

How to use the Exerciser Revision Tool (v355)

This document tells you how to use the Exerciser revision tool either as a drawing tool or as a revision tool. It begins with a summary of how to install and run the tool (more details, if required, can be found in the **READ ME** document downloaded with the tool).

Pre-requisites

The Exerciser revision tool should run on any computer with a Java Runtime Environment (JRE) installed on it (it has been tested with Sun's JRE). Go to the Java website www.java.com to obtain a copy of JRE.

Installing the Exerciser

The Exerciser revision tool can be obtained from our website <http://mcs.open.ac.uk/Diagrams/html/download.html>

Installing on a Windows PC

Go to this website, and click on the link **Download Exerciser for Windows PC**.

This will download a zip file containing an installer for the Exerciser Revision Tool. Unzip the file to obtain **Exerciser.msi** (a Windows installer file). Double-click on **Exerciser355.msi** to run Windows Installer and follow the on-screen instructions to save the Exerciser and its data files in a folder of your own choice.

Installing on a Macintosh or Linux machine

Go to this website, and click on the link **Download Exerciser for Mac/Linux**.

This will download a zip file containing the application, **ERDrawingExerciserV355.jar**, a folder named **QuestionSets** (containing the questions used by the tool) and various items of documentation. Unzip the zip file into a folder of your own choice.

The zip file for Macintosh/Linux machines can also be used for Windows machines. However, the installer for Windows machines provides additional support such as the provision of shortcuts and access to the application via the start menu.

Launching the Exerciser

Open the folder in which you installed the Exerciser where you will find the file:

ERDrawingExerciserV355.jar

and a folder named **Questions** containing some data files. There is also a **READ ME** file.

Double-click on the **.jar** file to launch the tool:

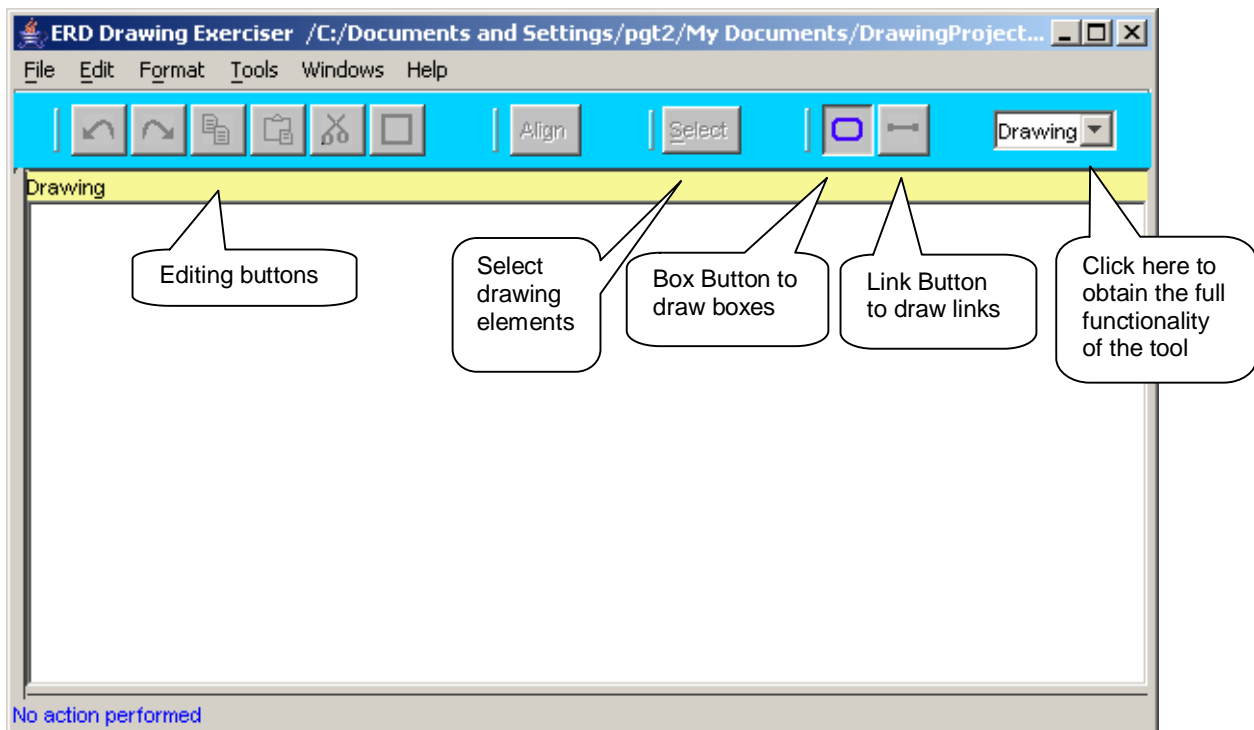


Figure 1 The Exerciser Revision Tool when launched

The tool is pre-configured to be used initially as a drawing tool. The full functionality of the Exerciser revision tool can be obtained by selecting the **Revision** item from the pull-down menu on the right-hand side of the tool bar. You will be able to draw diagrams in both modes.

How to draw a diagram in the Exerciser

Diagrams are drawn in the **Drawing** pane (see Figure 1).

A diagram consists of a collection of *boxes* and *links*.

Drawing boxes and links

To add a new box or link to a diagram, the **Box** or **Link** button must be pressed (see Figure 1).

A box can be drawn with the mouse **either** by clicking at the required place in the drawing pane to obtain a box of a standard size **or** by pressing the mouse cursor at the required place on the diagram and dragging to give a box of the required size. Once the mouse is released, a **Box Properties** window will pop up to enable a name and, if required, a description, to be given to the box.

To add a new link between two boxes on the diagram, press the **Link** button, press *inside* one of the boxes and drag to the second box. Once the mouse is released, a **Link Properties** window will pop up enabling various attributes to be added to the link. Link attributes include:

- a name (and a description when the small arrow button has been pressed);
- a crow's foot at each end of the link;
- a blob, which can be open or closed, at each end of the link.

A *self-link*, that is, a link between a box and itself (also known as a *recursive link*), is drawn by first pressing the **Link** button and then **either** clicking inside the box **or** pressing inside the box and drawing a short line within the same box. Once the mouse is released a **Self Link Properties** window will pop up, which is similar to the **Link Properties** window but also has a drop down menu to enable you to choose the corner of the box at which the self link will be drawn.

Selecting and moving boxes and links (individually or in groups)

Individual boxes and links can be selected by first pressing the **Select** button and then clicking on the box or link. Whenever the cursor is over a link, it changes to a hand-icon.

Multiple boxes and links can be selected by first pressing the **Select** button and then pressing the mouse outside the area to be selected and dragging to create a rectangle with a dashed border to surround the elements to be selected.

Once selected, a box will have 8 small square *edit points* which can be used to re-size the box. Press the mouse on an edit point and drag the point to re-size the box. A box can be moved by first pressing the **Select** button, then pressing the left-hand mouse button inside the box (the cursor will appear as a cross of arrows) and finally dragging the box to a new location.

The middle of a link can be moved (re-positioned) by first selecting the link and then dragging its middle edit point to the new location. An existing link can be made to link to another box by first selecting it and then dragging one of its end edit points to the other box.

The name of the link can be moved independently to a new location by clicking on the link and then pressing on the name and dragging it to a new location. Note: if the link is subsequently moved, the name will normally not be moved. If a name becomes too far removed from its link, it can be difficult to identify which link the name belongs to. Therefore, when a link is selected its name is highlighted by having a rectangle drawn around it.

You can change the properties of a box or a link at any time by selecting the box or link and then *right-clicking* on the box or link.

Saving and retrieving a drawing

Whenever you draw an ERD you can save it in a file on your PC (use the tool's **File** menu and choose **Save As**) – this will create a file with extension **.xml**. You can open a diagram file that you have previously saved with the tool by choosing **Open Drawing** from the tool's **File** menu.

There are other editing facilities, the details of which can be found by clicking on the tool's **Help** menu.

Copy and Paste

It is possible to copy a (selection of) a diagram and paste the copy either within the same diagram or to a Word document. To copy a drawing to a Word document, go to the tool's **Edit** menu, and choose **Select All**. Then, from the **Edit** menu, choose **Copy** (or use the Copy button on the tool bar). You can now position the cursor in the Word document at the place where you want to insert the drawing and paste it into the Word document.

Undo

The last editing action can be undone by pressing the **Undo** button.

Formatting a diagram to look 'pretty'

There is a variety of mechanisms for formatting/structuring a diagram: drag a box or the mid-point of a link, or use the Edit menu items 'Straighten link' (to straighten a link whose mid point has been moved) and 'Rectilinear Link' (to make link run horizontally and vertically).

How to use the Exerciser Tool

The ER diagram Exerciser enables you to practice drawing entity-relationship diagrams.

Change to revision mode by selecting the **Revision** item from the pull-down menu on the right-hand side of the tool bar (see Figure 2).

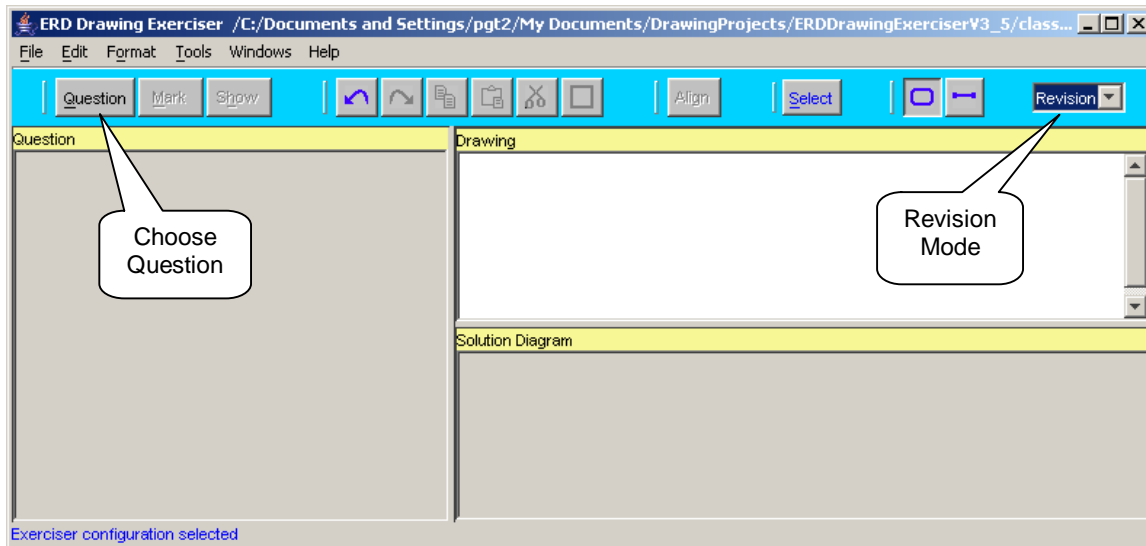


Figure 2 The Tool in Revision mode

In *Revision* mode, start by choosing a question to answer; that is, click on the **Question** button on the tool bar (see Figure 2). The Exerciser contains several sets of questions and you choose one by first selecting the question set (either *Relational* or *Scenario*) and then the number of the question and clicking **OK** (see Figure 3).

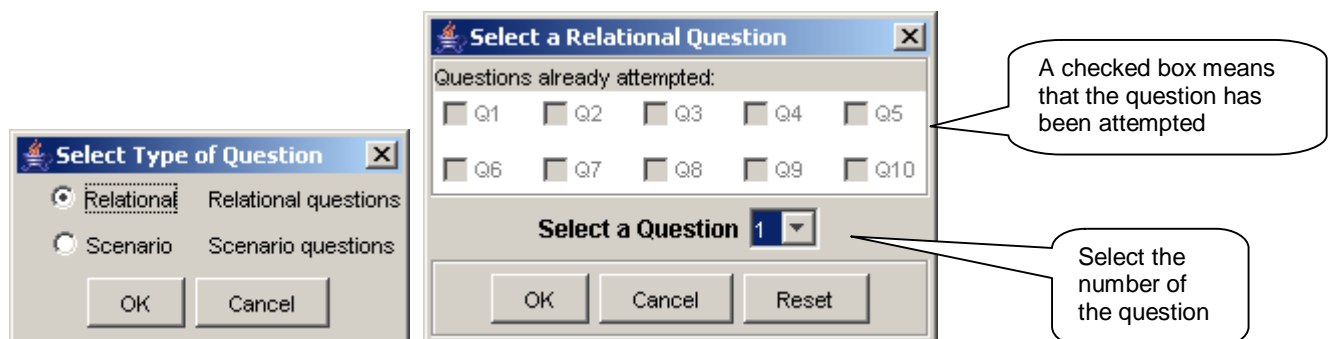


Figure 3 Selecting a question

The tool remembers which questions you have already attempted, so you can stop at any time and resume from that point at a later time. The question appears in the left-hand **Question** panel of the main screen (see Figure 4).

You draw your attempt at answering the question in the top right-hand **Diagram** panel. Instructions for drawing diagrams are given above.

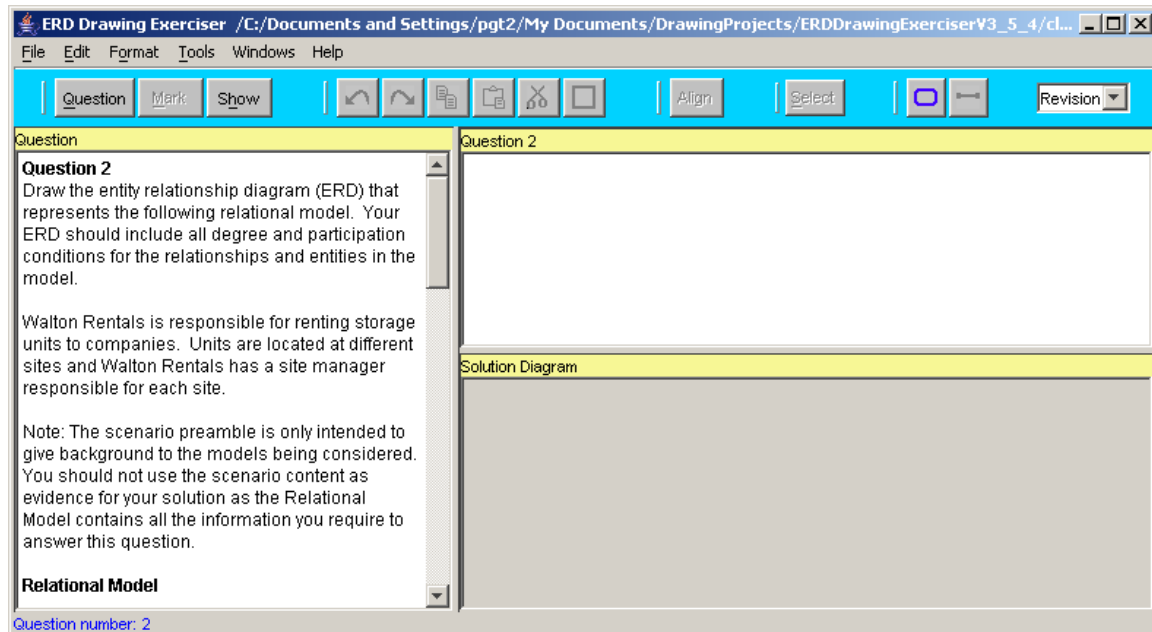


Figure 4 The question displayed in the tool

Once you have drawn a diagram you can ask the system to mark it by clicking on the button labelled **Mark** (see Figure 5).

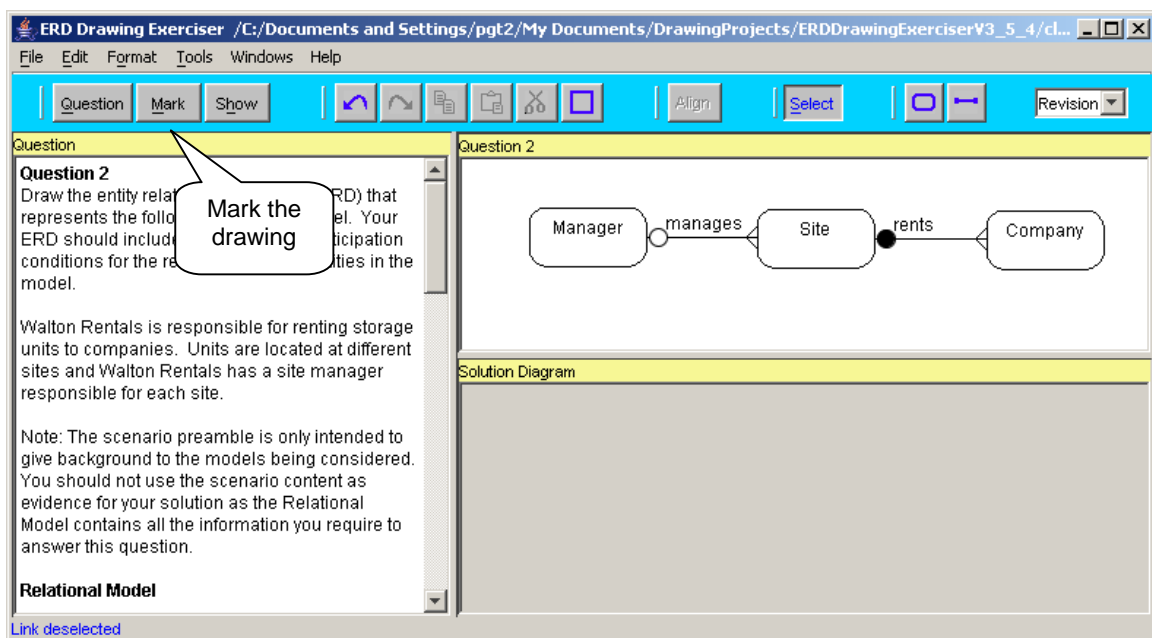


Figure 5 A drawing is constructed

The system responds by displaying a small window in which the system reports how well it thinks your answer corresponds to the specimen solution by awarding a grade (a mark) as shown in Figure 6.

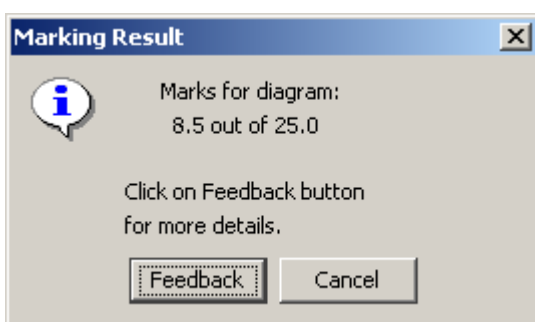


Figure 6 The system generated mark

The system asks you whether you want further details (see Figure 6). If you do, the system will provide an additional window that indicates where your diagram matches the solution diagram. The first level of detail is illustrated in Figure 7 where the answer diagram is shown with various elements drawn with short dashed lines and a blob shaded.

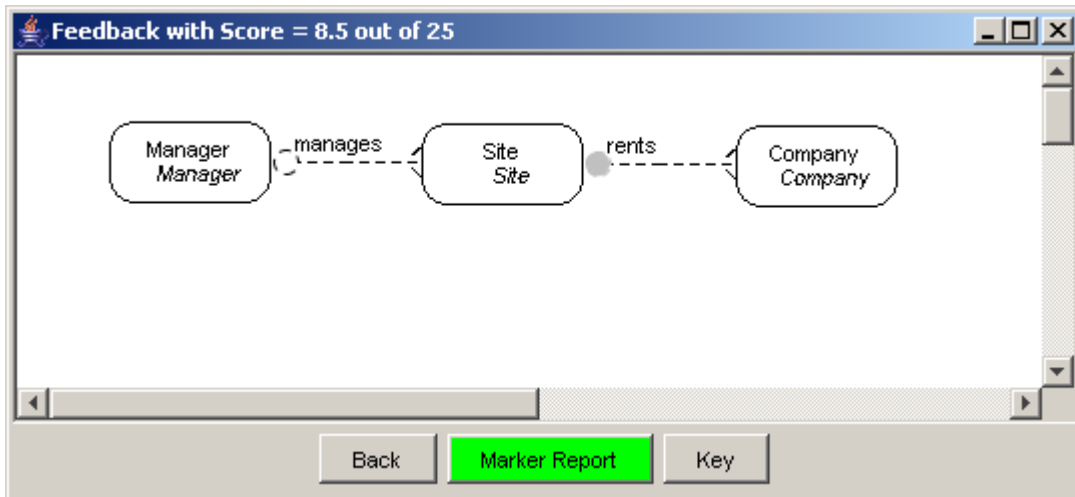


Figure 7 The feedback window

In Figure 7, boxes and links drawn with solid lines indicate those that the system thinks are correct. Dotted boxes and links and shaded blobs are thought to be incorrect in some way (this can be minor errors in naming a box, incorrect blobs and crowsfeet on a link, and boxes which should not appear on your diagram – an explanation of how to interpret the information on the feedback window can be obtained by pressing the **Key** button).

The feedback window (Figure 7) has a button labelled **Marker Report** which, when clicked, reveals a small text window containing a report from the automatic marker on a range of issues that it has found during the marking process (see Figure 8).

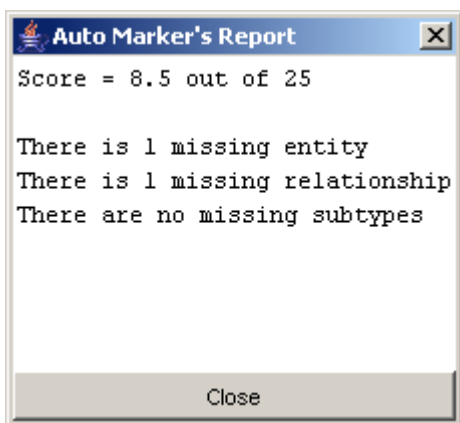


Figure 8 Additional feedback from the feedback window

At any stage you can view the specimen solution by clicking on the button labelled **Show / Hide** (see Figure 9). The solution will appear in the bottom right-hand **Solution Diagram** window as shown in Figure 9.

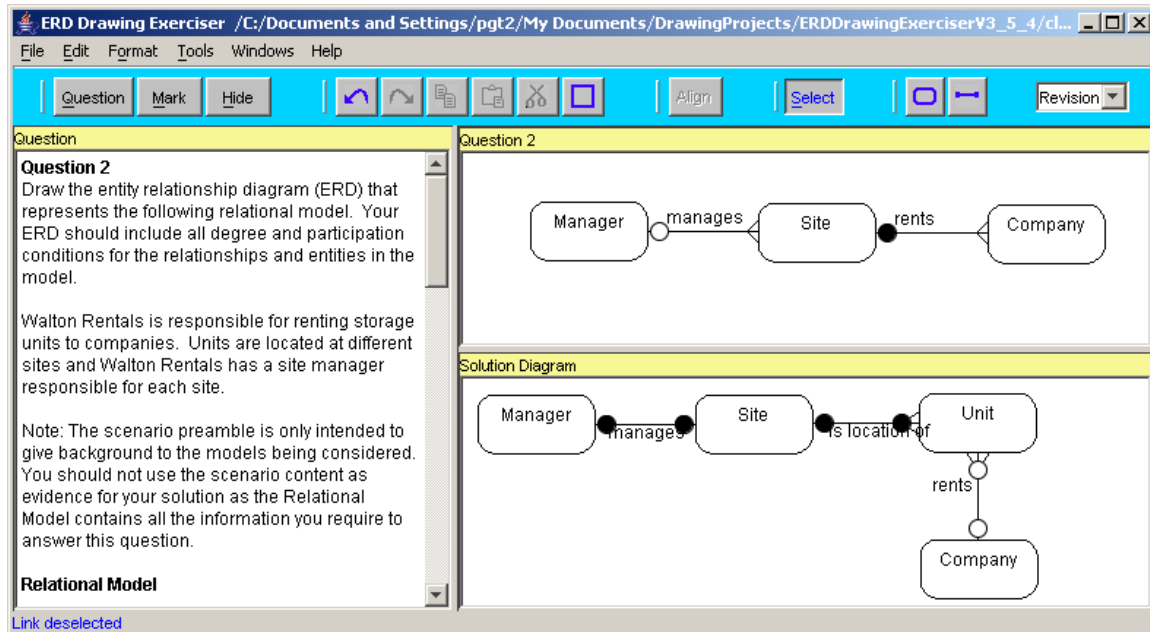


Figure 9 The solution revealed

Additional help is available in the form of explanations of how the specimen solution was arrived at. When you left-click on any of the components in the solution diagram, the relevant part(s) of the question that relate to that component will be highlighted as shown in Figure 10.

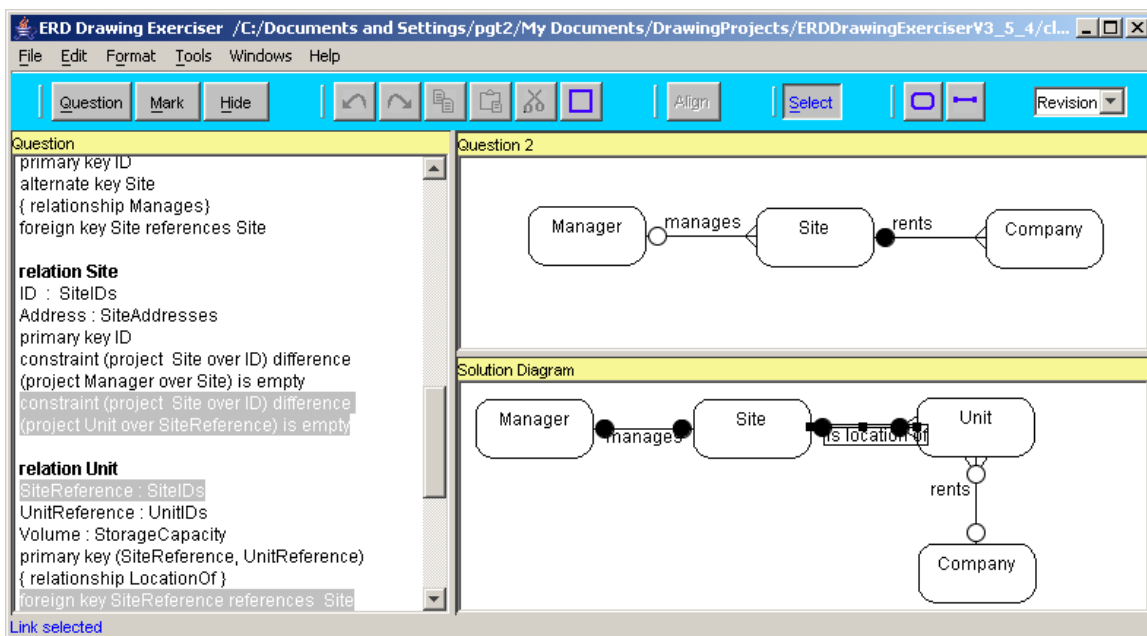


Figure 10 Left click on solution component to see its relationship with the question

Right-clicking on a component will cause a properties window to appear containing an explanation of the derivation of that component (see Figure 11).

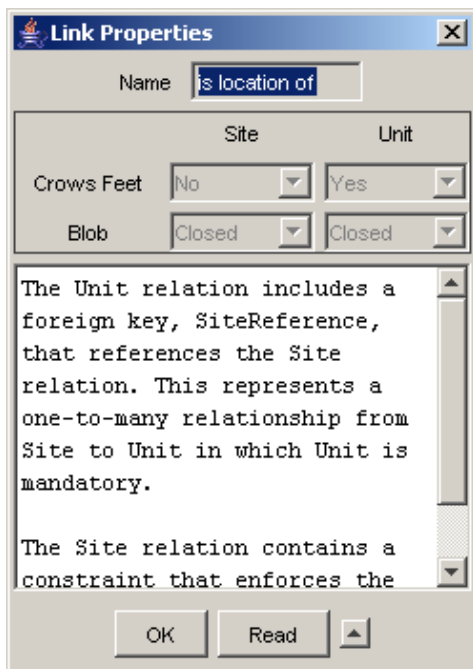


Figure 11 The properties of a link

Pressing the **Read** button (on the link properties window) provides a reading of the meaning of a link. A link can be read in either direction so there are two readings: see Figure 12 for an example.

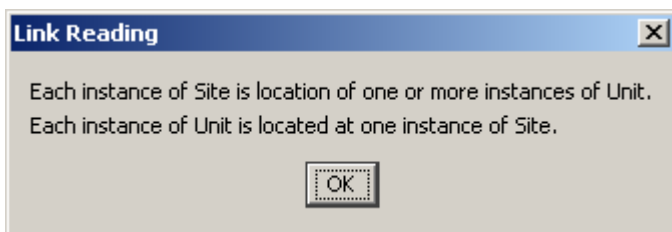


Figure 12 The readings of a link

Keyboard shortcuts

There are numerous keyboard shortcuts. A full list can be obtained by clicking on the **Help** menu. However, a useful shortcut is using the right mouse button. Right-click on a box or link will reveal a small pop-up menu providing quick access to common actions. Right-click on a blank area of the drawing window will reveal another small pop-up menu providing quick access to more common global editing facilities.

Obtaining Help

To obtain help, click on the **Help** menu. This will provide access to a variety of types of help including: how to draw diagrams, how to use the exerciser in revision mode, keyboard shortcuts and tips on how to perform some of the basic editing actions. There is also a searchable index of all terms associated with the Exerciser.

Assistance requested

Whenever you use the Exerciser, it records brief details of whatever you do in a text file named **Report.txt** (saved in the application folder). We would appreciate it if, once you have finished your revision, you would email this file to us at mcs-diagrams@open.ac.uk for analysis to enable us to develop an understanding of problems that students encounter and hence to improve both the tool and the course. There is also a questionnaire (very brief) that we would appreciate receiving. You can find it in the same folder that the Exerciser is stored in.