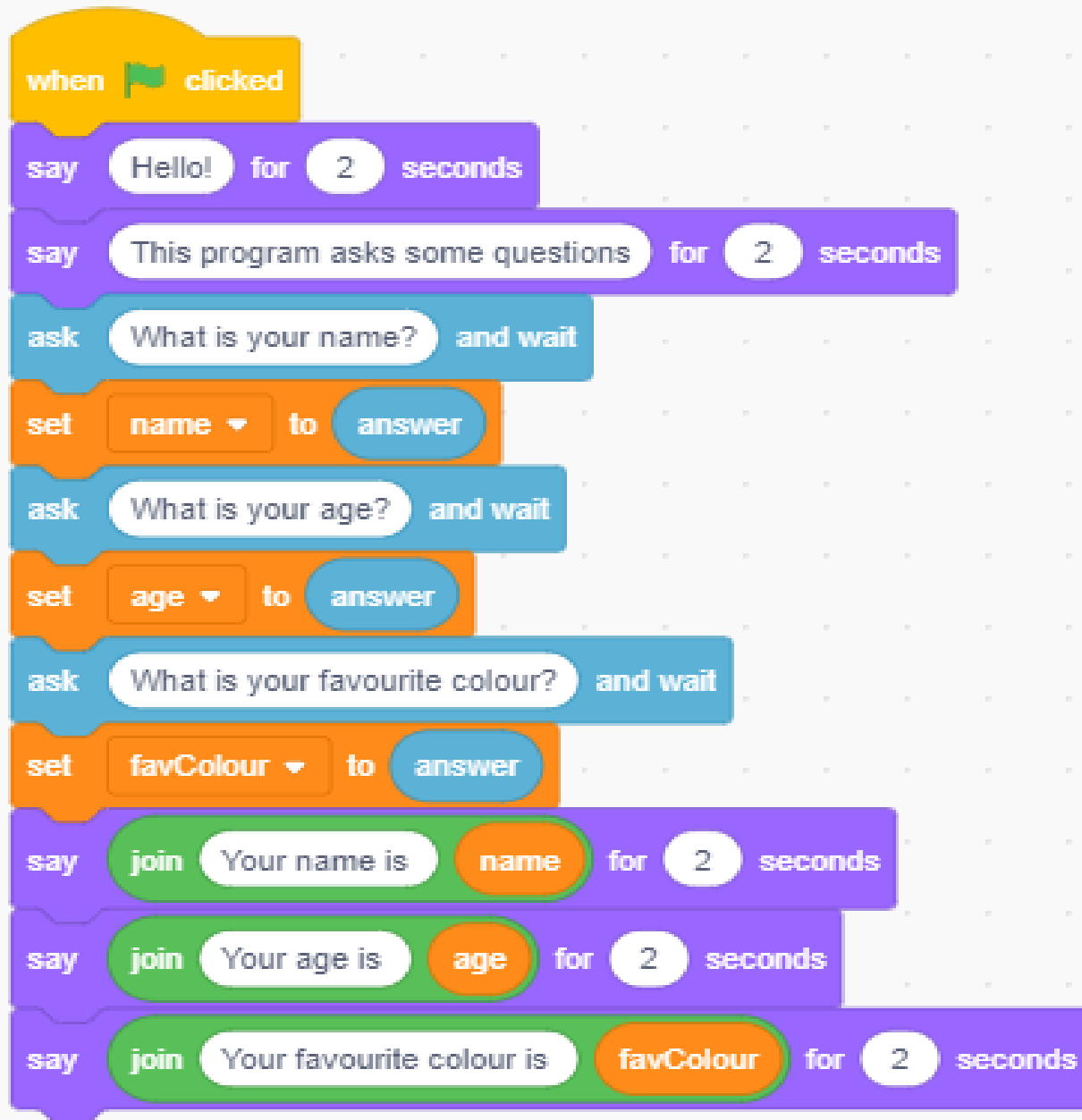
- make a variable for each value you input or calculate
- try to use good names for variables
- short but meaningful



Creating Variable Names

- a variable name should make it fairly clear what the variable is for
- start with a lowercase letter
- for multiple words, use uppercase to start other words
- avoid including words like 'a', 'the', 'of, etc...
- if variables names are getting too long, contract the word (removing some letters, usually vowels, can work)

Input & Output in Scratch



```
when green flag clicked
  say Hello! for 2 seconds
  say This program asks some questions for 2 seconds
  ask What is your name? and wait
  set name to answer
  ask What is your age? and wait
  set age to answer
  ask What is your favourite colour? and wait
  set favColour to answer
  say join Your name is name for 2 seconds
  say join Your age is age for 2 seconds
  say join Your favourite colour is favColour for 2 seconds
```

The image shows a Scratch script on a grid background. It starts with a yellow 'when green flag clicked' block. This is followed by three purple 'say' blocks: 'Hello!' for 2 seconds, 'This program asks some questions' for 2 seconds, and three blue 'ask' blocks: 'What is your name?' and wait, 'What is your age?' and wait, and 'What is your favourite colour?' and wait. Each 'ask' block is followed by an orange 'set' block: 'set name to answer', 'set age to answer', and 'set favColour to answer'. Finally, there are three purple 'say' blocks using the 'join' block: 'say join Your name is name for 2 seconds', 'say join Your age is age for 2 seconds', and 'say join Your favourite colour is favColour for 2 seconds'.

The 'join' Command

- a bit more advanced, but so useful in making 'nice' output
- lets you combine text and numbers with variables
- don't forget to include spaces where necessary!
- it is also possible to join multiple 'join' commands together
- beware overly long lines!

