openSAP Get Coding with Snap!
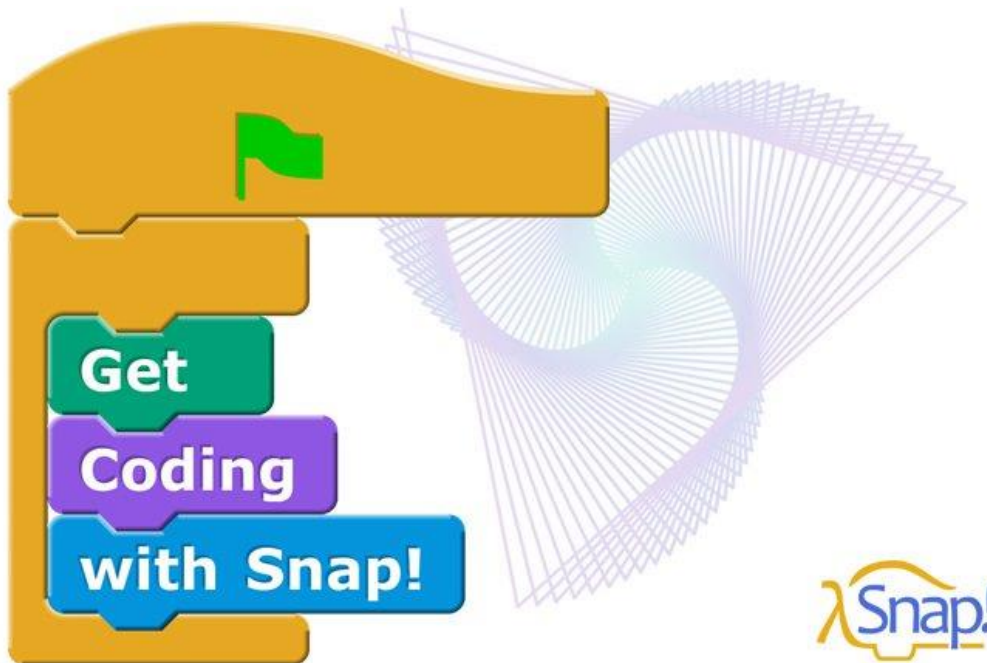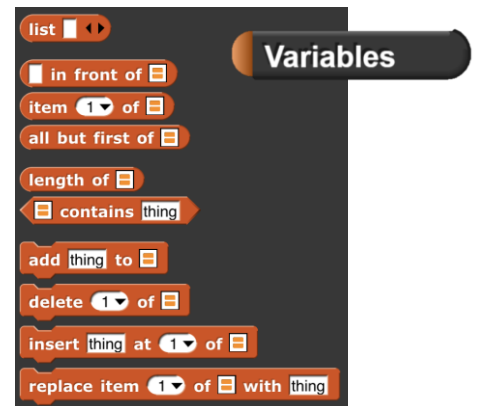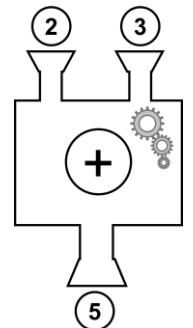## Exercises Week 2 Unit 2

WHAT YOU HAVE LEARNED THIS WEEK

This unit was all about lists and functions.

A list is a data type that represents a countable number of values, where the same value may occur more than once. Lists are flexible, meaning you can delete and add elements as you want. Lists can contain letters, numbers or even other lists or blocks. In Snap! you can find all the red blocks for list-operations in the "Variables" category.
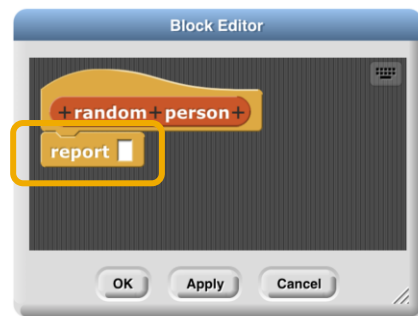
In this unit you also learned how to make your own reporter or function, one of the oval-shaped blocks that reports back a value. A function in math is a process with 0 or more inputs and exactly one output. The same input always yields the same output when the function is applied (to learn more about functions, check out the "Beauty and Joy of Computing" lecture by Dan Garcia)
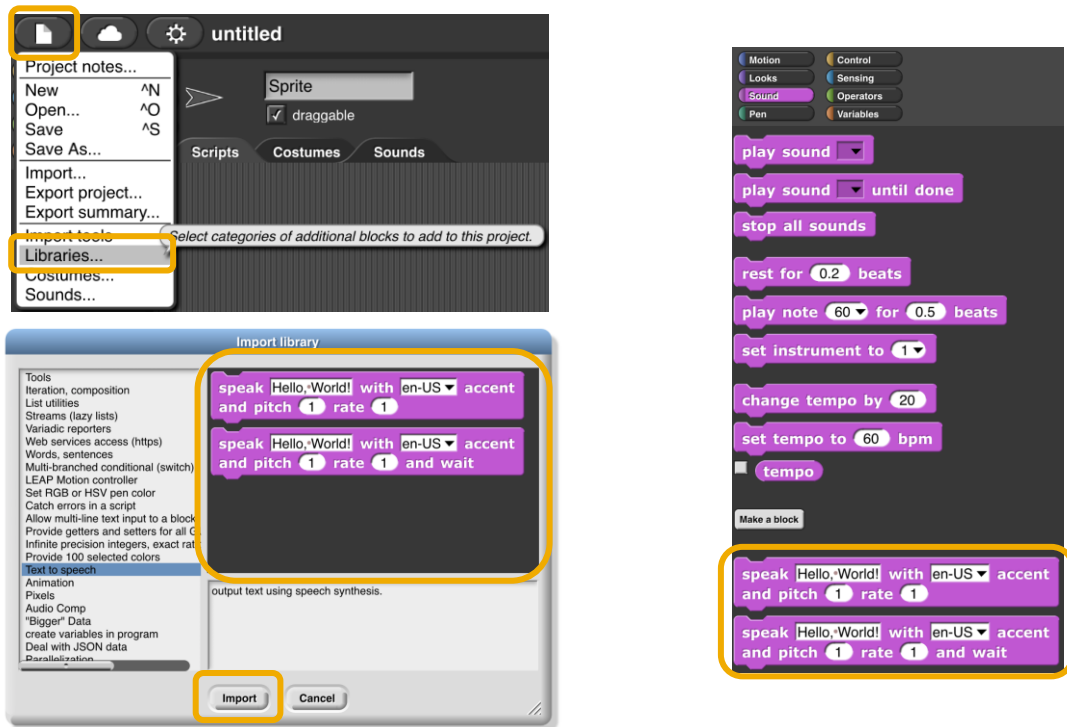
In computer science, a function is defined in a broader sense. It is a part of a program (in Snap! a block) that performs a specific task and returns a value.
To create a reporter, you just select "Reporter" in the "Make a block"-dialogue box. Your "Block Editor" will then automatically add a "report"-block to your block definition.

Additionally, you got to know how to import thematic libraries with additional blocks. Go to the file-menu and select "Libraries…" to open a dialogue box with all block extensions. Choose the library you want and click "Import" to add the blocks of the corresponding library at the bottom of the palette. In the upper right part of the dialogue box is a preview which shows all blocks a selected library contains.

Useful Blocks

With this block a list can be created, in which numbers, text or even other lists or blocks can be stored. The number of elements in the list can be in- or decreased using the small black arrowheads at the right side of the block.	list
This block reports specific items of a list. It takes a number as input to access a certain element of the list. You can also choose "random" in the first input slot's dropdown menu to get any item from the list in the second input slot.	item 1 of
With this block words or letters can be connected to a longer text. Take care, that you don't forget the spaces if you want to join different words to a sentence.	join hello world
This block is essential for custom reporters, because it reports back the value in its input slot in a small speech bubble. When a reporter block uses it inside its block definition it reports the value given; any further blocks in the definition are not evaluated.	report

This block can be imported with the "Text to speech" library. It uses the built-in text to speech function of the browser to literally let the computer say the text in the first input slot. With the other inputs of the block accent, pitch level and speed of the text can be adjusted.

YOUR TURN

- Make another reporter that picks random statements which make your sentences more "gossipy ", like:
    - "Wow, I got news. "
    - "Did you already know that "
    - "I heard a crazy story."
  Include that into your "gossip" reporter as well.

- Write a fortuneteller program. Let the user ask a question to which your fortuneteller will give an answer that he or she randomly picks from a list of answers. Fortunetellers are not always very clear, so feel free to include some nebulous statements like „I see a bright future ahead of you ".

  To let a user ask questions, you can use the following block:

Coding Samples

Any software coding or code lines/strings ("Code") provided in this documentation are only examples and are not intended for use in a production system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules for certain SAP coding. SAP does not warrant the correctness or completeness of the Code provided herein and SAP shall not be liable for errors or damages cause by use of the Code, except where such damages were caused by SAP with intent or with gross negligence.

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