

# Modifying *interfaces* and creating new ones

An interface is used by your learner to explore the behaviour and characteristics of the model. It can contain graphs, values, sliders, animations, etcetera.

In this chapter you learn how to modify an existing interface and how to create new ones.

## Modifying interfaces

You are going to modify an existing interface. You do this in three general steps:

- copying and renaming an existing interface
- editing the interface
- saving and checking your work

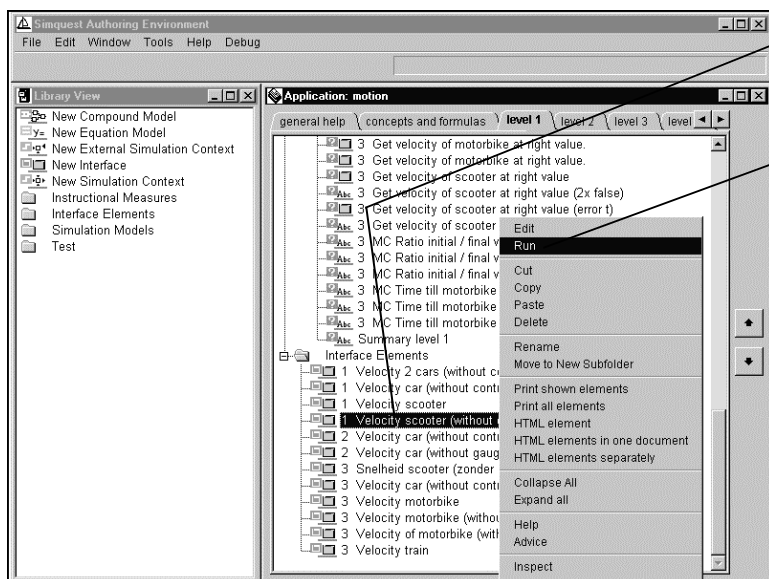
### *Copying and renaming an interface*

Before you can modify an existing interface, you have to:

- select one that has good resemblance with the one you want to make,
- make a copy of the selected interface to keep the original one intact, and
- rename it, so its name represents its content.

### Selecting an interface

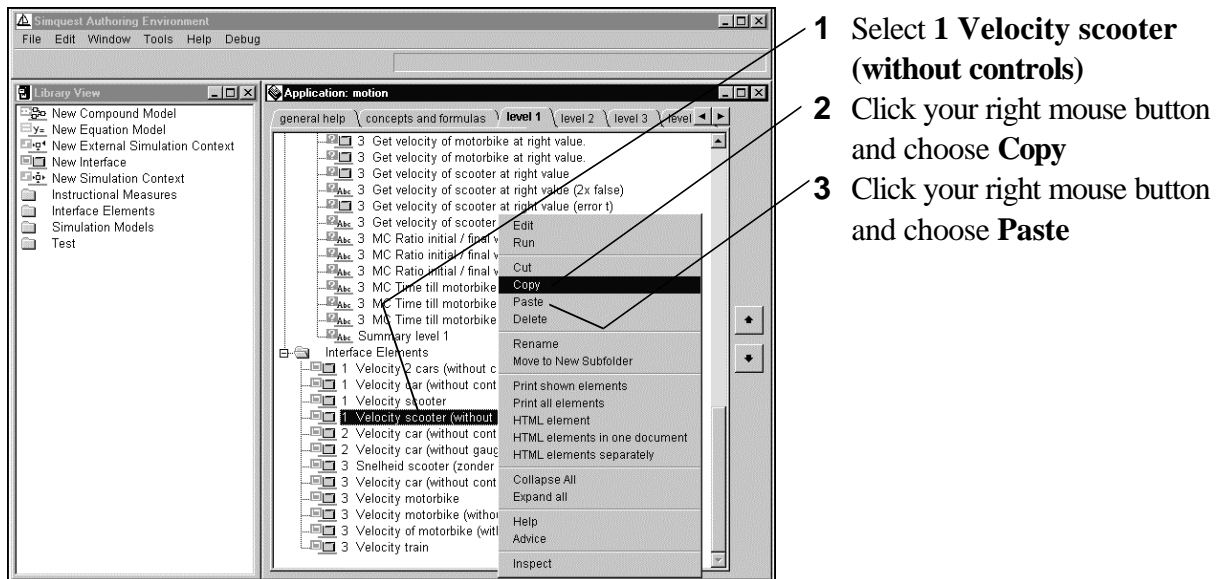
The Motion application contains several interfaces. Some of these interfaces cannot be used by your learners, because the necessary controls (start and stop buttons) are missing. You can recognise these interfaces by their extension “without controls”. You can recognise these interfaces by their extension “without controls”.



- 1 In *level 1* in the *Application window*, select **1 Velocity scooter (without controls)**
- 2 Click your right mouse button and choose **Run**
- 3 Check if the interface indeed cannot be used. After that, close it

## Copying an interface and pasting it

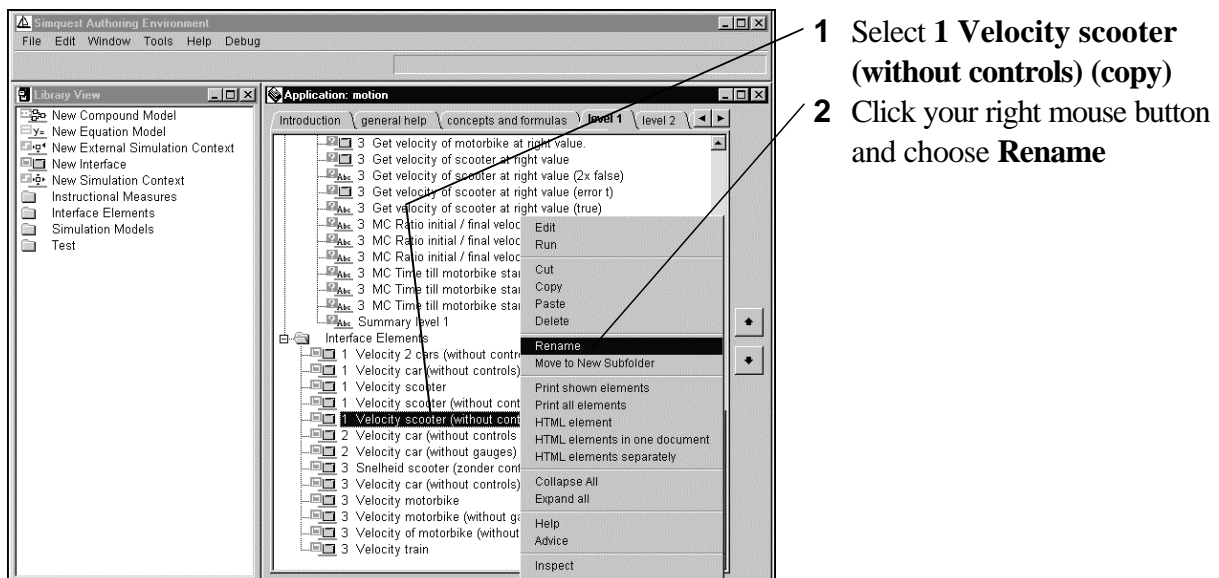
You have to keep the original interface, because it is already used in the Motion application. Therefore, you should make a copy of it and use the copied interface to modify.

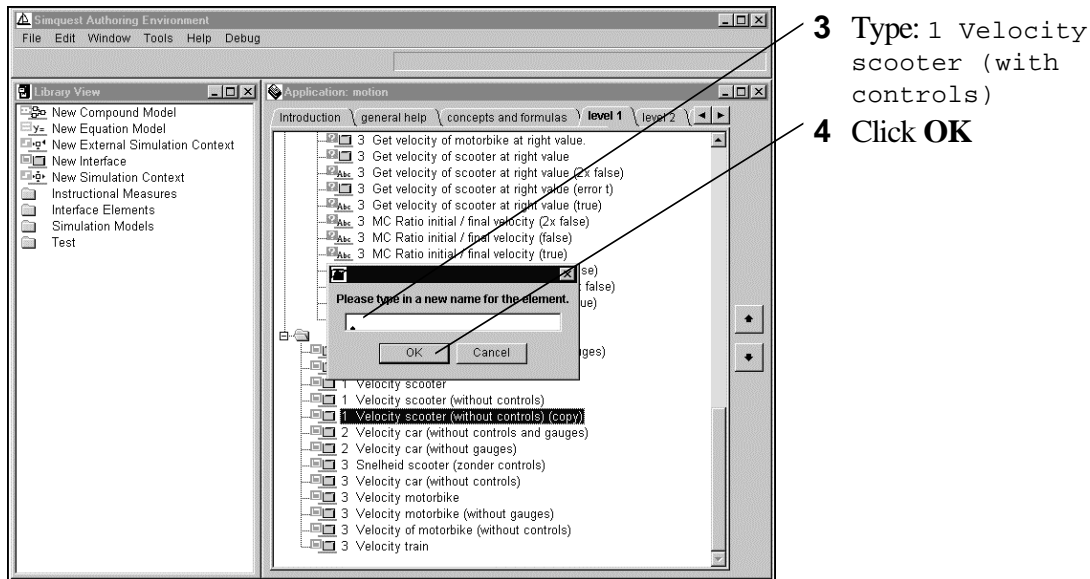


An interface with the same name and the extension '(copy)' is added to the application. Check if this is the case.

## Renaming an interface

You can rename the interface.





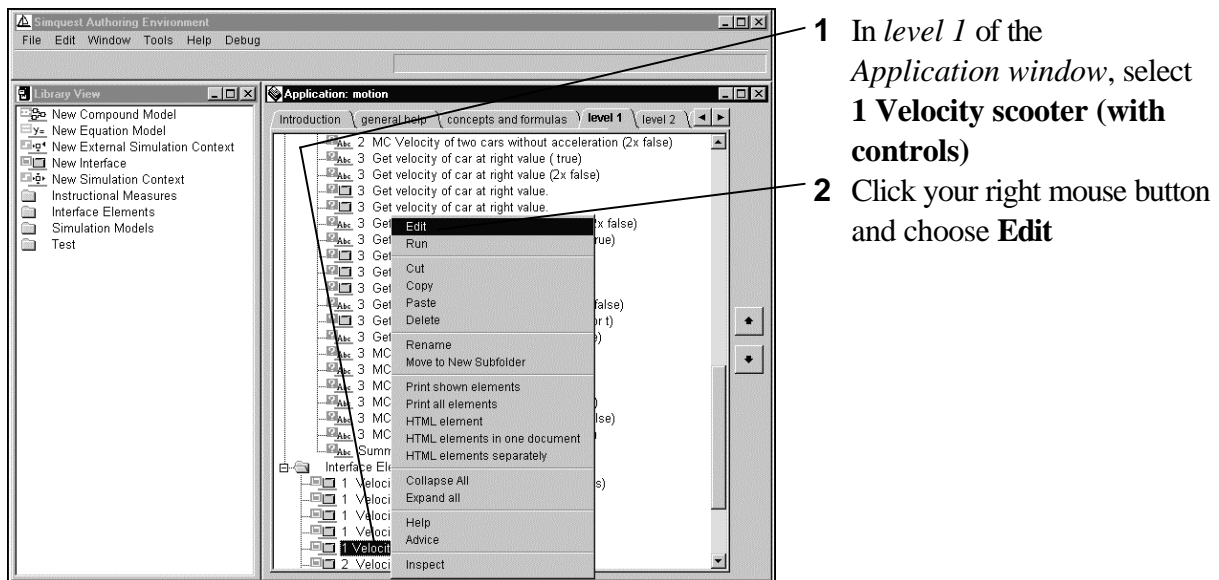
### *Editing an existing interface*

The steps to edit an interface are:

- opening the interface editor
- adding interface elements
- moving and resizing elements
- specifying the element-properties

### **Making the interface editable**

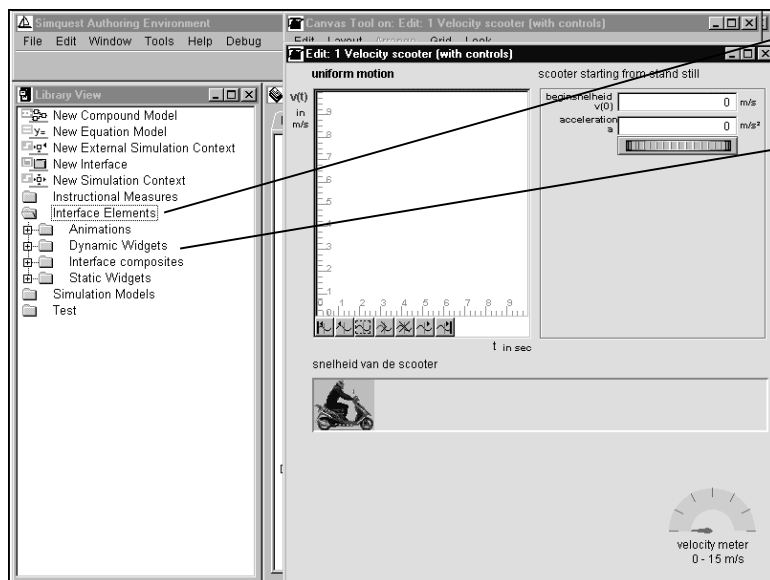
You can open an interface in two 'modes': the *execution* mode and *edit* mode. When you run the interface, you use the execution mode.



Check if the interface appears on your screen. You can recognise whether you activated the edit mode by the window-title.

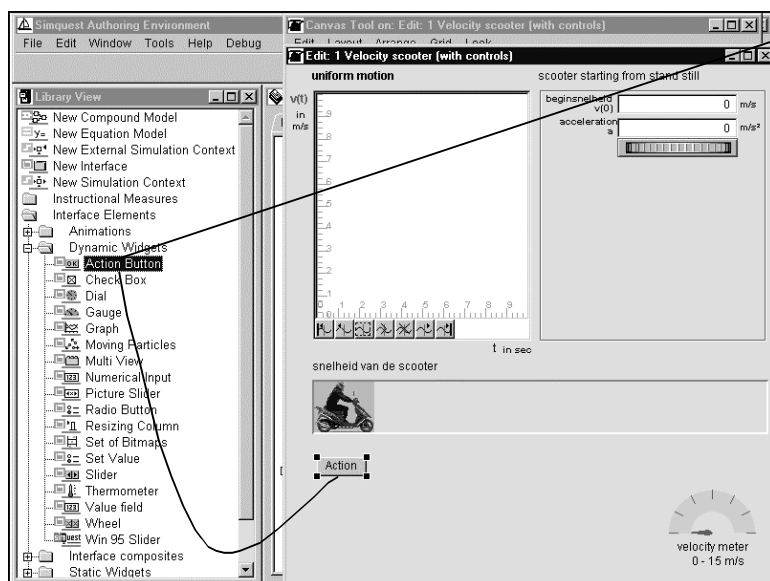
## Adding interface elements

To be able to use the interface, you have to add an interface element to the interface. The necessary interface element for this is available in the Library window. You can find it in the folder: Interface elements. You need a Start button to let the scooter move.



1 In the *Library window*, select the folder **Interface Elements**

2 Select the subfolder **Dynamic Widgets**



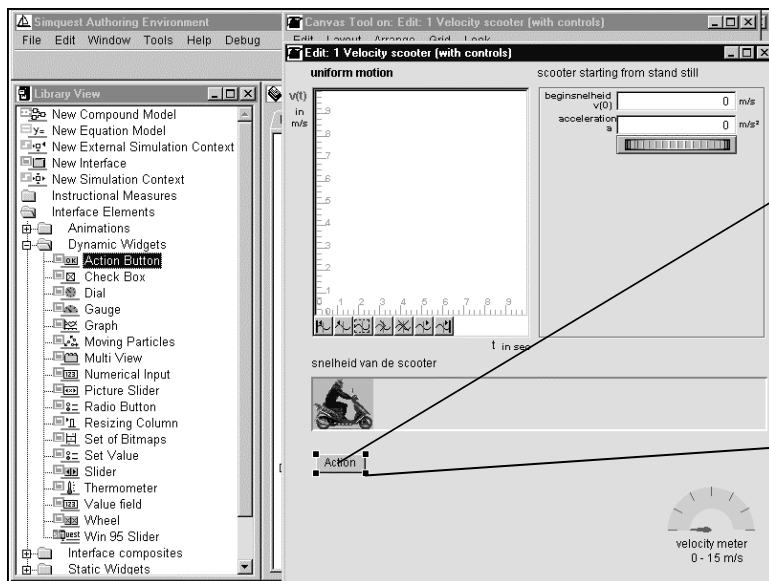
3 Select **Action Button**

4 Drag **Action Button** from the *Library window* and drop it into the *interface*

Check if the action button appears on the interface.

## Moving and resizing interface elements

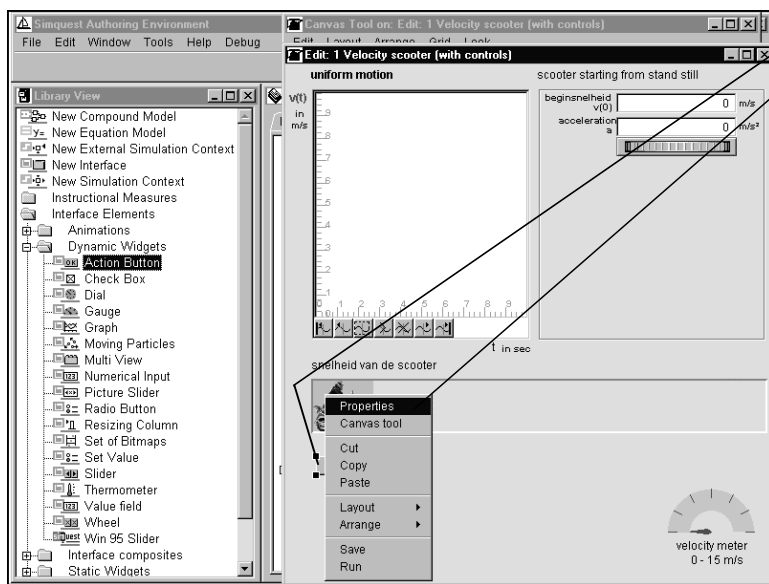
The action button you just dropped is probably not on the right place of the interface. It may also have a different size you probably want it to have. You can replace the action button and change its size.



- 1 Select the **action button**  
You can see if an element is selected by the squares in the corners of the element
- 2 To *move* the **action button**, select it, hold the left mouse button down, drag the element to an appropriate place, and release the left mouse button
- 3 To *resize* the **action button**, select one of the corners of the button, hold the mouse button down, drag until the appropriate size is reached, and release the mouse button

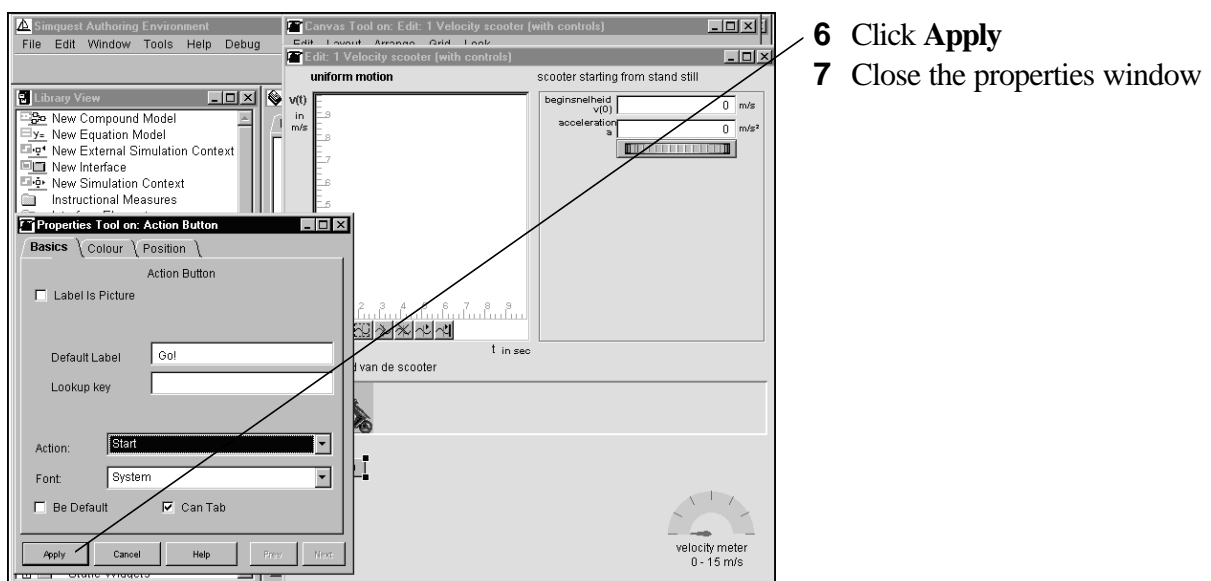
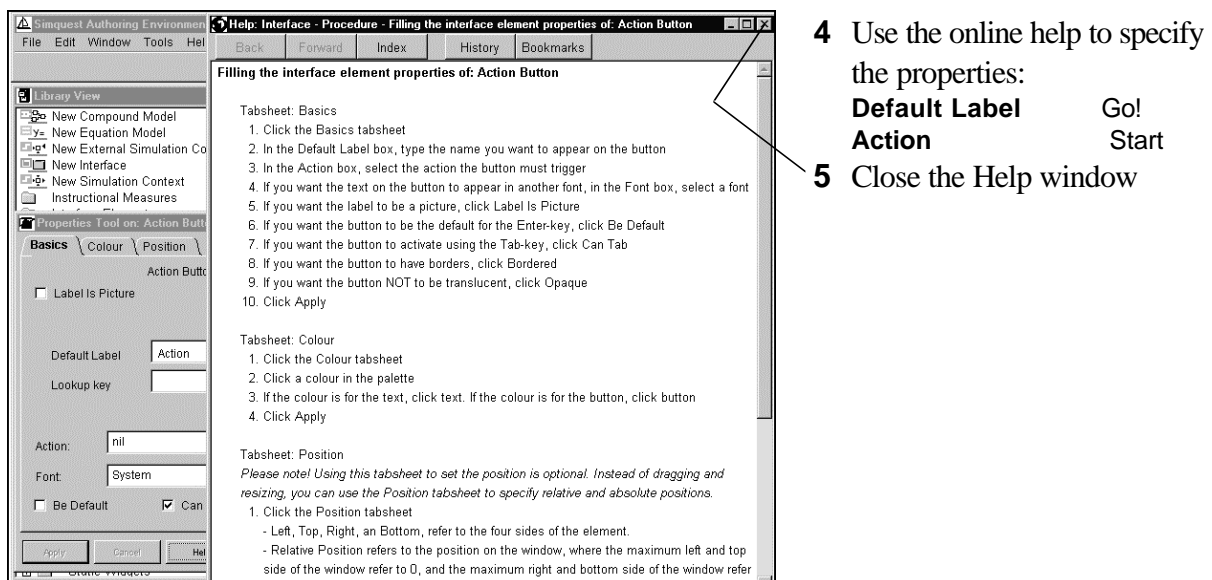
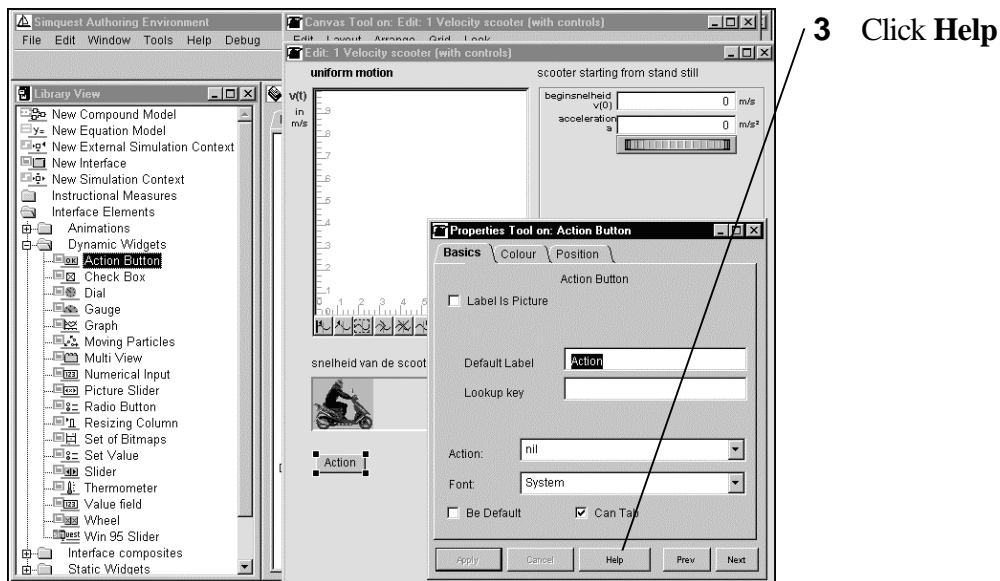
### Specifying the interface element properties

You added the action button to make the interface usable for your learners. Next, you have to specify what your action button should do when the learner clicks it. Also, you can change the name of the button according to its purpose. You can specify these changes in the element properties.



- 1 Select the **action button**
- 2 Click your right mouse button and choose **Properties**

You can use the online help to modify the specifications in the tabsheets of the properties window.

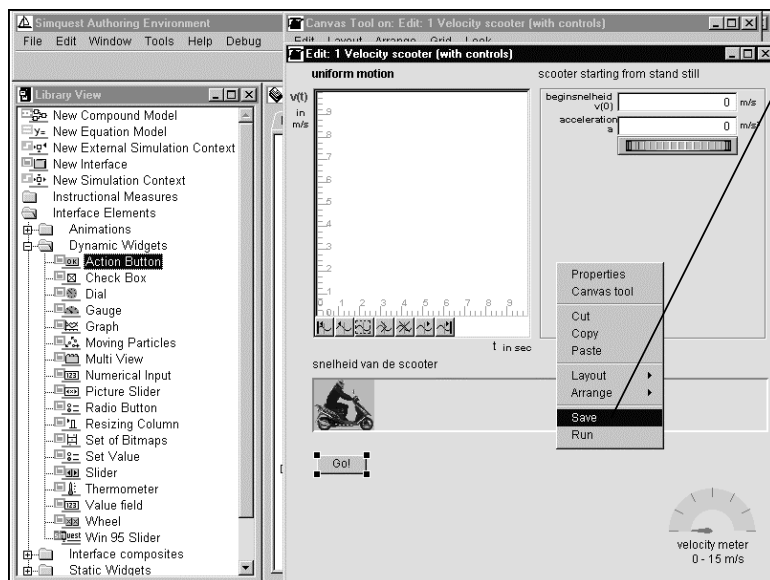


## ***Saving and checking your work***

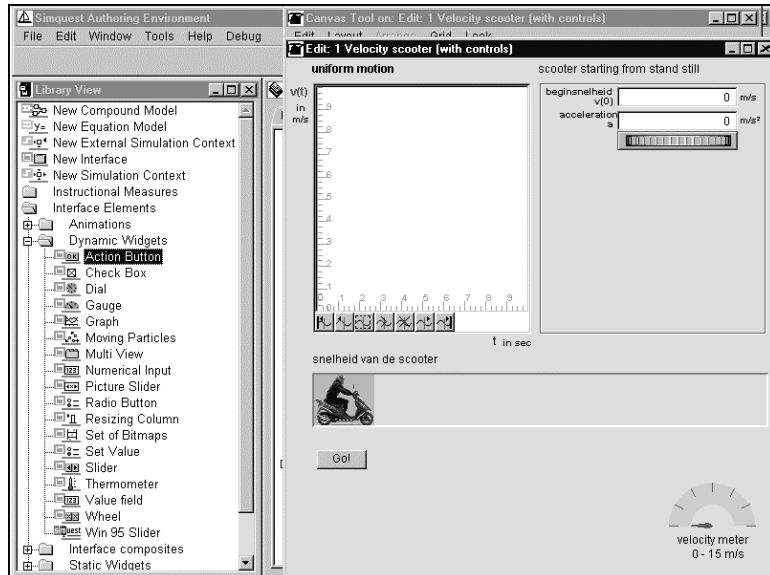
To keep the modifications you made, you must save your changes. When you have done this, you can check your work by running the interface. If your work turned out to be correct, you can save the Motion application.

### **Saving an interface and closing it**

You can save your modified interface using your right mouse button.



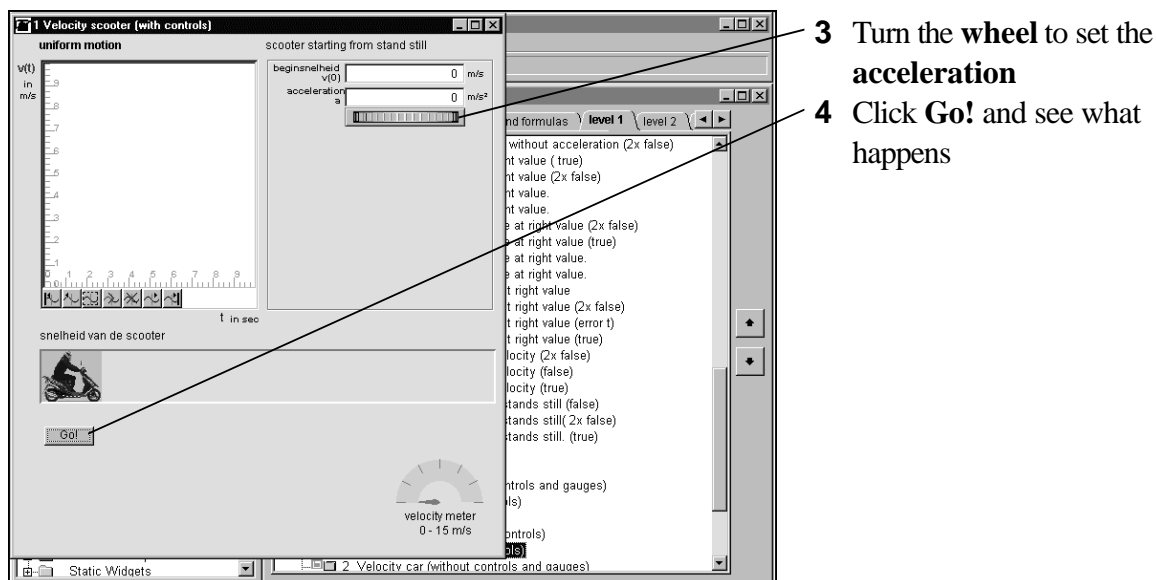
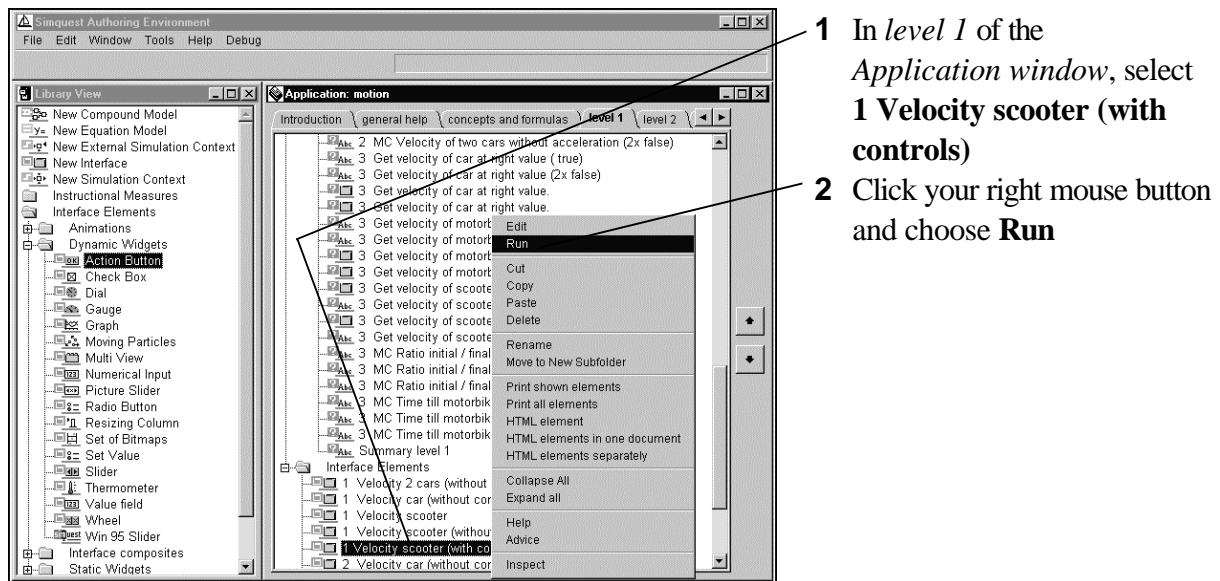
**1** In the *Edit: 1 Velocity scooter (with controls)* window, click your right mouse button and choose **Save**



**2** Close the interface window

### **Checking your work**

To check if your action button indeed makes the scooter move, you execute the interface.



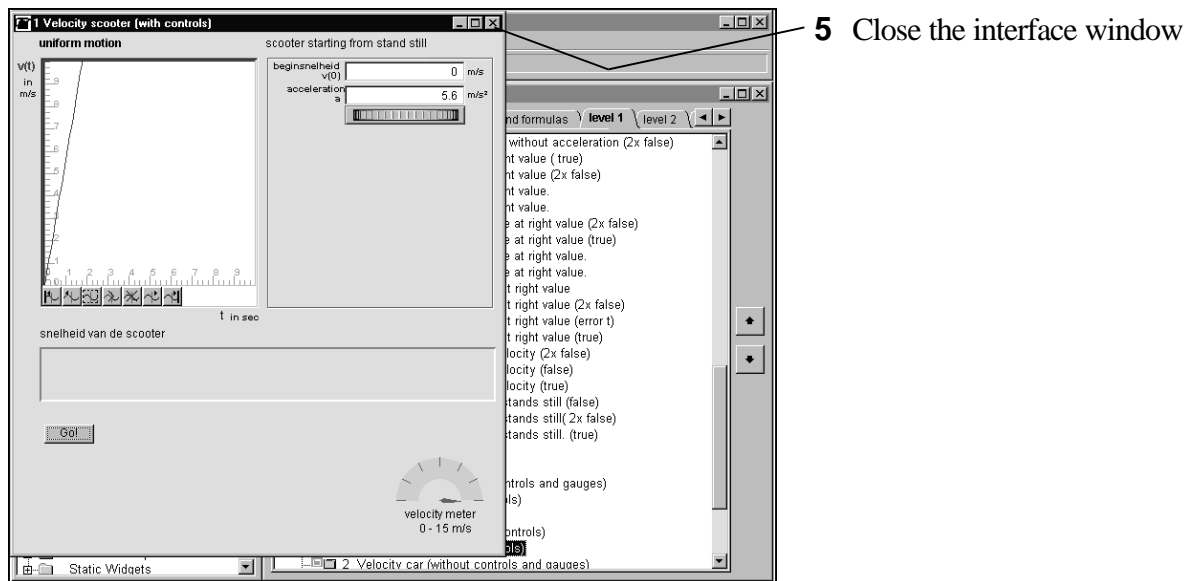
problem: **Nothing happens when you click Go!**  
 cause 1: You forgot to set the acceleration  
 cause 2: You forgot to save the interface  
 cause 3: You opened the interface in edit mode

solution 1: 1 Turn the wheel until a number appears in the box  
 2 Click **Go!**

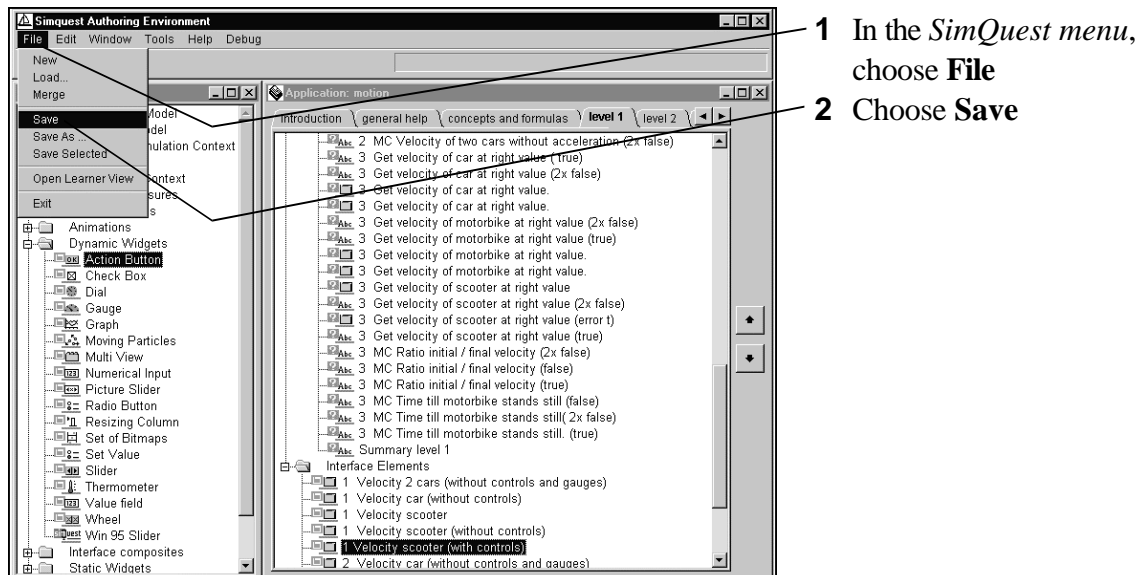
solution 2: 1 Select **Speed scooter (with controls)**  
 2 Click your right mouse button and choose **Edit**  
 3 Repeat all steps starting from section: Specifying the interface element properties

solution 3: 1 Close the interface  
 2 Select **Speed scooter (with controls)**  
 3 Click your right mouse button and choose **Run**





**Saving the application** Finally, you can save the application.



### *Try it yourself*

As you can see, you cannot stop the car (apart from closing the window). If you want to exercise modifying interfaces more, you can now add a stop-button to the interface.

Do not forget to save your work afterwards!

In the next section, you will create an interface from scratch.

# Creating a new interface

To create a new interface, you carry out three general steps:

- adding a new interface to your application and naming it
- editing the interface
- saving and checking your work

## *Adding an interface and naming it*

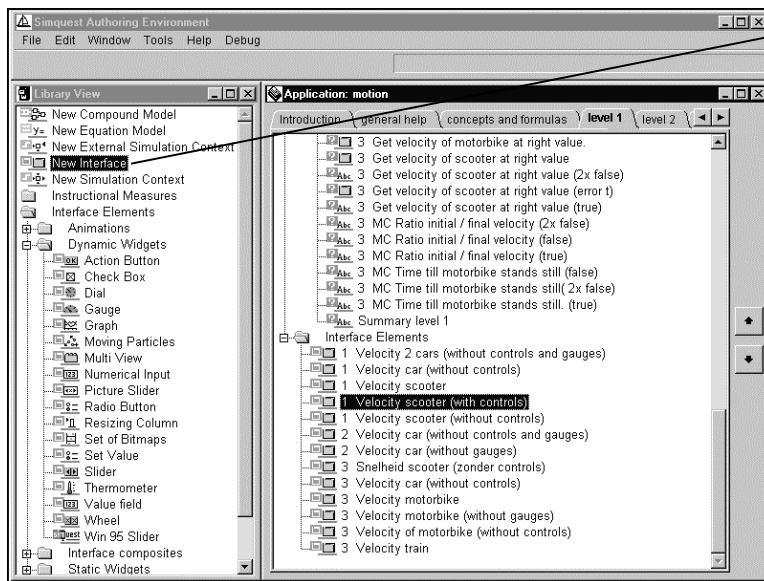
Before you can start creating your interface, you must:

- add an empty interface to your application, and
- give it a name.

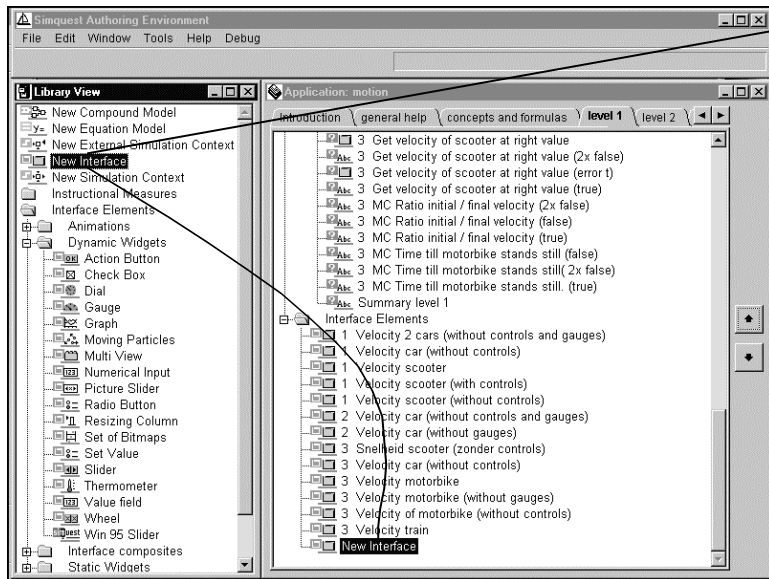
## **Dropping a new interface in your application**

The Library window contains several elements that start with the word new. These elements are the starting point for creating your application. They serve as empty “shells” which you fill with other elements later.

You want to create a new interface. For this you need the library element: New Interface.



1 In the *Library window*, select **New Interface**



- 2 Drag **New Interface** from the *Library* window and drop it into the folder *Interface elements* of *level 1* of the *Application* window

problem:

**You dropped the element into the wrong tabsheet or folder of the application window**

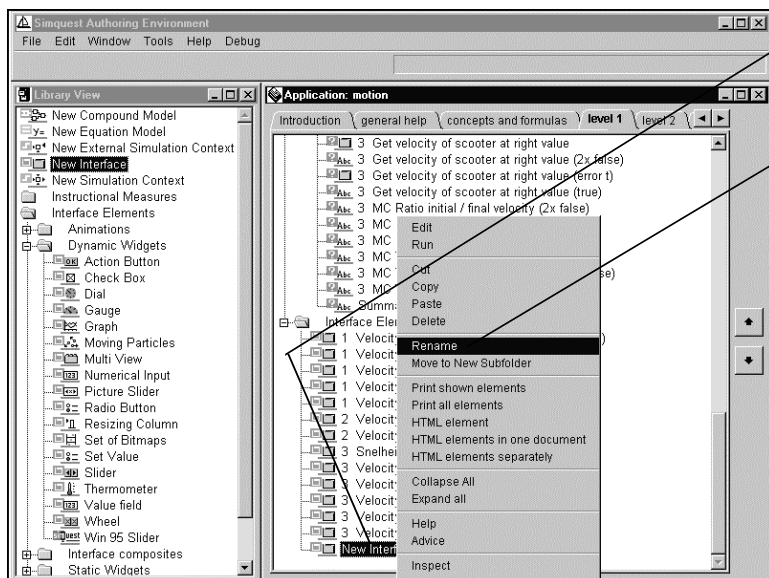
solution:

- 1 Select the element
- 2 In the *SimQuest* menu, click **Edit** and choose **Cut**
- 3 In the *Application* window, select the right tabsheet or folder
- 4 In the *SimQuest* menu, click **Edit** and choose **Paste**

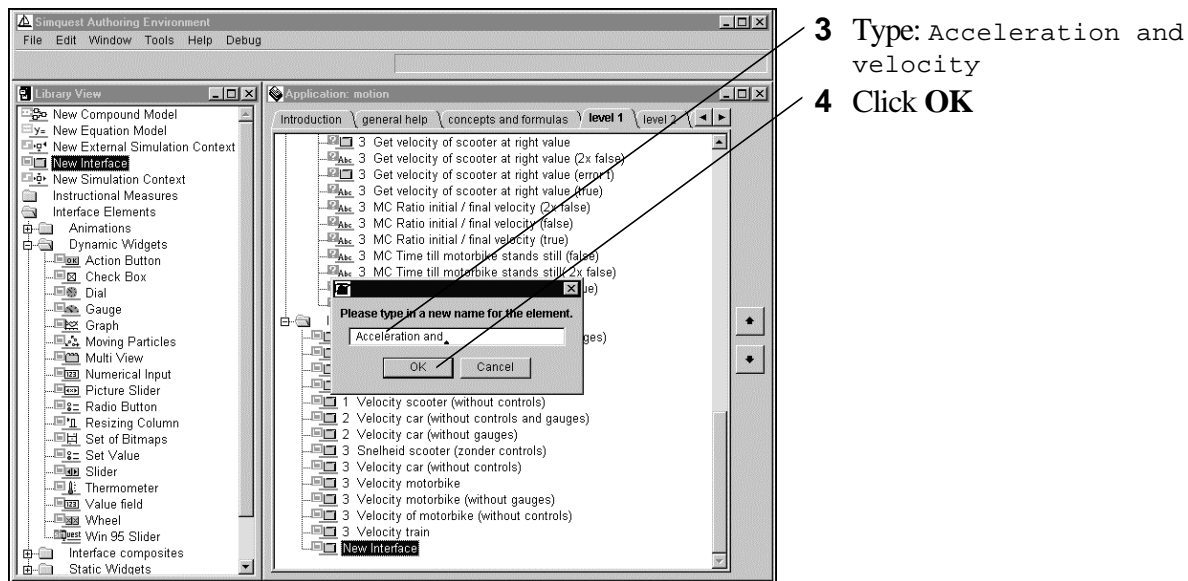
## Naming your new interface

To make sure that you keep a clear overview of the organisation of your application, you can (re)name the elements in your application.

The topic of the interface you are going to create is Acceleration and speed.



- 1 In *level 1* of the *Application* window, select **New Interface**
- 2 Click your right mouse button and choose **Rename**



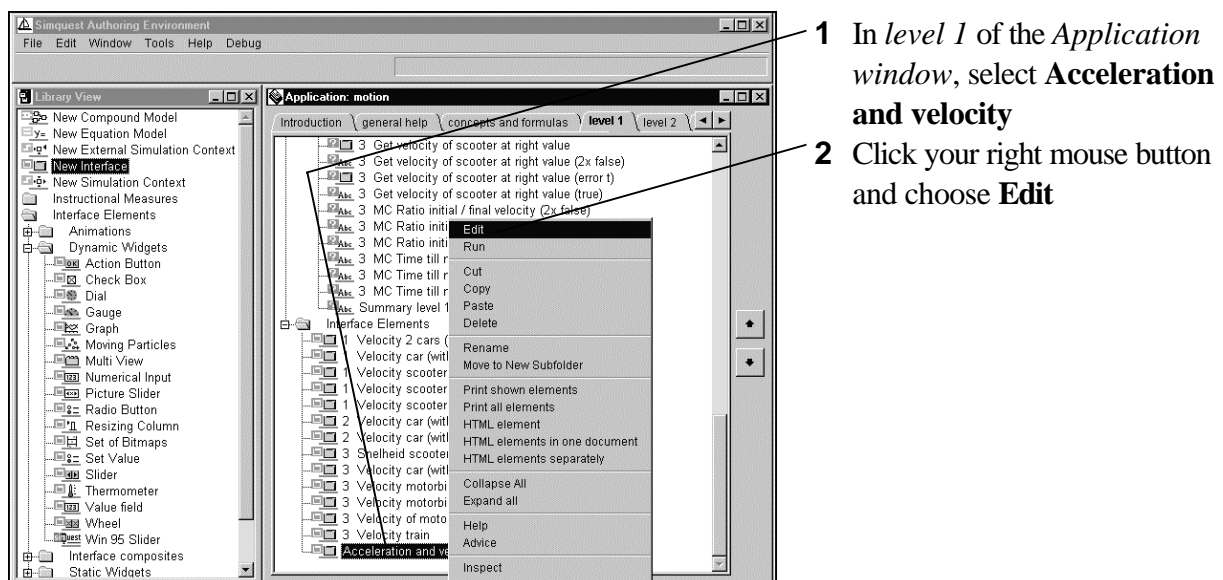
## Editing the interface

To edit your new interface, you must:

- open it in edit mode
- fill it with interface elements
- place and resize the interface elements and
- specify what each element should do

## Opening the empty interface

To be able to add interface elements to your interface, the interface must be opened in edit mode.

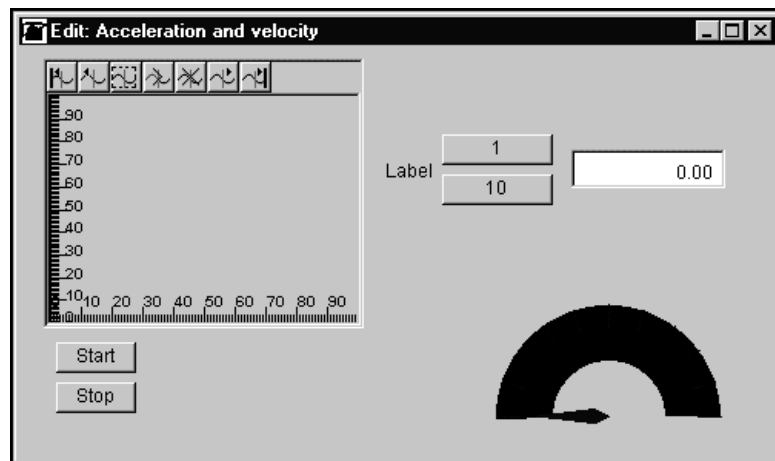


Check if the interface is opened in edit mode by examining its window title.

## Adding interface elements

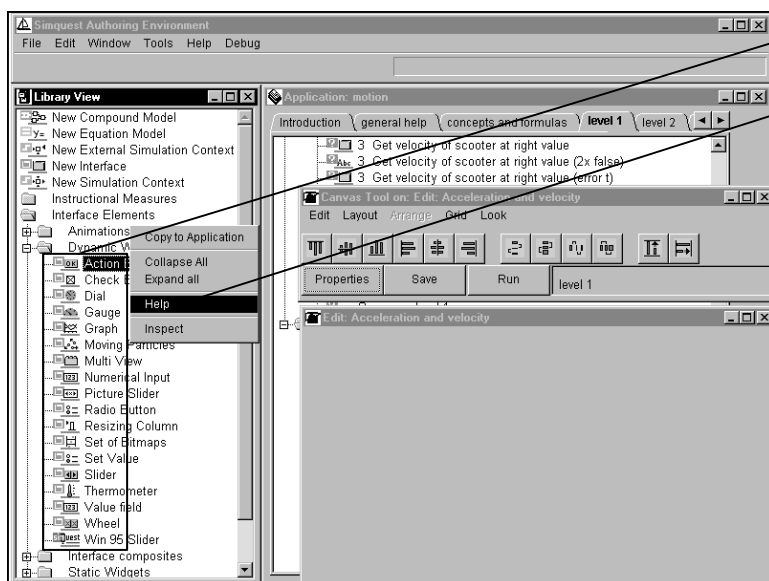
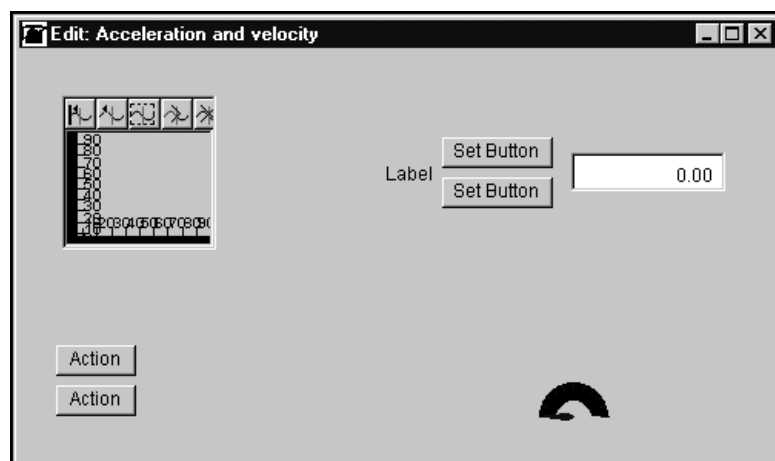
In this case, you are going to create the interface below. In this example interface, the learner can set the acceleration to 1 or

10. Using the start button, a Time-distance graph appears as well as the Velocity on the meter.

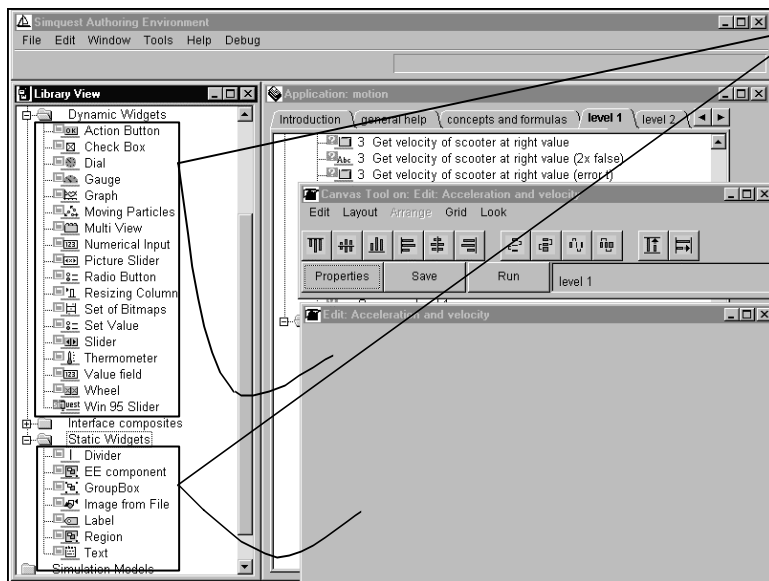


You can now fill the empty interface window with the needed interface elements. These elements are available in the Library window in the folder Interface elements.

Use the online help and the picture below to find the interface elements you need.



- 1 In the *Library* window, select an interface element
- 2 Click your right mouse button and choose **Help**

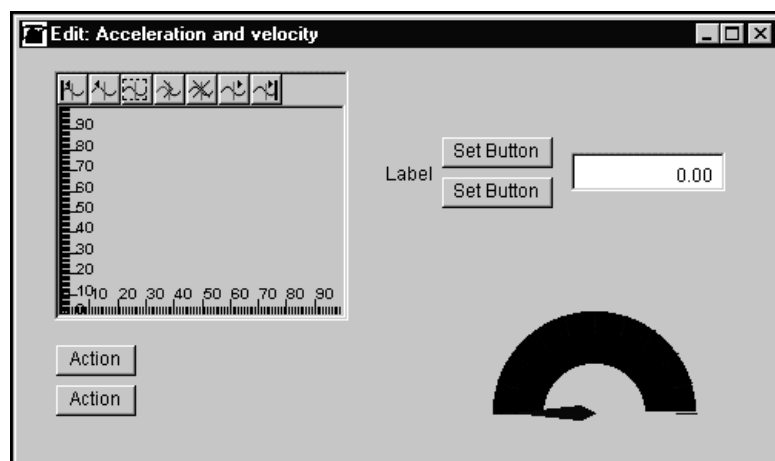


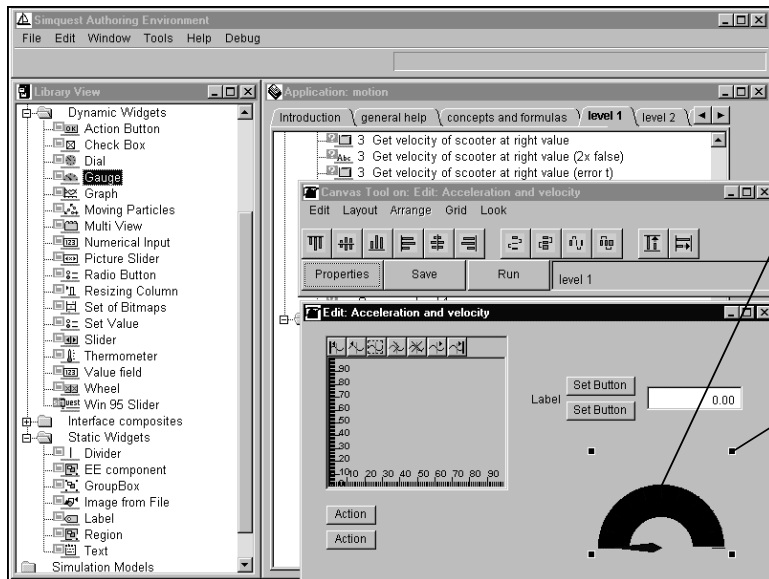
**3** If you have found an element you need, drag it from the *Library window* and drop it into the *Acceleration and speed* interface

**4** Continue the above steps until you have added:  
1 Gauge, 2 Action buttons, 2 Set values, 1 Graph, 1 Label, and 1 Value field

### Placing interface elements and resizing them

You can replace and resize elements to compose a clear interface for your learner. You can use the example interface in this manual as a guide, but you can also compose it following your own wishes.

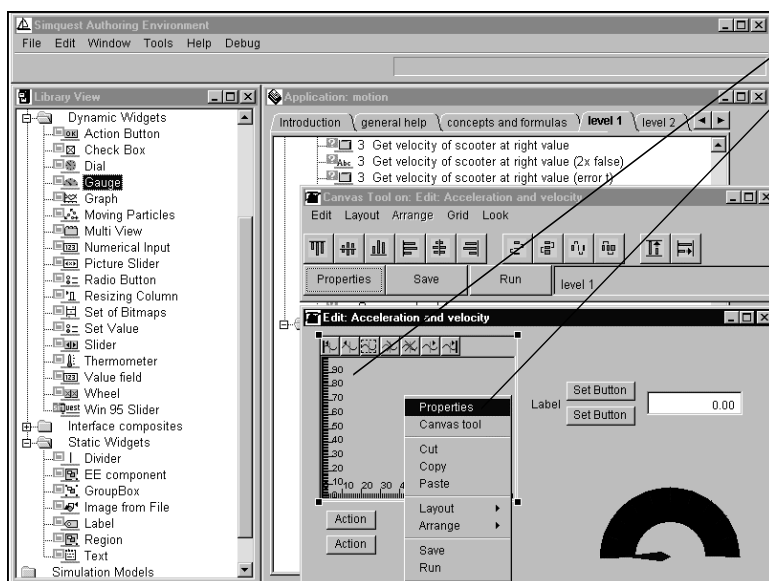




- 1 Select an interface element.  
You can see if an element is selected by the squares in the corners of the element
- 2 To *move* the element, select it, hold the left mouse button down, drag the element to an appropriate place, and release the left mouse button
- 3 To *resize* the element, select one of the corners of the button, hold the mouse button down, drag until the appropriate size is reached, and release the mouse button

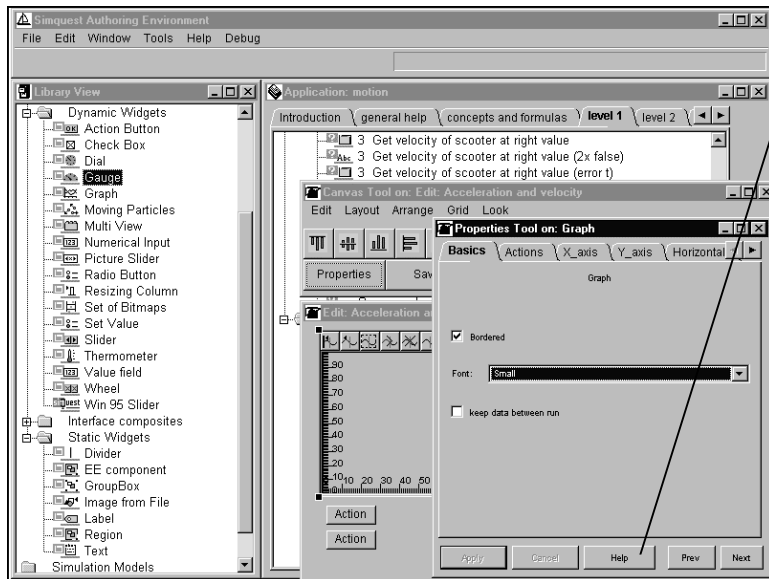
### Specifying the properties of interface elements

To make the elements do what you want them to do, like starting something, displaying a line, or setting a value, you specify the properties of each element.



- 1 Select an element
- 2 Click your right mouse button and choose **Properties**





**3 Click Help**

**4 Use the help to specify the properties of each interface element. The specification for each element are:**

**Action button 1**

Label: start

Action: Start

**Action button 2**

Label: stop

Action: Stop

**Set button 1**

Label: 1

Variable: F\_drive

Set value: 1

**Set button 2**

Label: 10

Variable: F\_drive

Set value: 10

**Value Field**

Read Only!!

Variable: F\_drive

**Label**

Label: Acceleration

**Gauge**

Start: 0

Stop: 100

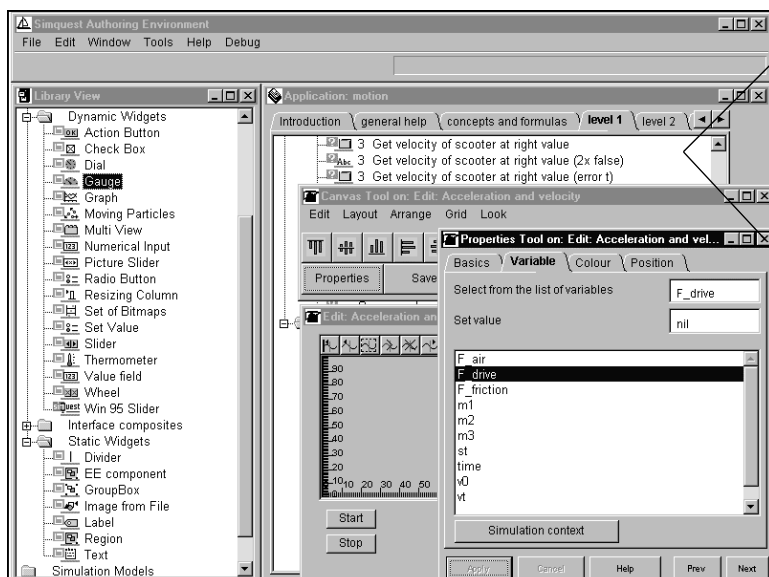
Step: 1

Variable: vt

**Graph**

X-axis: time

Y-axis: st



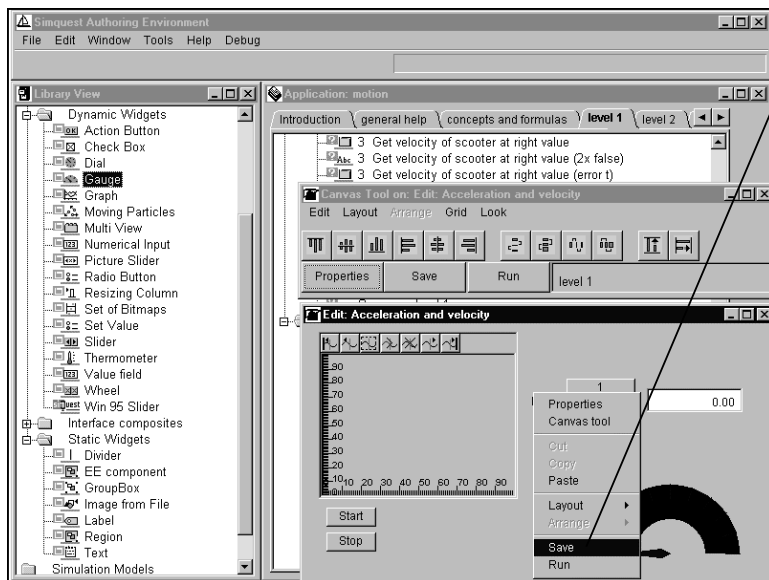
**5 Close the properties editor**

## ***Saving and checking your work***

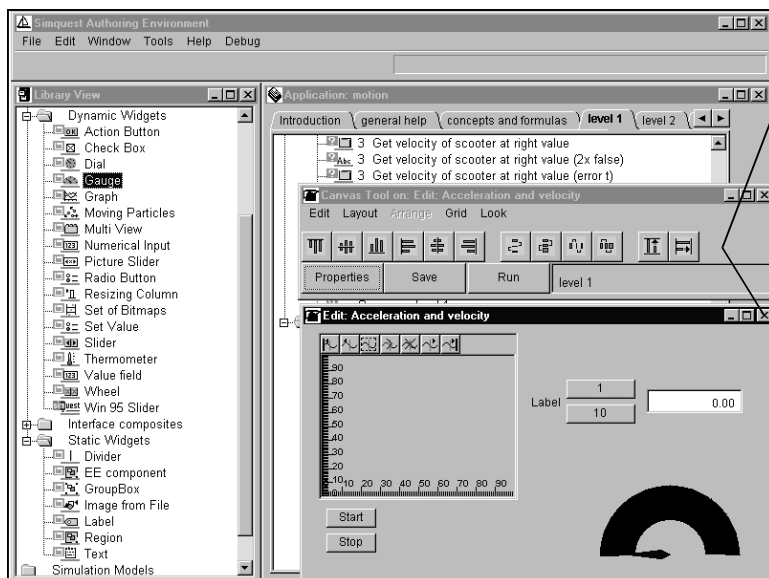
To check your work, you must first save your interface. After you have checked if your interface works, you can save your application.

### **Saving and closing the interface**

You have now created an interface. If you have specified all the properties correctly, your interface will work. Before you can check this, you must save your work.



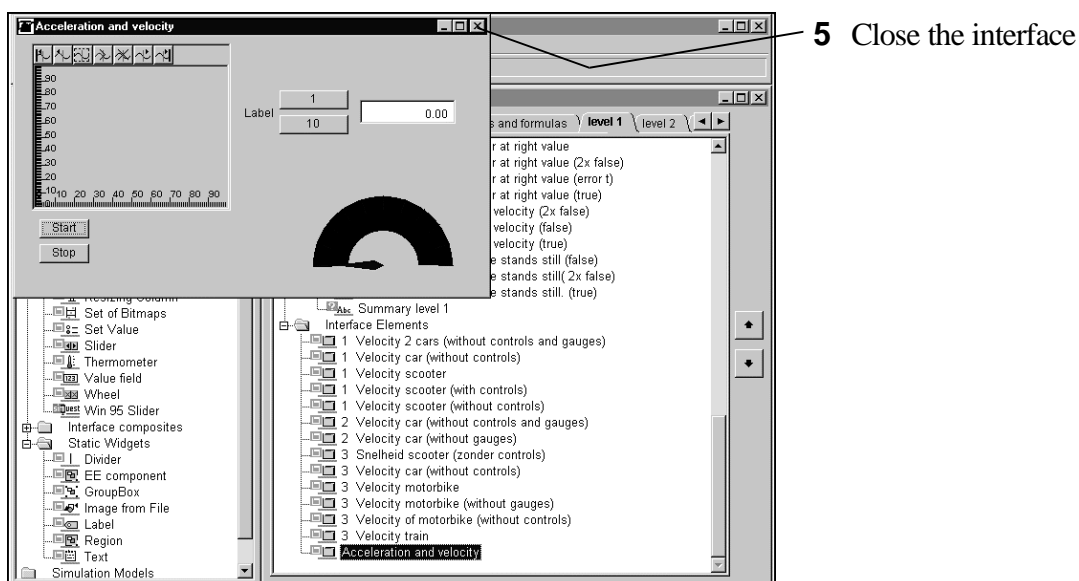
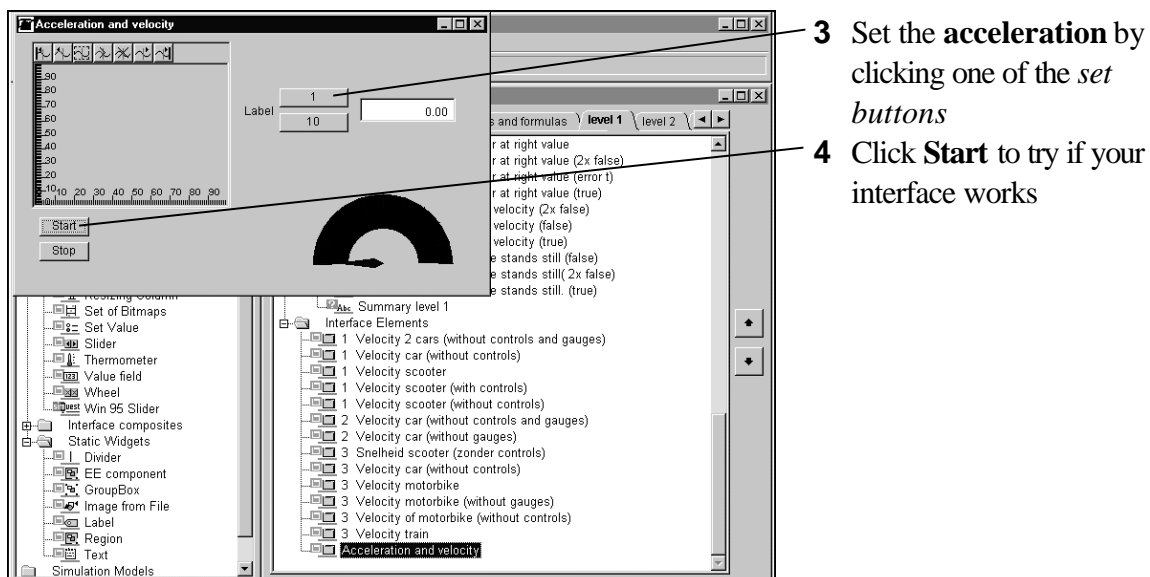
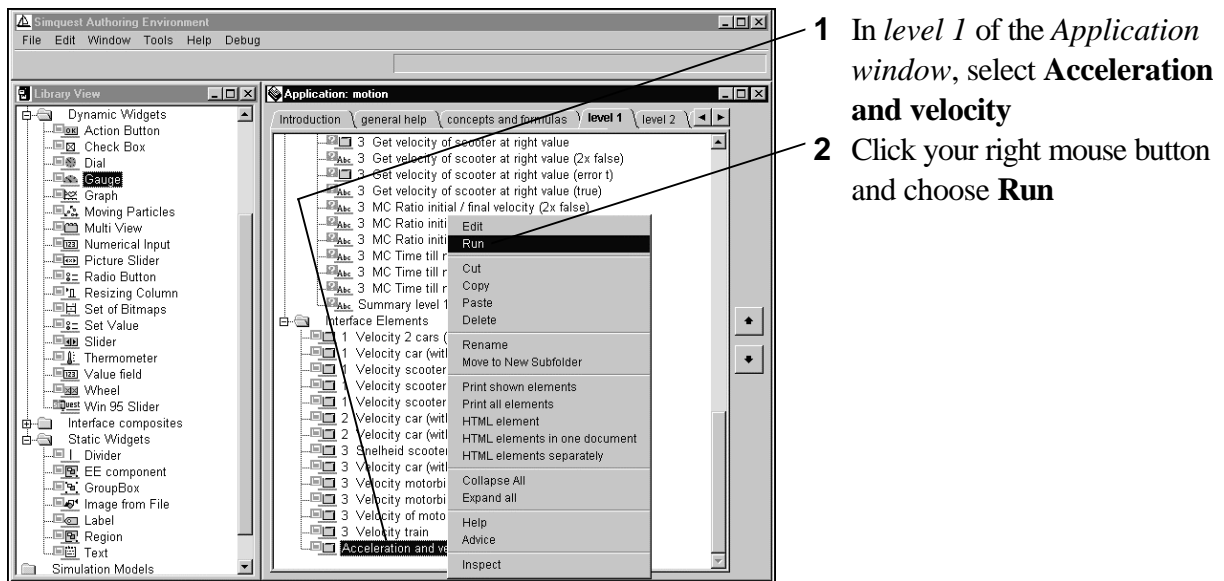
**1** In the *Edit: Acceleration and speed* window, click your right mouse button and choose **save**



**2** Close the interface

### **Checking your work**

To check if your interface works, you must open the interface in execute mode.



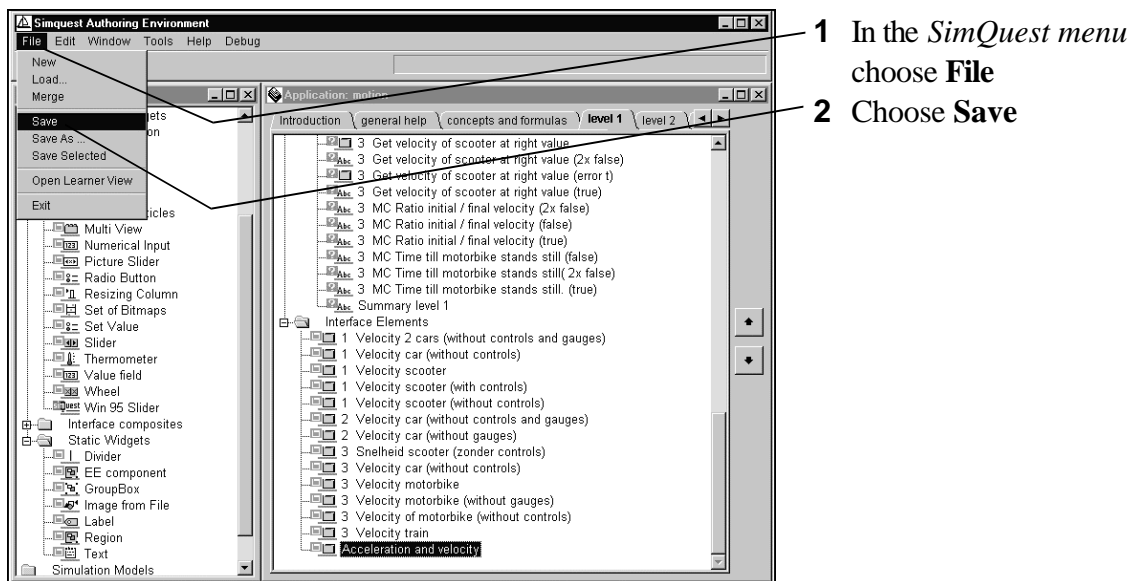
problem: **Nothing happens when you click start**  
 cause 1: You forgot to set an acceleration  
 cause 2: You forgot to save the interface  
 cause 3: You opened the interface in edit mode

solution 1:   
 1 Click one of the set buttons and check if a number appears in the box  
 2 Click **start**

solution 2:   
 1 Select **Acceleration and speed**  
 2 Click your right mouse button and choose **Edit**  
 3 Repeat all steps starting from section: Specifying properties of interface elements

solution 3:   
 1 Close the interface  
 2 Select **Acceleration and speed**  
 3 Click your right mouse button and choose **Run**

**Saving your application** Finally, you should save your application.



**Try it yourself** Feel free to modify and extend your interface to make working with it more convenient. For example:

- Replace the two Set buttons by a **Wheel**, to allow your learner more different settings of the acceleration
- Add a **pause** and **continue** button to temporarily stop and restart the simulation
- Add **Value fields** to display the distance (variable: st) and speed (variable: vt)

You can use the online Help to get information about the general procedure of creating an interface, about the interface elements, and about specifying the properties of these elements.

Do not forget to save your work!

### ***Summary***

You have now modified and created interfaces.

You *modified* an interface by copying, renaming and changing an existing interface.

You *created* an interface by dragging an empty interface into your application, dropping interface elements into it, and specifying the properties of the interface elements.

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# 2

# Interfaces

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