Living Space

Scratch Project: Code Explained

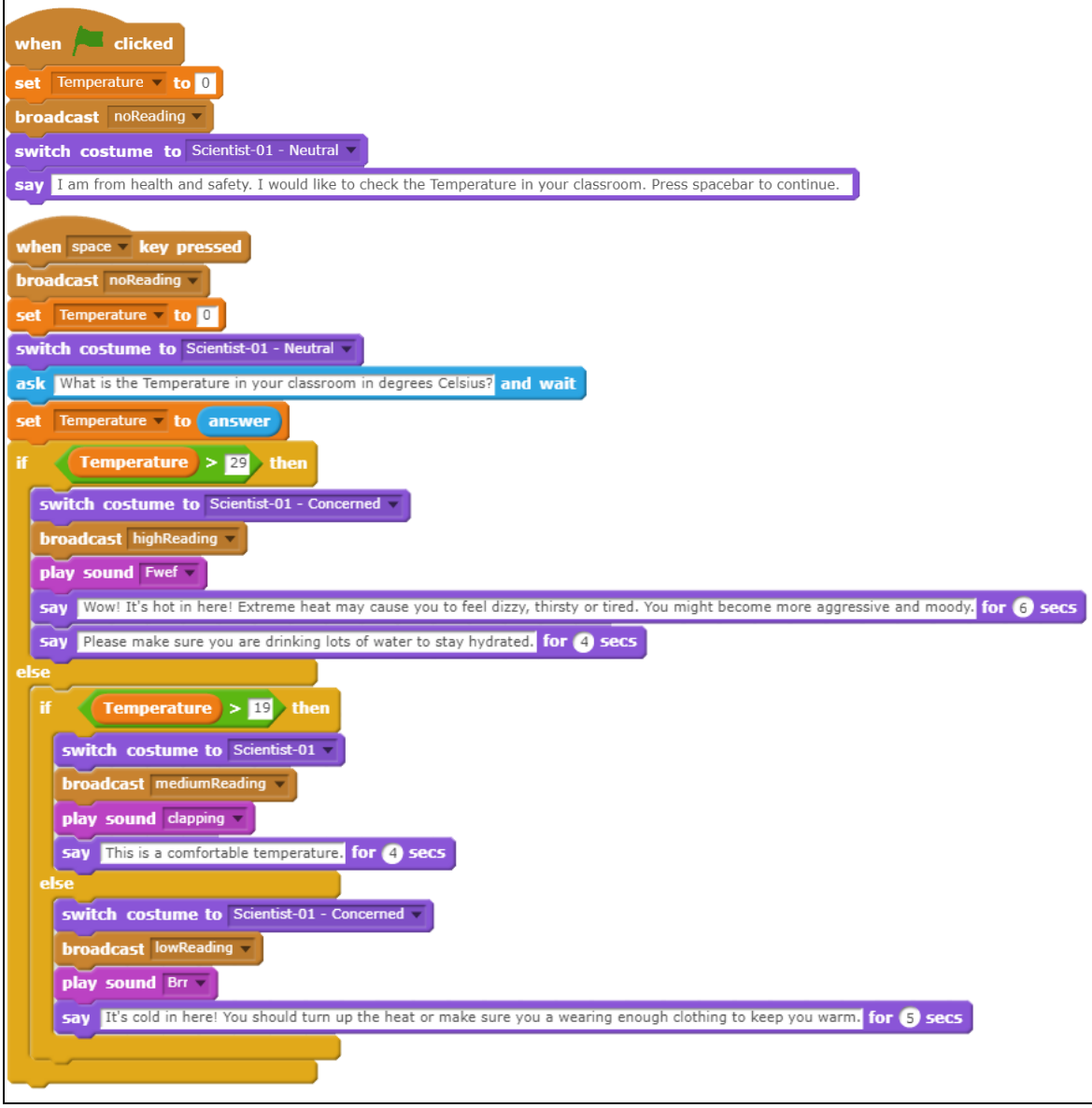
Action Project
Backgrounder

Link to view completed Scratch Program: https://scratch.mit.edu/projects/236845556/#editor

Inspector Sprite

Inspector **Neutral**	Inspector **Concerned**	Inspector **Happy**

Code Overview



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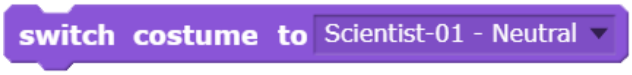
Code Explained

When the **Green Flag** is clicked

When the **Green Flag** is clicked, the program will begin and the following will happen:

The **Temperature Variable** (created under the **Data** tab in the **Scripts** area) is given a starting value of zero. *For more about Variables, see the glossary.*

The message **noReading** is transmitted (broadcast) to the other **Sprites.** This will cause the **Indicator Sprite** to change its **Costume** (see the Indicator Sprite code below for more information).



The Inspector Sprite's costume changes (switches) to the **Neutral** pose.

The **Inspector Sprite** says the text in the white box. In this instance, it provides context and instructions for the user.

When the **space key** is pressed

*This is an example of an **Event**. For more about **Events**, see the glossary.* When the **space key** is pressed, the following will happen (the first three blocks are for "resetting" the program):

The message **noReading** is transmitted (broadcast) to the other **Sprites.** This will cause the **Indicator Sprite** to change its **Costume** (see the Indicator Sprite code below for more information).

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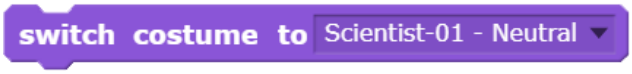
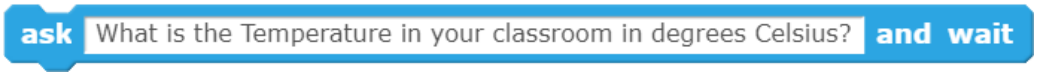
The **Temperature Variable** (created under the **Data** tab in the **Scripts** area) is given a starting value of zero.



The **Inspector Sprite**'s costume is changed (switched) to the neutral pose.



The **Inspector Sprite** asks the question in the white box and waits until the user types a response in the text field and presses enter (the **Ask** block is found under **Sensing** tab in the **Scripts** area).

The value entered in the text field by the user is stored in the **Variable** called **Temperature**.

If-Then-Else Statements

The **If-Then-Else** block is a decision structure. It is found under the **Control** tab in the **Scripts** area.

The If-Then-Else block is an example of a Conditional Statement. For more about Conditionals, see the glossary.

The green block is a **Comparison Operator** and can be found under the **Operators** tab in the **Scripts** area. *For more about **Operators**, see the glossary.*

When an operator block is placed in an **If-Then-Else** block, it creates a conditional statement.

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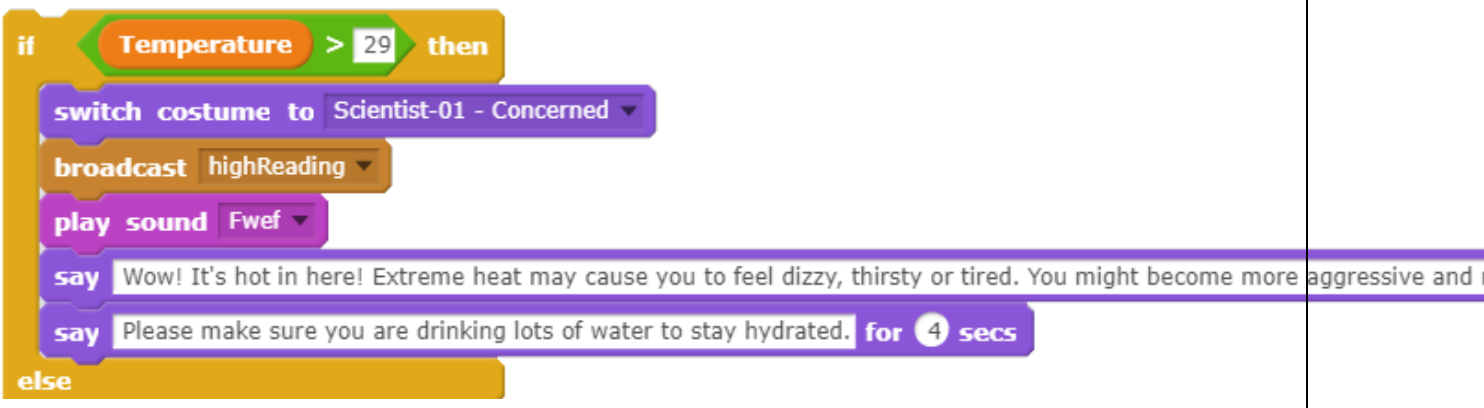
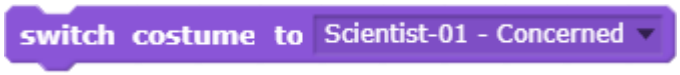
If True Then…



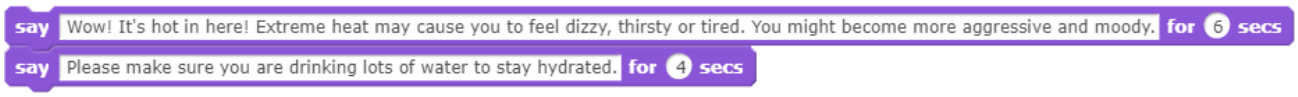
In this instance, the condition compares the **Temperature Variable** (set by the input of the user) to the number in the white box of the **Comparison Operator**. In this instance, if the **Temperature Variable** is greater than 29, the following things will happen:



The Inspector Sprite's costume is changed (switched) to the **Concerned** pose.

The message **highReading** is transmitted (broadcast) to the other **Sprites.** This will cause the **Indicator Sprite** to change its **Costume** (see the Indicator Sprite code below for more information).

A sound is played. In this instance, the sound played is the **Fwef** sound.



The **Inspector Sprite** will **Say** the text in the white boxes. The text will display in a speech bubble for the number of seconds entered in the white circle. The text in the **Say** block is an example of a **String** - which is one type of data. *For more information about **Data**, see the glossary.*

The rest of the code under the **Else Statement** is skipped.

Else…If…Then

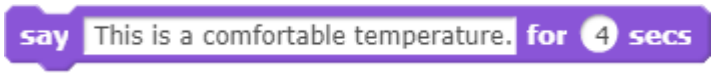
If the above **If Statement** is **False** (i.e. the **Temperature Variable** is less than 29), the blocks under the **Else Statement** will activate.

In this case, there is another **If Statement** nested in the **Else Statement**. Like before, the condition compares the **Temperature Variable** (set by the input of the user) to the number in the white box of the **Comparison Operator**. If the **Temperature Variable** is greater than 19, the following things will happen:

The Inspector Sprite's costume is changed (switched) to the **Happy** pose.

The message **mediumReading** is transmitted (broadcast) to the other **Sprites.** This will cause the **Indicator Sprite** to change its **Costume** (see the Indicator Sprite code below for more information).

A sound is played. In this instance, the sound played is the **clapping** sound.



The **Inspector Sprite** will **say** the text in the white box. The text will display in a speech bubble for the number of seconds entered in the white circle.

The rest of the code under the **else statement** is ignored.

Else…Else

If both of the **If Statements** above are **False** (i.e. the **Temperature Variable** is less than 29 and 19), the final **Else Statement** activates the code within it.

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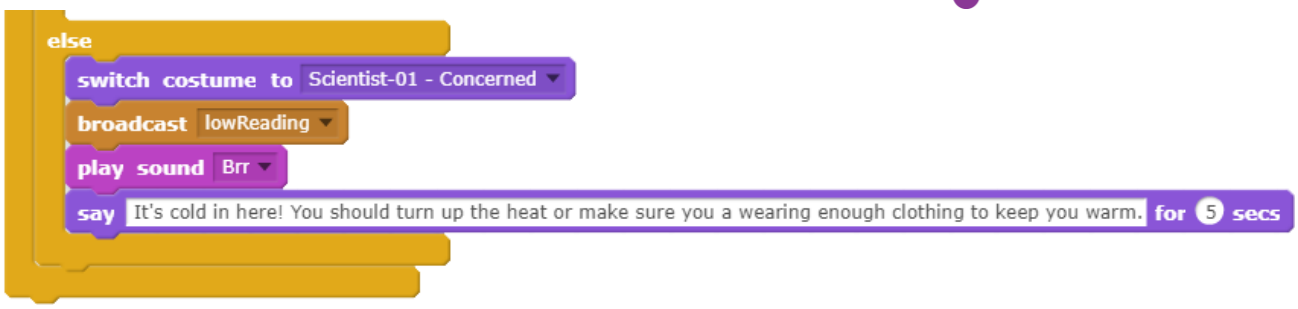
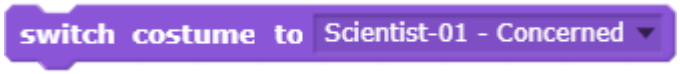


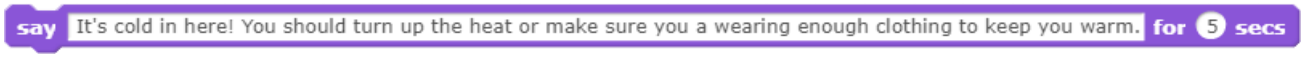
The following things will happen:



The Inspector Sprite's costume is changed (switched) to the **Concerned** pose.

The message **lowReading** is transmitted (broadcast) to the other **Sprites.** This will cause the **Indicator Sprite** to change its **Costume** (see the Indicator Sprite code below for more information).

A sound is played. In this instance, the sound played is the **Brr** sound.



The **Inspector Sprite** will **Say** the text in the white box. The text will display in a speech bubble for the number of seconds entered in the white circle.

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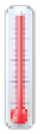
Indicator Sprite			
Neutral	 Indicator Low	 Indicator Medium	 Indicator High

Code Explained

When the **Inspector Sprite** broadcasts the **noReading** message, the **Indicator Sprite** will switch to the **Neutral** costume. This is the default costume in the program.

When the **Inspector Sprite** broadcasts the **lowReading** message, the **Indicator Sprite** will switch to the **Low** costume.

When the **Inspector Sprite** broadcasts the **mediumReading** message, the **Indicator Sprite** will switch to the **Medium** costume.

When the **Inspector Sprite** broadcasts the **highReading** message, the **Indicator Sprite** will switch to the **High** costume.