Question Mark Perception
Getting Started

Version 2, March 1999

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Introduction

How to use this manual

This manual should be used as a tutorial, taking you through each step on how to create your own online tests, surveys, and other assessments. We recommend that you go through this manual in a sequential fashion, skipping over those sections that are unnecessary for your needs.

This is not a comprehensive listing of all functions and features within the Perception application suite. A number of features within the Perception modules are not mentioned. Should you see a control within the software, or require a particular feature that is not mentioned here, we recommend that you consult the reference manuals or Question Mark's websites for more details.

What is the Perception software suite?

The Perception software suite enables users to create their own tests, surveys, questionnaires, and assessments for use via the web or an intranet. Perception is an application that contains both Windows and web-based software. For example, you create tests and surveys within a Windows application, while you analyze the results via web-based reporting.

Perception contains two Windows applications, *Question Manager* and *Session Manager*. *Question Manager* enables users to create their own questions and organize these within hierarchical item banks. *Session Manager* enables the user to then construct tests and surveys around these questions. Both of these Windows applications operate independently of *Perception Server*, the web-based portion of the software suite.

As questions and tests/surveys are created, they are saved within databases. *Perception Server* then accesses these databases and serves out the tests and surveys to authorized individuals over the web or an intranet. *Perception Server* also allows online security management and real-time analysis of respondents' answers to your surveys and tests. These functions are all performed within a web browser.

What will you need?

The Windows components of Perception require a 32-bit Windows operating system (e.g. Windows NT, Windows 95/98). We recommend that you have at least 10MB hard drive space free for these items to operate correctly.

Perception Server is not a webserver program or a piece of hardware. Rather, the software is run by a webserver, in much the same way Windows 95 runs a wordprocessor or spreadsheet. In order to install the web-based server components you will need an ISAPI webserver (e.g. IIS 3.x/4.x) with the Microsoft *Active Server Pages* (ASP) facility installed.

Quick Fact

- ISAPI: The Internet Server API (Application Programmer's Interface) is Microsoft's IIS (Internet Information Server) webserver. ISAPI enables programmers to develop web-based applications that run considerably faster than ordinary CGI (Common Gateway Interface) programs because they are more closely integrated with the webserver. In addition to IIS, some webservers from companies other than Microsoft also support ISAPI.

Important terms we use

Many different types of organizations use Question Mark software. Each type of organization has its own, industry-specific training and assessment terminology. For example, some organizations have "students" while others merely have "employees." To address this and other conflicts of terminology, we have developed several terms that suit many different types of organizations and businesses. All Perception documents, web pages, and other written matter use these terms:

Participant	student, employee, or other types of respondents.
Session	test, survey, quiz, questionnaire, or other assessments.
Topic	item bank, subject, library, category, theme.

Online information & support

We are constantly working to improve Perception and its support documentation. Be sure to visit the Perception support website regularly to see the latest developments:

http://www.questionmark.com/perception/help/	(North American users)
http://www.qmark.com/perception/help/	(All other users)

Additionally, should you have questions (or suggestions) about Perception, please contact your local Question Mark affiliate. We welcome any feedback from customers on how this or other Question Mark products might be improved.

Installing the Windows software

The Windows portion of the software suite should be installed onto a machine that will be used to author questions and sessions.

The Windows modules allow you to create questions, organize them within topics and subtopics, and to create sessions around those items. These components do not require a webserver to be present.

To install the authoring software:

Insert the Perception CD-ROM into the drive.
The CD-ROM should auto-start. If it does not:

- From the **Start** menu choose **Run**
- Type **d:author.exe** and click on the **OK** button. (**d:** or the equivalent drive letter for your CD-ROM drive.)

Follow the on-screen instructions.

Once installed, you should be able to locate the Perception program group within your **Start** menu that includes these two icons:

Installing the web software

This software should be installed onto a machine that is used as a webserver over an intranet or via the web.

The server components present sessions to participants over the web or an intranet, handle security management, and allow online analysis of results. This software is only compatible with ISAPI compliant webserver software, such as Microsoft's *IIS* (*Internet Information Server*) or the *PWS* (*Personal Web Server)*. These components do not require the presence of either *Question Manager* or *Session Manager*.

Traditionally, software is run via executable, or **EXE** files. However, when running a *Perception Server* component (such as *Security Manager*), the file run is not an **EXE,** but a **DLL** file. Although not commonly used to run an application, **DLL**s (dynamic link libraries) can be used for this purpose. The following **DLL** files constitute the user-accessible portions of the server software:

- **perception.dll**
  Used by participants to take sessions via the web or an intranet

- **open.dll**
  Used by participants to take session without security controls

- **security.dll**
  Used to create and schedule permitted participants and sessions

In addition to our use of **DLL** files, *Perception Server* also utilizes Microsoft's *ASP* (*Active Server Pages)* technology for reporting and analysis of answers:

- **index.asp**
  Used to view standard reports and create additional, customized reports

You run these files by pointing a web browser to their location on your webserver. For example, the web address a participant would use to access sessions on our server might be:
http://www.questionmark.com/qm/perception.dll

Or, to view answer results:
http://www.questionmark.com/reporting/index.asp

To install the server software:

Insert the Perception CD-ROM into the drive.
The CD-ROM should auto-start. If it does not:

- From the **Start** menu choose **Run**
- Type **d:author.exe** and click on the **OK** button. (**d:** or the equivalent drive letter for your CD-ROM drive.)

Follow the on-screen instructions.

Additional steps are required to complete *Perception Server*'s installation. Be sure to read the **Server Install Notes** file that is supplied with the software for details on these steps.

Creating Questions

Starting Question Manager

You create questions within *Question Manager*, a Windows application. To start *Question Manager*:

❶ Click on the Windows **Start** button.
❷ Select the **Programs** folder from the menu.
❸ Select the **Perception** folder from within the branching menu.
❹ Launch *Question Manager* by selecting it from within the Perception group.

Entering the author name

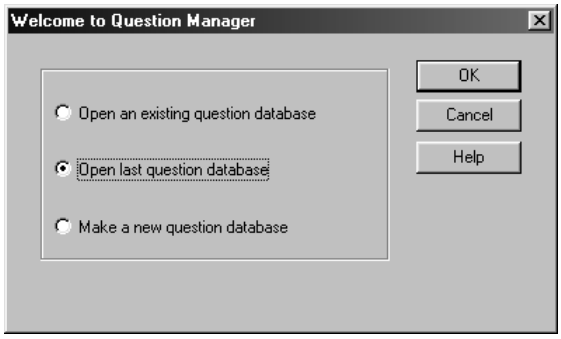
When you first launch *Question Manager* you will need to enter an authoring name. This name is used when creating questions.

As questions are constructed they are placed within categories, or topics. Topics may include questions created by multiple authors. The author's name can be particularly useful in situations where multiple question authors exist, such as in a team environment.

You only need to enter an author name once. As *Question Manager* saves this information, you will no longer be prompted for it when you re-launch the application. The menu option **Tools | Options…** allows you to modify the author name once it has been entered in the above dialog.

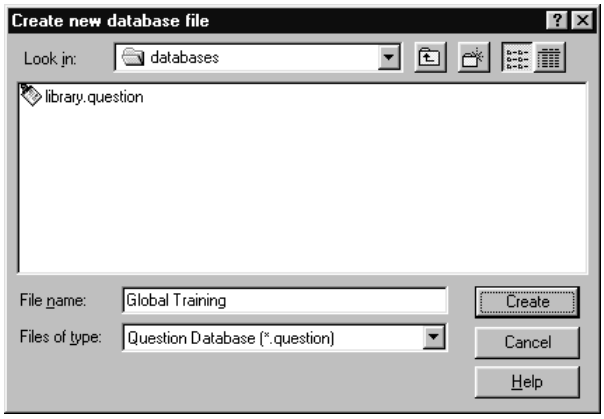
The question database

As you create your questions they are written to a database file. *Perception Server* will also utilize this question database. When you launch *Question Manager*, it will normally



prompt you to select a question database in which to work. Choose to make a new database.

Choose a location for the new database. Like the example below, we recommend that you save your new question database within the **perception\databases** directory.

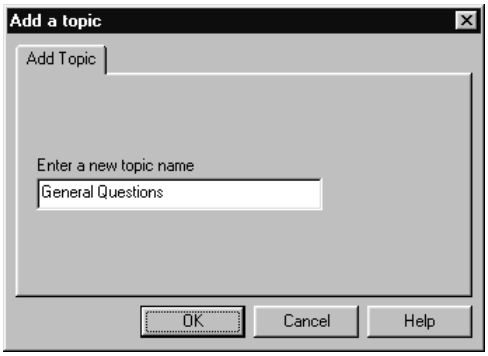


In this instance, we're creating a new question database called **Global Training.question**.

Even though *Question Manager* uses a *Microsoft Access* (**.MDB**) format, the **.question** file suffix is used for all question databases created by Perception.

Creating a topic

Once the new **.question** database file has been saved you will be asked to create your first topic:



Topics are used to organize your questions and will be discussed in length shortly. Additional topics can be created via the **File | Add Topic…** menu option. You can also use the **Add Topic** icon, as shown below:

Topics explained

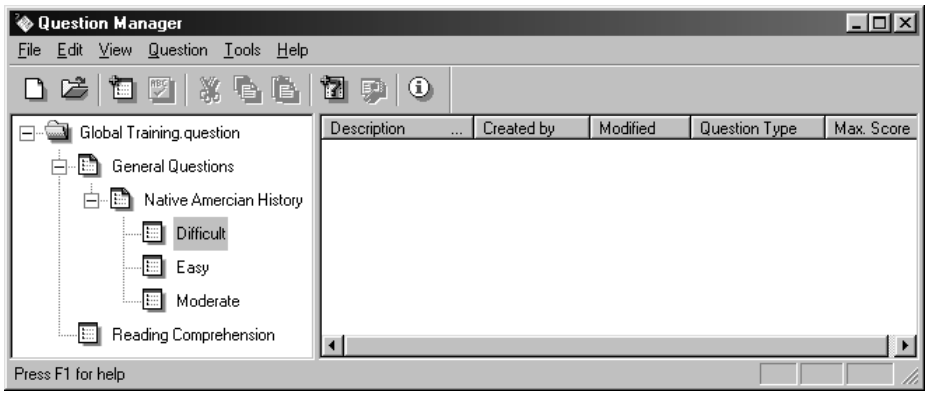
Perception's use of topics is best equated with an item bank. A topic is a group of questions (a.k.a. items) relating to a particular subject, level of difficulty, or some other common trait. Topics work in the same way. For example, you might have a topic for questions relating to sales-ethics, or another topic containing questions about Native American history. As the number of questions you create grows, topics will become increasingly useful for organizing your questions.

Topics can also contain subtopics. The **Native American History** topic might contain questions organized according to difficulty, or time period:

Native American History
- **Easy**
- **Moderate**
- **Difficult**

Native American History
- **Pre-Glacial**
  - **Kamchatka Migration**
  - **South Pacific Migration**
- **Post-Glacial**
- **Colonial**
  - **French Relations**
  - **English Relations**
- **1776-1830**
  - **Sequoyah**
- **Modern Era**

Here is a screen shot showing how subtopics appear within *Question Manager*:



Note that in the above example one subtopic contains three "sub-subtopics." Within the **General Questions** topic a subtopic of **Native American History** exists. Below this sub-topic there exist three sub-subtopics: **Difficult**, **Easy**, and **Moderate**. Using this kind of structure the **Native American History** questions can be separated according to difficulty. All topics and subtopics are listed in alphabetical order.

To add a subtopic

To add a subtopic to another subtopic or topic, do the following:

❶ Highlight the topic, or subtopic where you wish to add a subtopic.
❷ Right-mouse click on the topic/subtopic name and select **Add Topic...**
Or, click on the **Add Topic** *icon on the menu bar.*
Or, select the **File | Add Topic…** *menu option.*

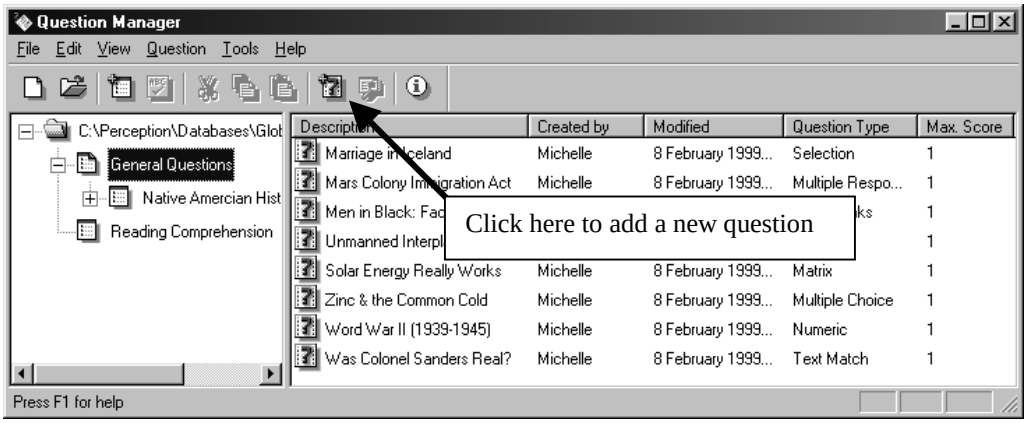
Once done, the subtopic will appear as a separate branch underneath the topic/subtopic.

Quick Facts

- Topic and subtopic names can be up to 200 characters long.
- Branches within a topic can contain a maximum of 10 sub-levels.
- There can exist an almost unlimited number of subtopics within a topic.
- Topics can contain an almost unlimited number of questions.
- An almost unlimited number of topics can be held within a **.question** database.

Creating questions within topics

To begin the process of creating a new question select the topic in which you will be creating the question and then select the **Question | Add Question…** menu option, or click on the **Add Question** menu bar icon:



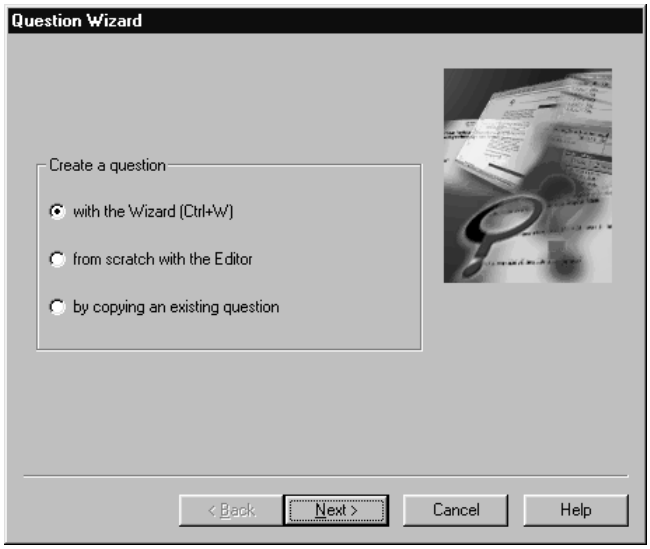
In order to create a question, a topic (or subtopic) must first be highlighted. Questions can only reside within a topic or subtopic. *Question Manager* provides you with two methods for creating a new question:

- The *Question Wizard* enables you to create new questions based upon a number of pre-defined formats (e.g. multiple choice, multiple response, text match, and others).

- Alternatively, you may create any question format directly from within the *Question Editor*.

- There is one other method for creating questions which is **by copying an existing question**. Selecting this option allows you to browse a question database for a question to copy.

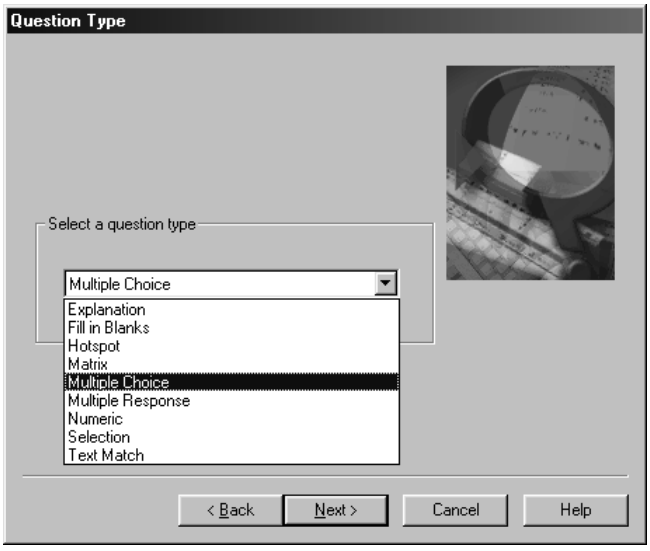
These methods are both accessed via selecting the **Add Question...** menu item, which produces the following dialog:



Select **with the Wizard**, and click the **Next** button.

Using the Question Wizard

The first dialog of the Wizard asks you to select a question format. Select the **Multiple Choice** option from the pull-down menu, and click the **Next** button.



Although Perception is capable of creating any type of question (see the Question Markup Language (QML) section within the *Authoring manual*), the Wizard only has a finite number of question types from which to choose:

- **Explanation**
  Used for information screens, title pages, or to display large bodies of text.

- **Fill in Blanks**
  The participant enters text in to one or more text entry fields.

- **Hotspot**
  The participant places a marker on to an image to indicate the answer.

- **Matrix**
  The participant answers by selecting an answer from a list of two or more choices displayed as radio buttons.

- **Multiple Choice**
  The participant answers by selecting an answer from a list of two or more choices.

- **Multiple Response**
  The participant answers by selecting multiple answers from a list of two or more choices.

- **Numeric**
  The participant enters a number in a text entry field.

- **Selection**
  Participants respond by using pull-down menus, displayed to the side of several items.

- **Text Match**
  The participant enters text in a text entry field to answer a question.

When you use the Wizard to construct a question it is saved within your **.question** database. To modify existing questions use the Editor found within *Question Manager*. Use of the Editor will be addressed later within this manual.

Creating a multiple choice question

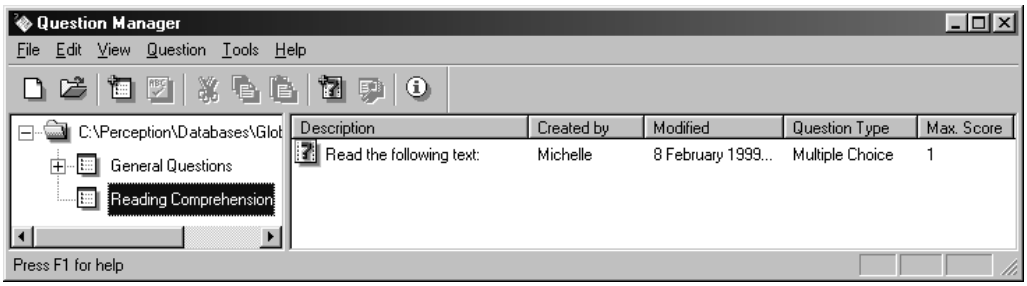
Multiple choice questions are probably the most popular type of question for assessments, especially computer based assessments. Here's an example of a multiple choice question:

Read the following text:

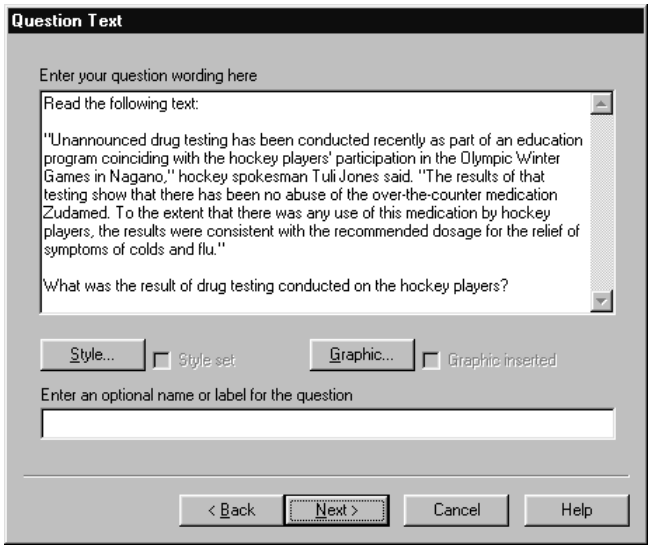
> *"Unannounced drug testing has been conducted recently as part of an education program coinciding with the hockey players' participation in the Olympic Winter Games in Nagano," hockey spokesman Tuli Jones said. "The results of that testing show that there has been no abuse of the over-the-counter medication Zudamed. To the extent that there was any use of this medication by NHL players, the results were consistent with the recommended dosage for the relief of symptoms of colds and flu."*

What was the result of drug testing conducted on the hockey players?

a. *The hockey players were not found to be abusing the drug Zudamed.*
b. *The hockey players were found to be abusing the drug Zudamed.*
c. *The results were inconclusive concerning Zudamed abuse amongst the hockey players.*



This same question text, when entered into Perception's multiple choice *Question Wizard*, would appear something like this:



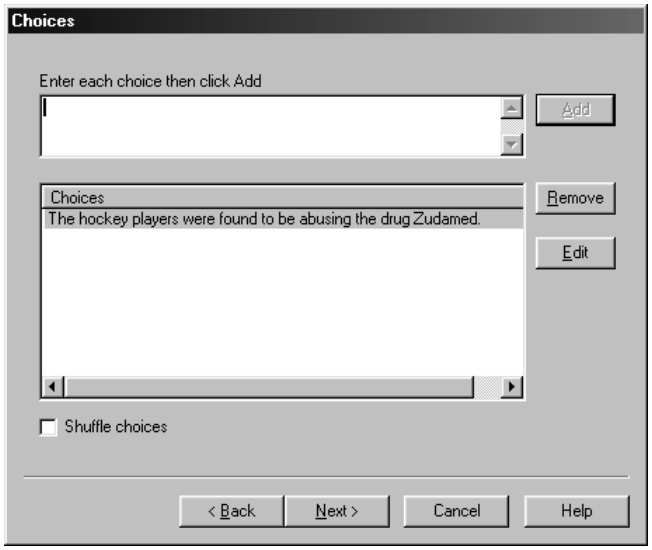
In this screen we're only entering in the stem, or question text. You can also define the text's style (font, color, etc.), along with any graphic supplementing the question. See the *Authoring manual* for more information about styles.

The default description used to label this question within a topic can also be changed. This description is based upon the first 200 characters found within the question's stem. For example, the default description for this question would appear like this within *Question Manager*:

You can always change a question's description text by double-clicking on a completed question, as shown above. As there may be more than one question within the *Reading Comprehension* topic that begins with **Read the following text:** it might be useful to alter the default description. A description along the lines of **Drug-testing Hockey Players** would make the item easier to identify.

Entering the question's choices

Each choice must be entered for the question. You can only create multiple choice questions that have one or more choices. When you have added one or more choices you may then proceed to the next step, scoring the choices.



Notice how the use of identifiers (e.g. A, B, C, etc.) for the choices is eliminated. Although used in paper-based testing for correction and tracking purposes, these are no longer needed within Perception as these tasks are handled automatically.

Here's how to add a choice using the above dialog:

❶ Enter the choice's text.
❷ Click on the **Add** button.
❸ The choice will appear in the listing of choices.
❹ When all choices have been entered click on the **Next** button.

When you toggle the **Shuffle choices** option, the order in which the choices appear when presented to participants will be randomized, for each individual participant.

You can select the **Edit** button to edit a choice after it has been added. Or equally, you can double-click a choice

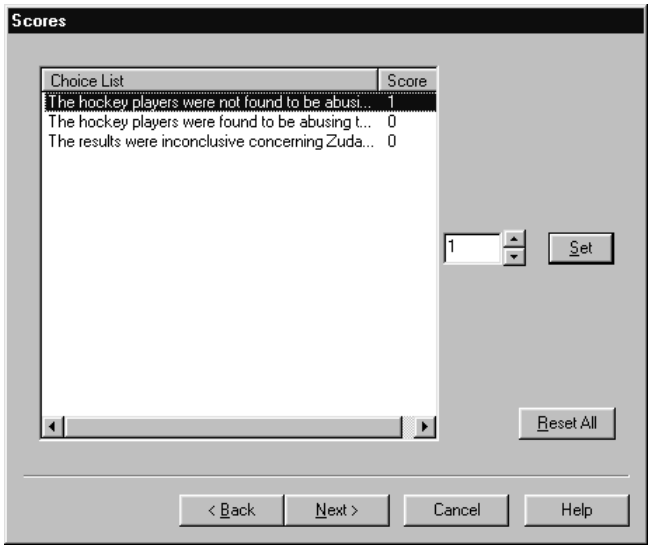
Scoring the question

When a participant answers a test question and the response is marked, a score is arrived at. For example, in a paper-based question:

Which city is the capital of Germany?

a. München
b. Bonn
c. Roma
d. Berlin
e. Tyre

If the answer were *d*, then a score of 1 would be awarded. If a participant answers *b*, then a score of 0 is produced. When you construct a multiple choice question within Perception you assign the same type of scores to each of the possible answers. The values you assign to each choice are used by Perception when analyzing a participant's response.



In the case of multiple choice assessment questions, usually only one choice will have a score other than zero. For example, in our drug-testing question, only the correct choice is scored (with a value of 1):

To change the score of a choice from within the Wizard:

❶ Select the choice.
❷ Enter the new score.
❸ Click on the **Set** button.
❹ When all scores have been set click the **Next** button.

Defining unique feedback

"Feedback" is a term used to denote any text, graphic, or other message given to a participant in response to an answer they provided to a question. Perception allows you to define unique feedback for each choice within a question. For example, our question about the German capital might provide this type of unique feedback for each choice:

Which city is the capital of Germany?

München

- **FEEDBACK:** *"Incorrect. This is a city located in Western Germany."*

Bonn

- **FEEDBACK:** *"Incorrect. This is the former capital of West Germany."*

Roma

- **FEEDBACK:** *"Incorrect. This is the capital city of Italy."*

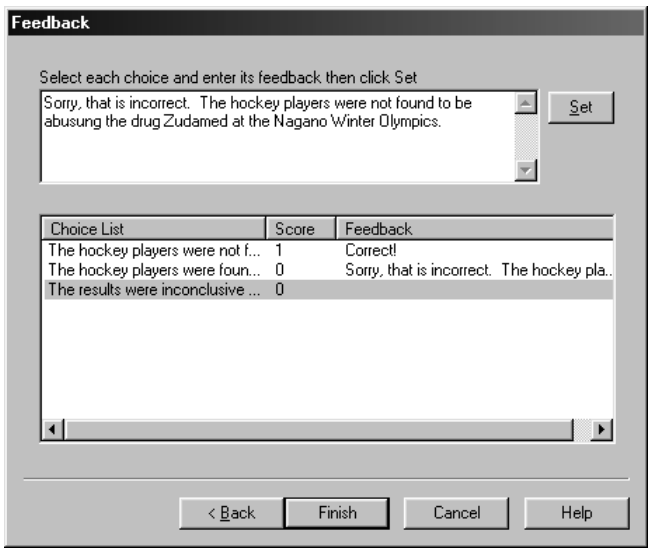
Berlin

- **FEEDBACK:** *"Correct. This is the capital city of Germany."*

Tyre

- **FEEDBACK:** *"Incorrect. This is a city located in Southern Lebanon."*

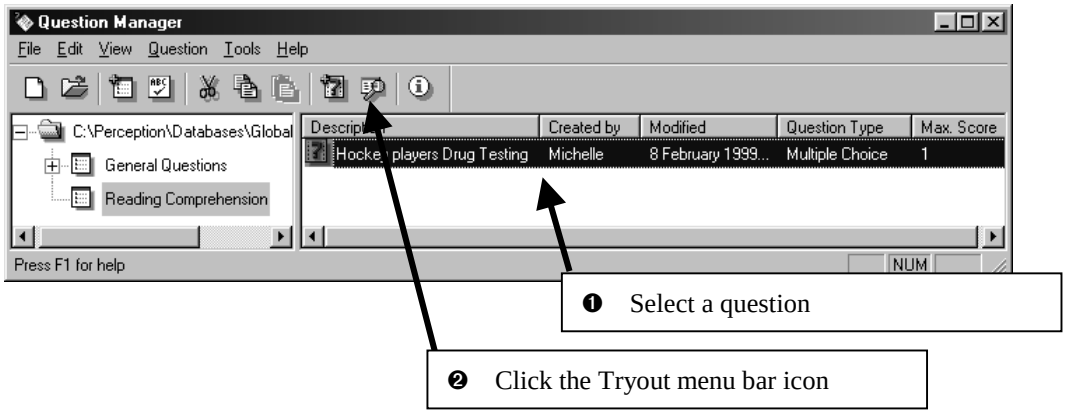
Relating the concept of unique feedback to our original hockey player question, the last Wizard screen allows you to set unique feedback messages for each choice:



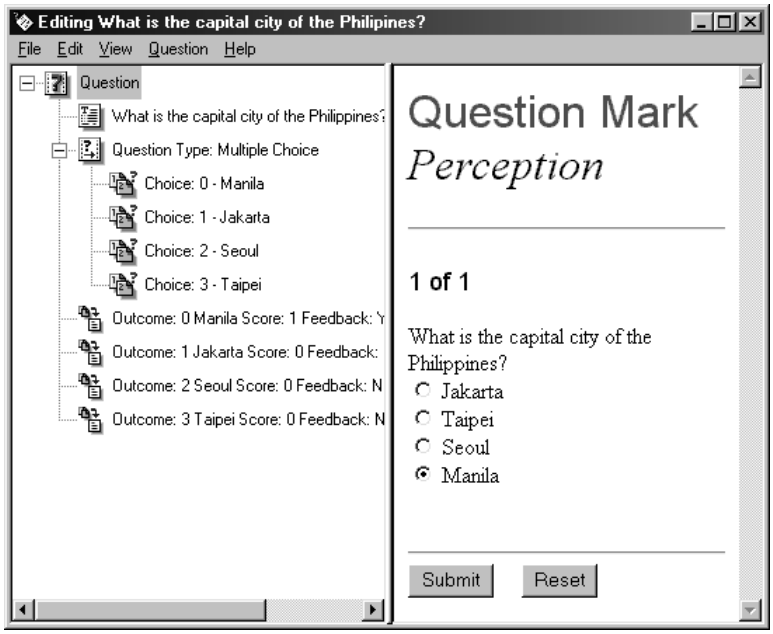
When you have set all of the choices' feedback text, click on the **Finish** button. This will save the question within the **.question** database and return you to *Question Manager*.

Trying out a question

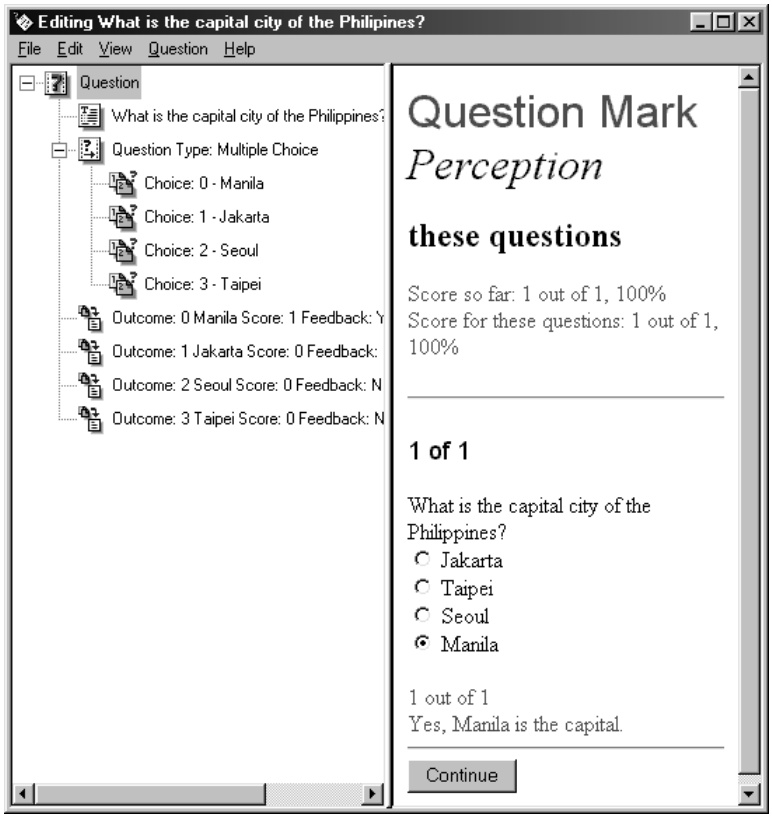
Questions within a topic can be individually tried out within the Editor or multiple questions can be tried out from within *Question Manager*:



If you have Internet Explorer 4 or higher installed then you can also set the Editor to a WYSIWYG style by enabling the menu item **View | Enable Browser View**. The screen shot below shows the question on the left and what it will look like in a web browser.



The question can be fully tried out by clicking the **Submit** button. Any feedback or scores will be then be displayed as shown below:



Without Internet Explorer 4 or higher the question will be displayed in the default browser but can not be tried out.

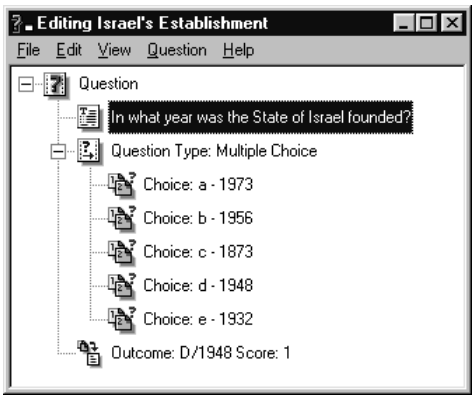
The Question Editor

In addition to using the Wizard to create questions, you can also use the Question Editor. For example, the below multiple choice question would appear like this within the Editor:

In what year was the State of Israel founded?

a. 1973
b. 1956
c. 1873
d. 1948
e. 1932

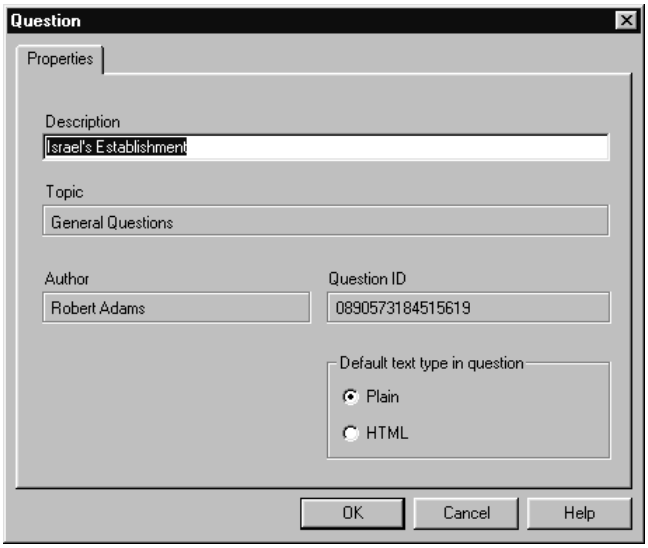
In the below screen shot each part of the question is represented by a separate element:



What follows is a brief description of these elements accompanied by additional screenshots of their respective control dialogs:

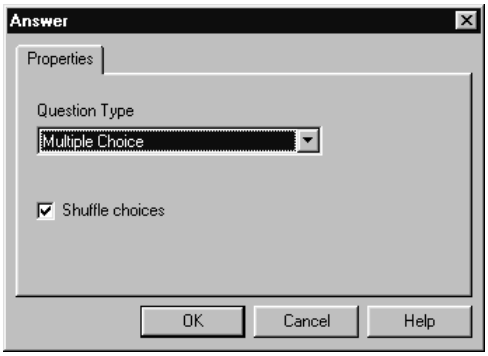
Question element

The very first element of a question contains general information, such as a question ID, topic location, question description text, author's name, and what text elements should default to when created (plain text or HTML).



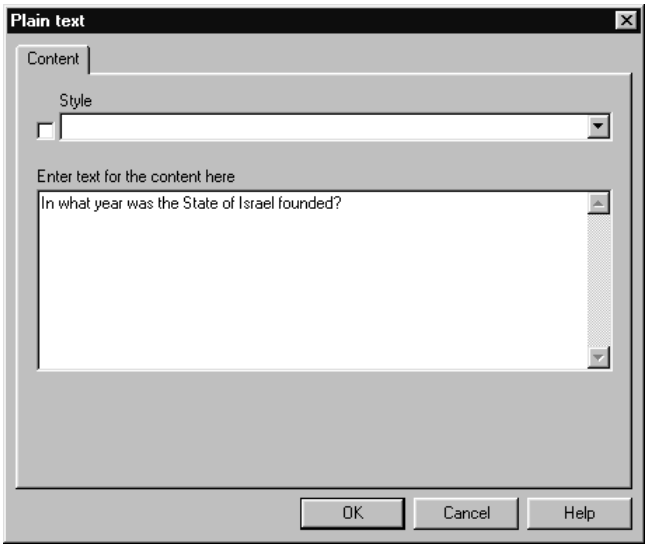
Question type element

This element identifies the manner in which a participant responds to a question and whether or not the choices are shuffled when presented to participants.



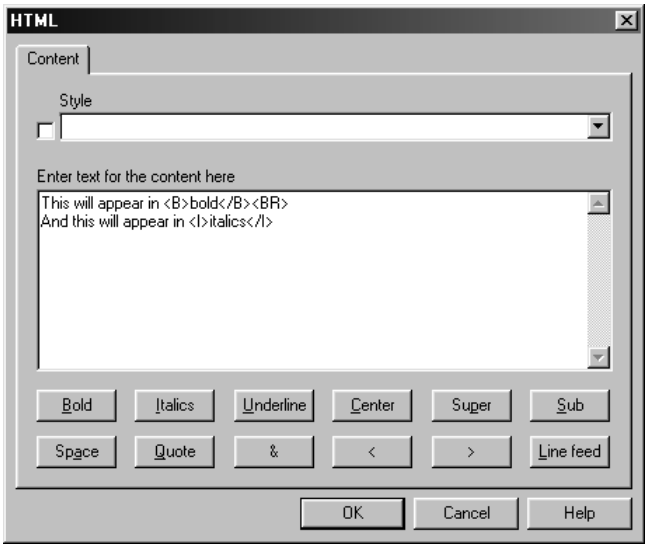
Plain text element

Questions may contain multiple elements of text, perhaps housing the stem of a question or supplementary text. Additionally, a set of font attributes (style, color, size, etc.), a pre-defined style, can be applied to the contents of a text element.



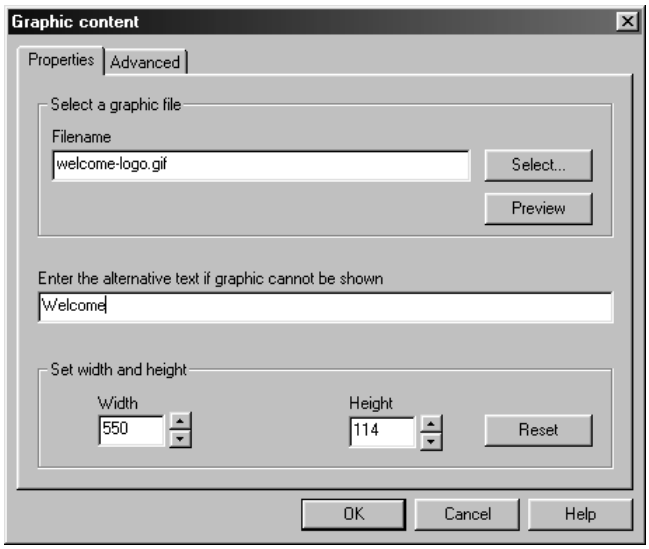
HTML element

Questions may also contain HTML. When the text has been entered any word or words may then be highlighted and an HTML code applied.



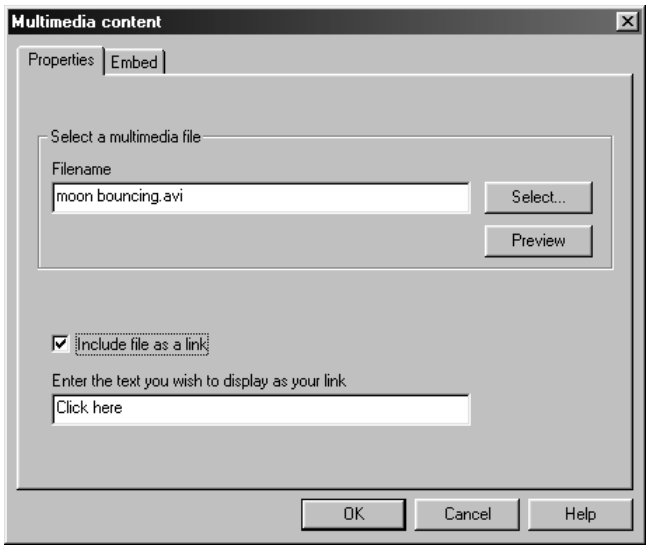
Graphical element

Questions may also contain graphical content. Web browsers support various graphical attributes (e.g. width and height of the graphic), which may be set within *Question Manager*.



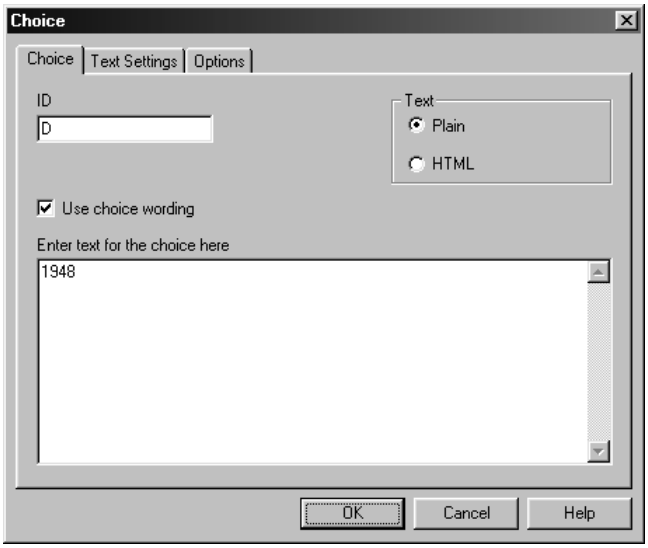
Multimedia element

Similarly, multimedia is supported. A multimedia object may be inserted as a link, where some text is clicked to reach the object, or it may be embedded in to the web page directly.



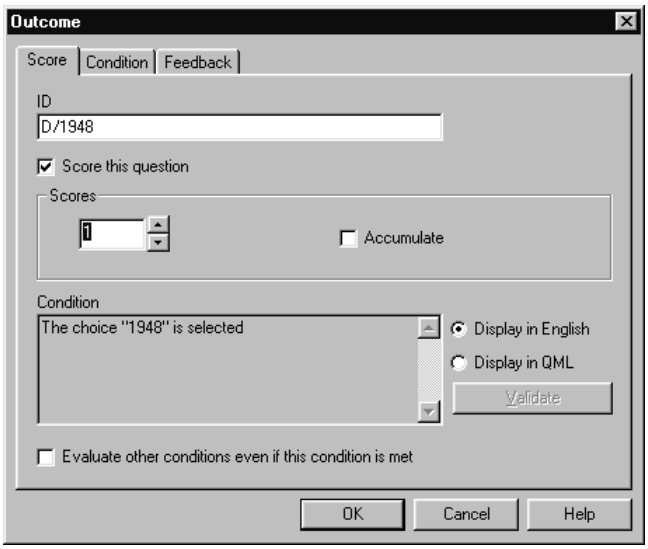
Choice element

Each choice is assigned an ID and accompanying text. The choice's text may either be plain text or handled as HTML. The **Text Settings** and **Options** tabs are relevant to question types other than multiple choice and are discussed in the *Authoring manual*.



Outcome Block

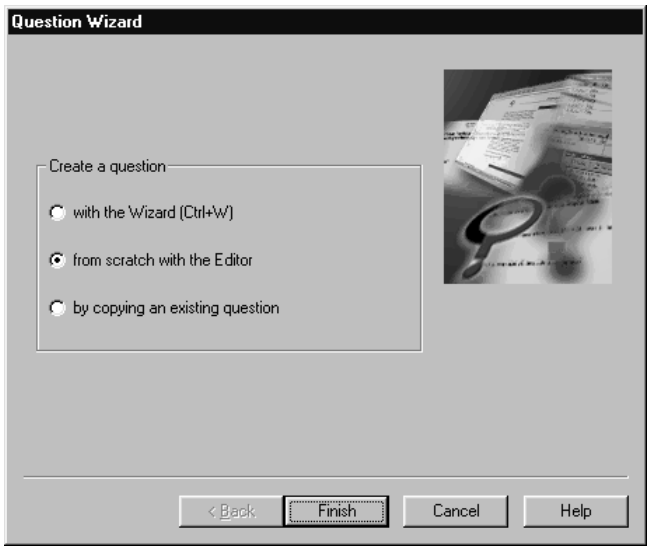
Outcome elements determine what type of score and feedback is received in response to a participant's selection to a choice. It is also possible to define a series of conditions and then assign a corresponding score and feedback message in plain text or HTML.



Creating questions with the Editor

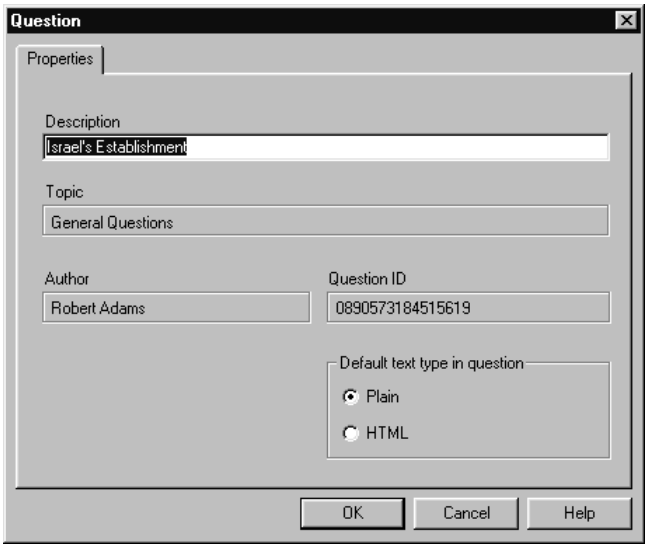
The *Question Editor* offers a more powerful way of creating questions over the *Question Wizard*. Such things as additional text elements, graphics, additional HTML elements, and sophisticated outcomes are only possible via the Editor. Becoming familiar with the Editor is a necessity for anyone desiring greater control over their questions.

The Editor is activated either by double-clicking on an existing question, by right-mouse clicking over a question and selecting **Edit** from the resulting menu, or by starting the Wizard and selecting **from scratch with the Editor** option:



To activate the Editor click on the **Finish** button.

Before you reach the Editor itself your new question is automatically assigned a unique **Question ID**. A description text for the question must be entered:



A question's ID and description is significant in that all participant responses to that question will be recorded within the answer database by these ID tags, that may then be displayed when constructing analysis reports. Although you cannot alter the question's ID via the Editor, the description can be modified at any time by clicking on the question description text from within a topic.

Although the initial question element contains mostly rudimentary, identifying information about the question, it also contains a toggle control for the question's elements. The option you select under **Default text type in question** refers to which mode your choices and content, including feedback, will be created in either plain text or HTML coded text. It is possible to override an individual choice or content element to either mode directly, independent of this particular setting.

The steps described above are necessary for all questions created within the Editor.

Creating a multiple response question

Multiple response questions are commonly used for questions that concern more than one factor. For example, identifying preferred foods or beverages (in a survey), or maybe a question asking, which individuals were present at the signing of the *U.S. Declaration of Independence*.

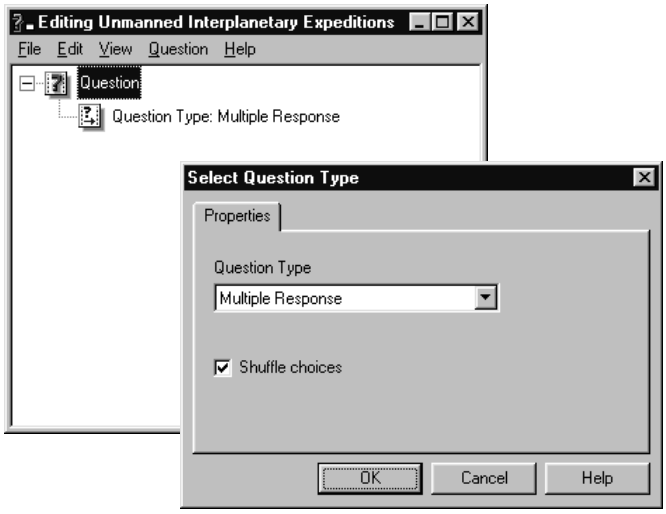
Here's an example multiple response question that we will be using:

Below is a listing of planets and moons within our solar system.
Upon which of these bodies have unmanned exploration vehicles landed?

Mercury	*Deimos*
Venus	*Jupiter*
Earth's Moon	*Europa*
Mars	*Saturn*
Phobos	*Uranus*

Once you have gone through the steps necessary to create a new question and have entered a description (see preceding section), you will need to define the manner in which participants will answer the question, or rather, define the question type:

❶ Within the *Question Editor* select **Question | Question Type…**
❷ From the resulting dialog use the pull-down menu to select **Multiple Response**.

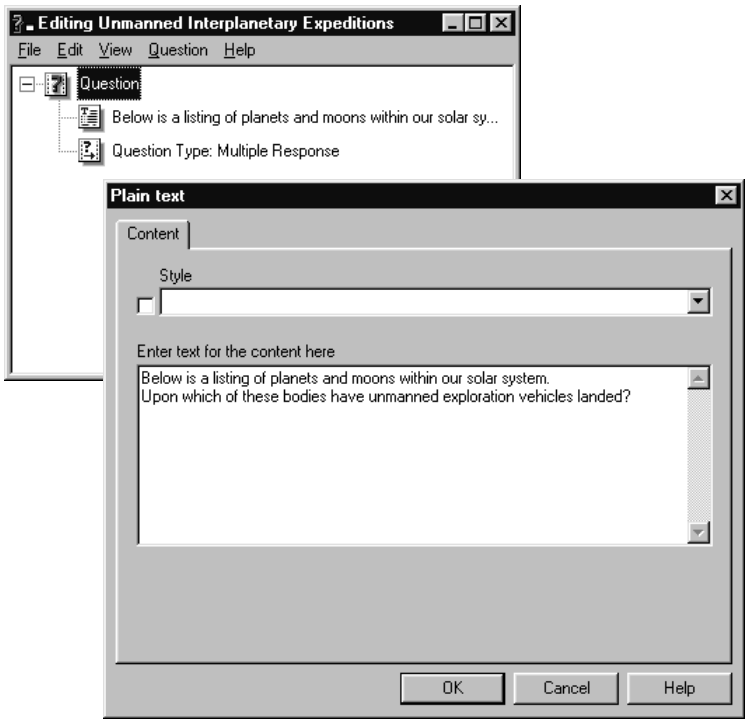


Around the format of the multiple response question type we will need to insert the question text itself along with the choices. To enter the question text you can either use a simple, plain text element or an HTML element. Below we show you how to insert either type of element:

Text element

❶ To insert the question text using a plain text element, choose the **Question** menu bar option and then the **Add Content | Plain Text...** options from the menu.

❷ Within the resulting dialog enter the text to the question:

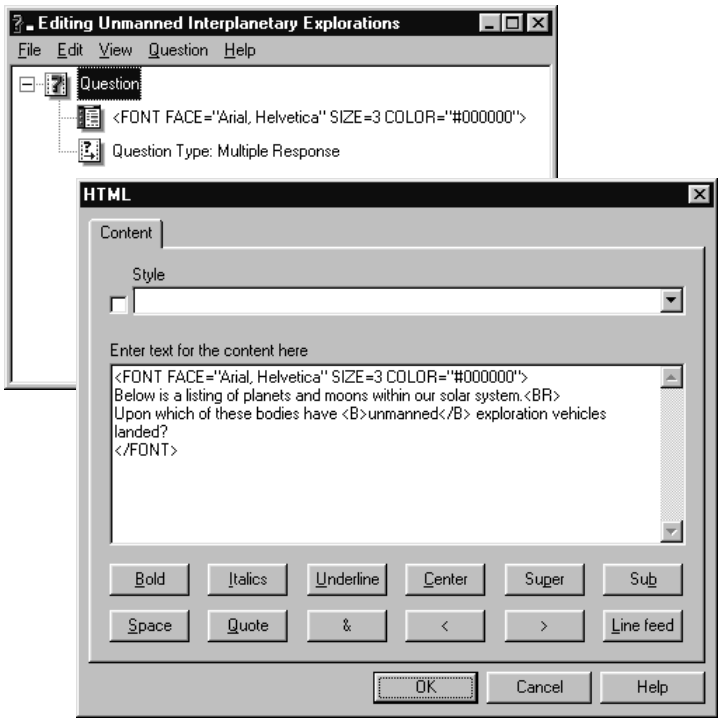


HTML element

❶ So that the question text precedes the choices, highlight the initial element within the question. This is the very first element listed within the question and is always labeled **Question**.

❷ To insert the question text using an HTML element, choose the **Question** menu bar option and then the **Add Content | HTML…** option from the menu.

❸ Within the resulting dialog enter the text to the question along with any HTML conventions:

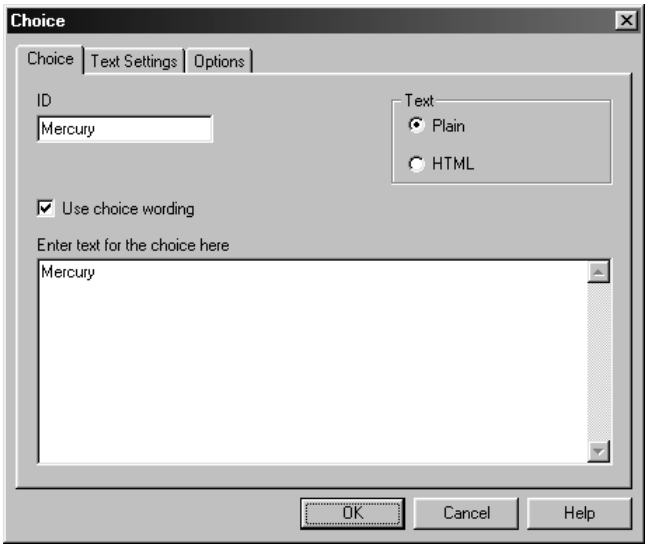


Although we provide a number of more common HTML tags available as buttons within the HTML dialog, you are free to include the latest conventions of HTML or JavaScript within Perception's HTML elements.

Entering the question's choices

The text for the question's choices must now be entered. There is no meaningful limit to the number of choices you may have in a question. To add choices to a question:

❶ Select **Question | Add Choice…**

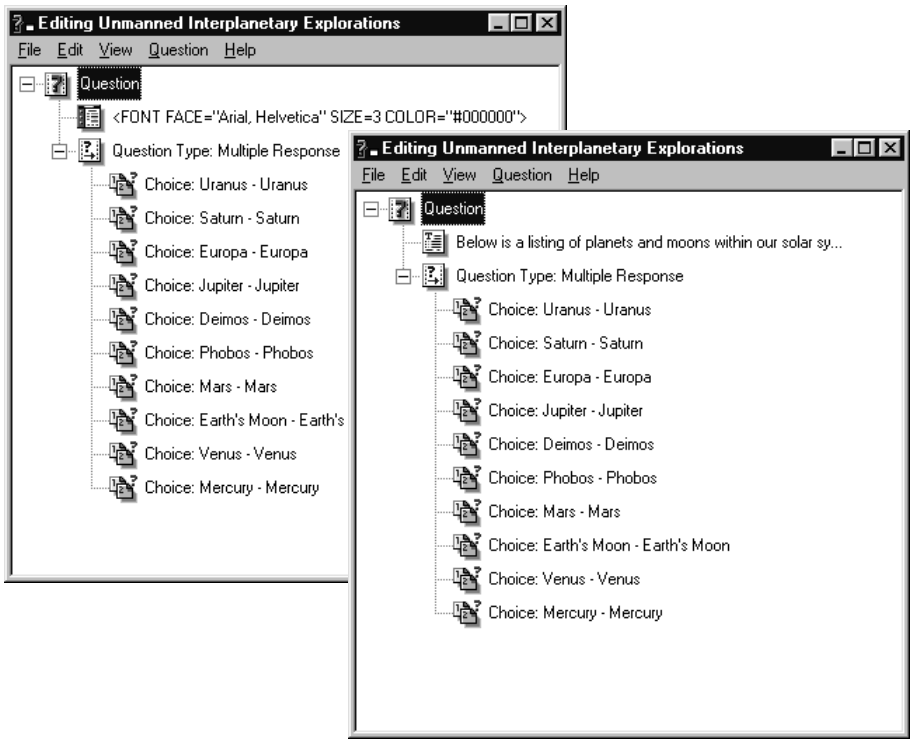


❷ Enter a unique ID for each choice.
This ID will be used later within the outcome portion of the question.

❸ Enter text for the choice (e.g. Mercury).

❹ Repeat these steps for each choice.

Once you have entered all the choices, your question within the Editor should look something like one of these:

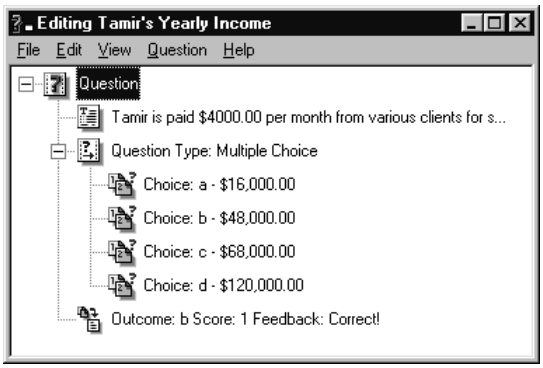


The concept of outcomes

Outcomes are a facility within a question that enable you to attach scores or provide unique feedback messages (e.g. “That is incorrect because…”) to particular responses to a question.

When constructing outcomes you first need to determine which responses you want to trap. For example, consider this multiple choice question:

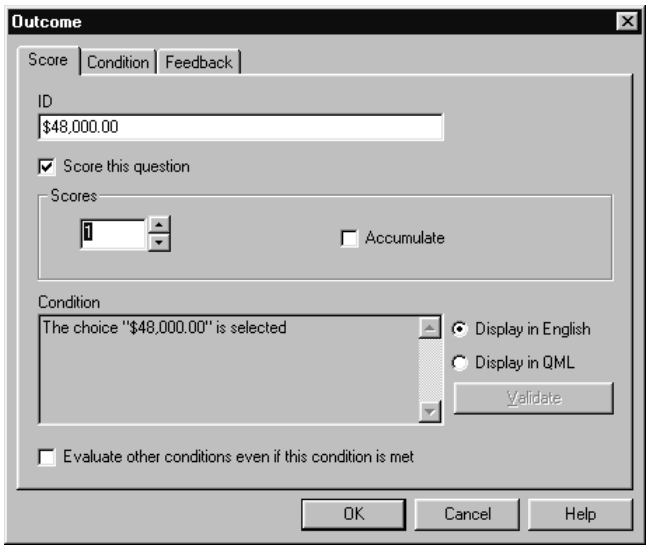
> *Tamir is paid $4000.00 per month from various clients for services rendered. What is Tamir’s yearly income?*
>
> ***a.*** *$16,000.00*
> ***b.*** *$48,000.00*
> ***c.*** *$68,000.00*
> ***d.*** *$120,000.00*



In this instance we would want to trap the response **$48,000.00** so that we might award a score of 1 to the participant, should they select that particular choice. Stated more succinctly, the condition would be:

> *If a participant selects, “$48,000.00”, then award a score of 1.*

The condition would appear something like this within the **Outcome** dialog:



An outcome for each response

Multiple choice questions generally have two outcomes. The first is for trapping the correct response and the second is for all **OTHER** possible responses. In cases where penalty scores are desired (e.g. *What is the sum of 2+2?* Response: 5 Score = -1), or when unique feedback is provided for responses other than the correct answer, other outcomes will be necessary. For example, consider this multiple choice question:

Which country is located in Africa?

Syria
Benin
Nepal
Oman
Canada

If we wanted to provide unique feedback to each possible response, the outcomes would be summed up as statements like this:

If participant selects **Syria**, then…
- Score = **0**
- Feedback Message: **Incorrect. Syria is located in the Middle East region of Asia.**

If participant selects **Benin**, then…
- Score = **1**
- Feedback Message: **Correct. Benin is located in West Africa, on the Gold Coast.**

If participant selects **Nepal**, then…
- Score = **0**
- Feedback Message: **Incorrect. Nepal is located in Asia, near India and China.**

If participant selects **Oman**, then…
- Score = **0**
- Feedback Message: **Incorrect. Oman is located in the Middle East region of Asia.**

If participant selects **Canada**, then…
- Score = **-1**
- Feedback Message: **Incorrect. Canada is located in North America.**

Constructing outcomes

Consider our earlier multiple response question:

Below is a listing of planets and moons within our solar system.
Upon which of these bodies have unmanned exploration vehicles landed?

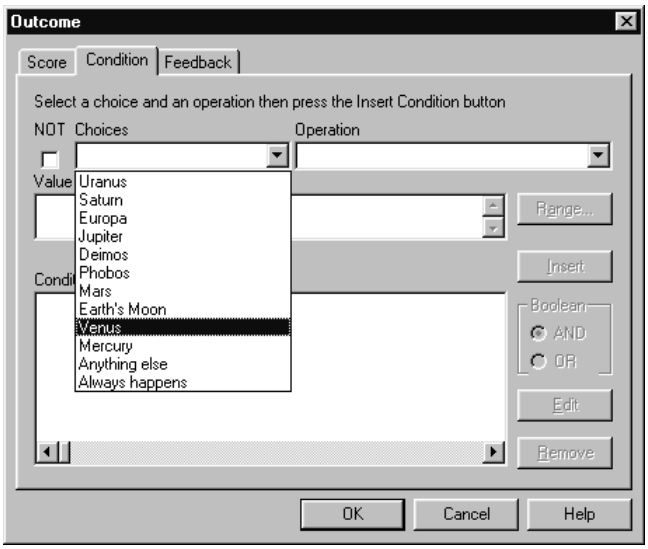
Mercury (0)	*Deimos (0)*
Venus (1)	*Jupiter (0)*
Earth's Moon (1)	*Europa (0)*
Mars (1)	*Saturn (0)*
Phobos (0)	*Uranus (0)*

The correct choices (at the time of writing) are denoted by the presence of a **1** to the right of the name, while incorrect items have a **0** to the right. For each correct response a score of 1

will be awarded, while each incorrect response selected will generate a score of 0. For example, if a participant chooses Mars, Saturn, and Venus a score of 2 would be generated.

For this particular question we will trap only those responses which are awarded a score of one. We will not provide feedback for incorrect responses, nor will we be using any penalty scores (e.g. -1). So, choices that are worth a score of 0 will be ignored by the outcomes we construct. To create an outcome:

❶ Open the previously constructed multiple response question within the Editor.
❷ From the menu bar, select **Question | Add Outcome...**
❸ Click on the **Condition** tab of the dialog.



Every outcome contains a condition. The condition you define traps a participant's response and activates the outcome. A condition is made up of at least two components:

a selection of one or more choices + **an operation**

Example: *Venus* + *The choice is selected*

When a condition traps a participant's response to a question an outcome is triggered. To this condition we could attach a score and/or feedback text. The score might be 1 point and the feedback message might be "Correct answer."

If this condition occurs…
Venus + The choice is selected

Then this outcome is generated…
- Score = **1**
- Feedback Message: **Correct answer.**

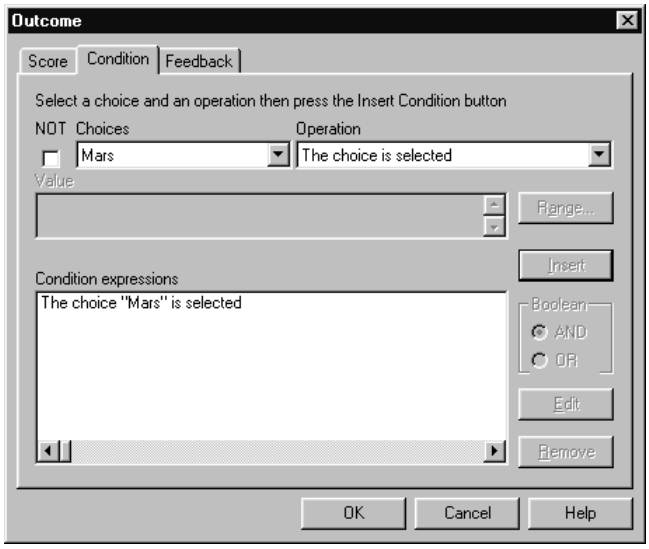
Given the above, we would need to construct an outcome for each correct choice (i.e. Mars, Earth's Moon, and Venus). However, since we can only specify whole numbers as outcome scores, this would mean a total score of 3 points for this question. Even if we could specify fractional scores, it would be difficult to distribute 1 point equally amongst the three correct choices. A solution to this problem is to award a score of 1 should *all* three correct choices be selected.

If this condition…
(Mars AND Earth's Moon AND Venus) + The choice is selected

Then this outcome…
- Score = **1**
- Feedback Message: **Correct answer.**

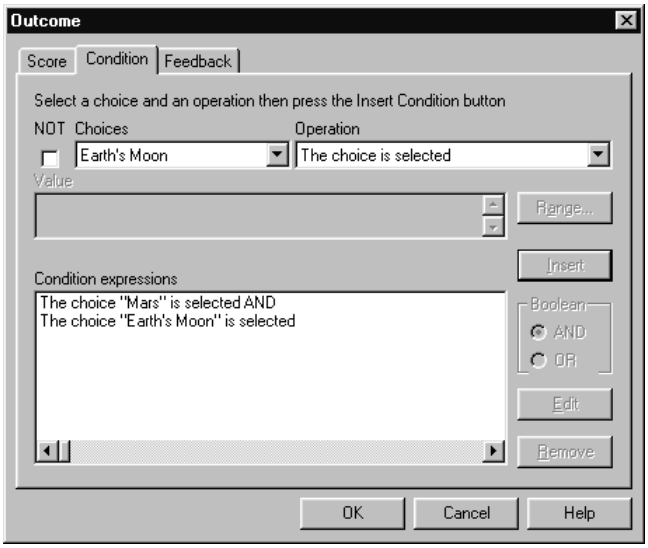
Follow these steps to create the above outcome for our multiple response question:

❶ Open the previously constructed multiple response question within the Editor.
❷ From the menu bar, select **Question | Add Outcome…**
❸ Click on the **Condition** tab of the dialog.
❹ From the **Choices** pull-down menu select the **Mars** choice.
❺ From the **Operation** pull-down menu select the **The choice is selected** option.
❻ Click the **Insert** button, which will result in the dialog shown below:

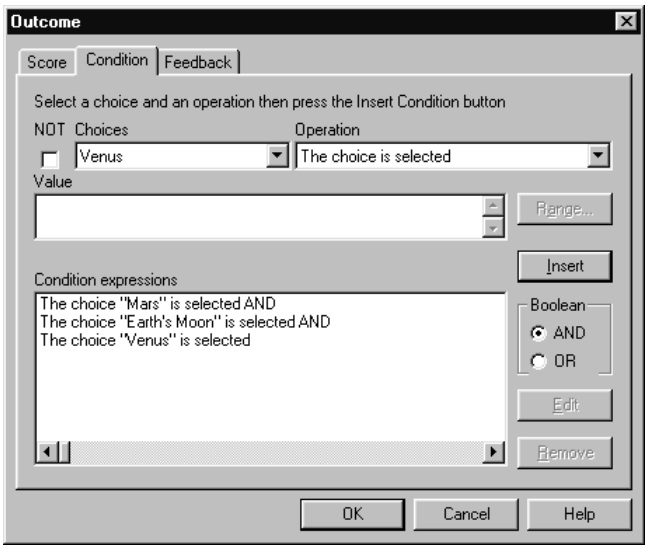


❼ From the **Choices** pull-down menu select the **Earth's Moon** choice.

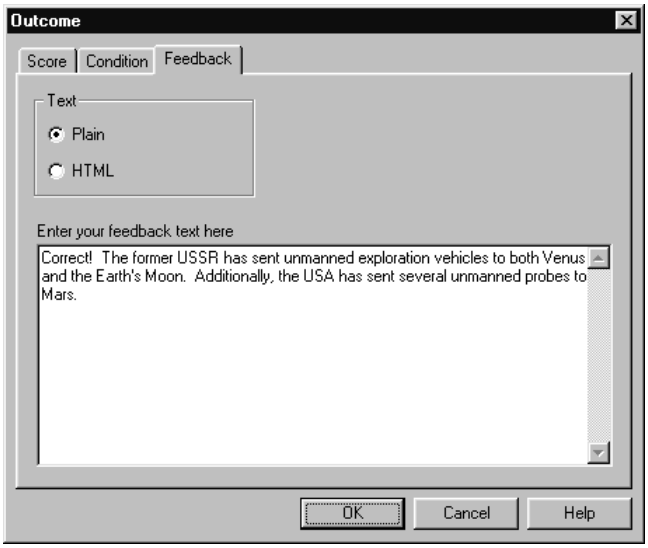
❽ From the **Operation** pull-down menu select the **The choice is selected** option.
❾ Make sure that the **Boolean** operator is toggled to **AND**.
❿ Click the **Insert** button, resulting in a dialog such as below:



Repeat these steps for the last correct choice (i.e. **Venus**). When you are done the outcome's dialog should look like this:

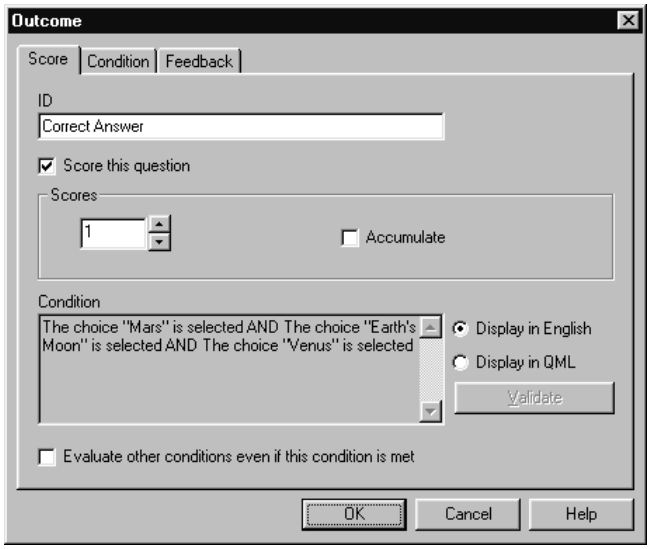


Now that the full condition has been defined you will also need to define the score and feedback. By clicking on the **Feedback** tab a message can be defined for the participant should they select the three correct choices:

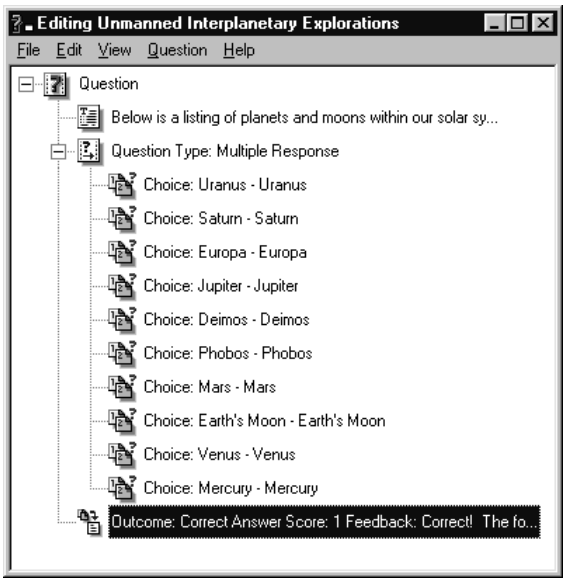


You should also set a score and outcome ID. To do this click on the **Score** tab.

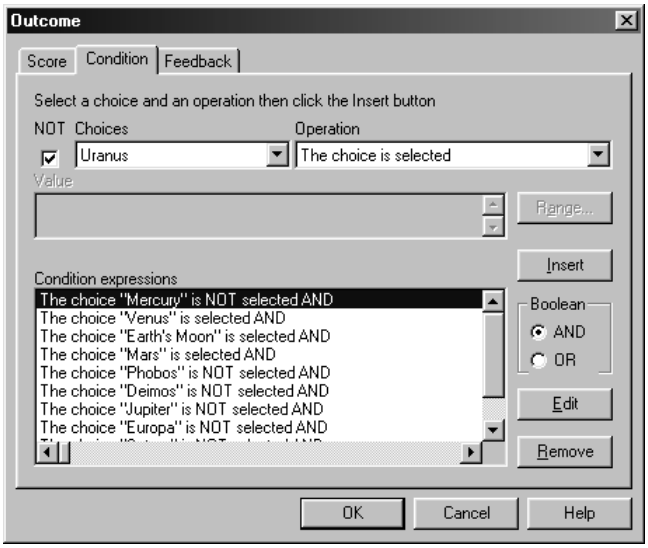
❶ Enter an outcome ID (e.g. "Correct Answer") in the field provided.
❷ Click the **Score this question** option.
❸ Enter a whole number score into the score field by using the keyboard or spin control.



Once you have defined a score and an outcome ID click the **OK** button, resulting in the below dialog within the Editor:



In the above example, there is nothing preventing a participant selecting all the choices and then getting the correct answer. To prevent this from happening then the outcome must be developed further by indicating the other choices are not selected. This is achieved by following the steps described above, however, **NOT** must be selected in each case. So that the final dialog would look like this:



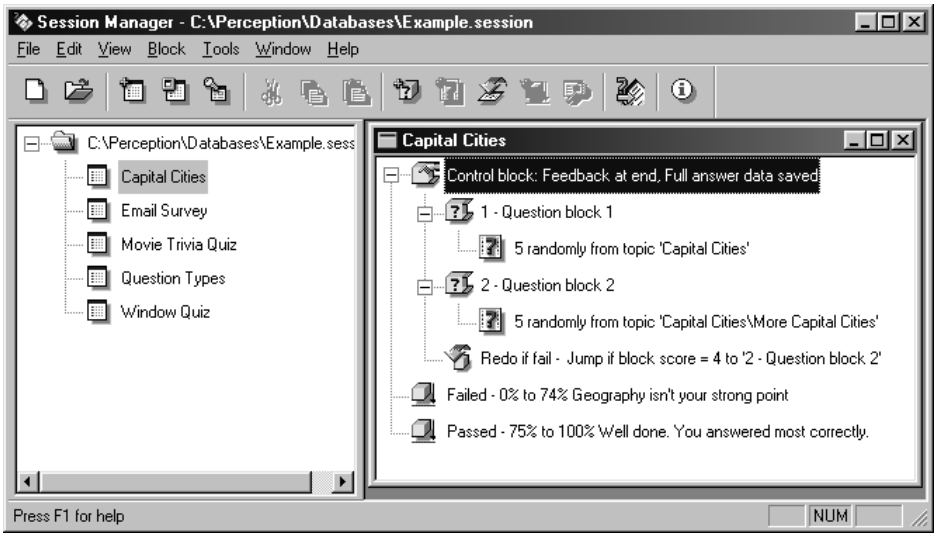
Want to know more?

This manual merely offers a primer about how to create questions. The methods discussed here are basic. Using Perception's full range of features, any type of question format is possible, including the use of JavaScript and Java etc. See the *Authoring manual* for more information.

Creating Sessions

Understanding sessions

Our use of the word "session" is meant to encompass tests, quizzes, surveys, and any other type of assessment or questionnaire. While you create questions within *Question Manager*, sessions are constructed within *Session Manager*. *Session Manager* allows you to grab a number of different questions from various topics, individually, all within a topic, or randomly. A session can only reference questions held within one **.question** database. Sessions are saved in an *MS Access* database (**.MDB**), but with the special **.session** file suffix.



Sessions are stored individually within the **.session** database, and are displayed as separate items within *Session Manager*. For example, in the above screen shot there are five (5) sessions stored, of which the **Capital Cities** session is being displayed in detail.

Sessions may contain the following items:

Control Block

Contains settings for the entire session, such as a time limit, whether or not feedback messages for questions are displayed, and at which point within the session these messages are presented to the participant.

Question Blocks

Question blocks contain individual blocks that select questions from topics. Questions can be grabbed from a topic in one of three fashions: a **Single question**, **Randomly**, or **All**.

Jumps

Logical branching within a session is accomplished by means of jump blocks. Jumping to the end of a session, or to particular question block is determined either by an outcome's condition being met, the score achieved within the session thus far, or the score for the question block directly preceding the jump itself.

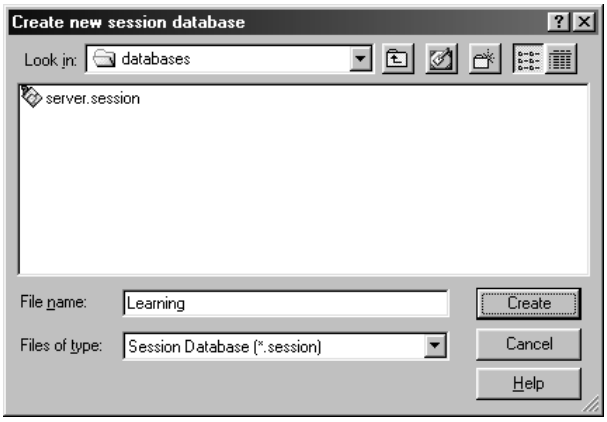
Score band(s)

Score bands allow you to supply participants with unique feedback messages according to their session score at the end of a session.

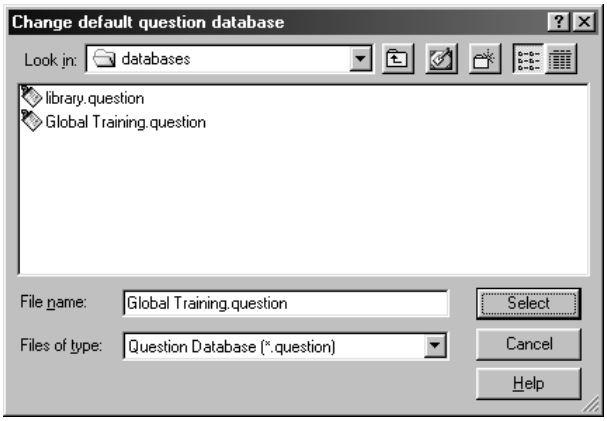
Creating a session

Before creating a session you will need to create a new **.session** database in which to house the session:

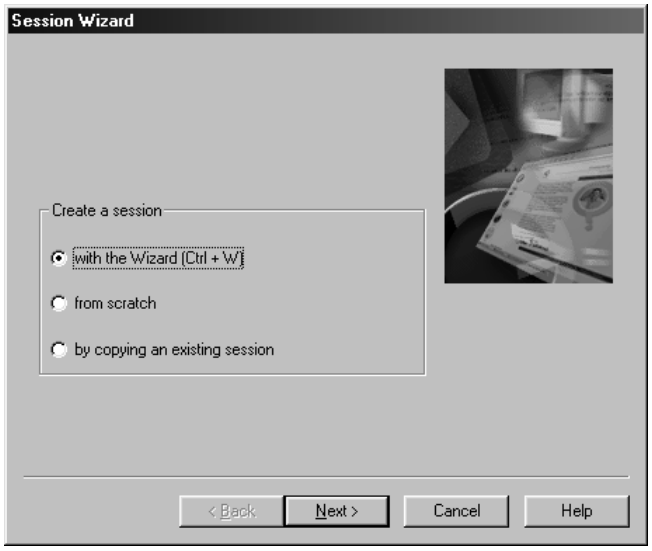
❶ Start *Session Manager*.
❷ Select **File | New Database…**
❸ Within the resulting dialog enter the name of this database (e.g. "Learning") and click **Create**.



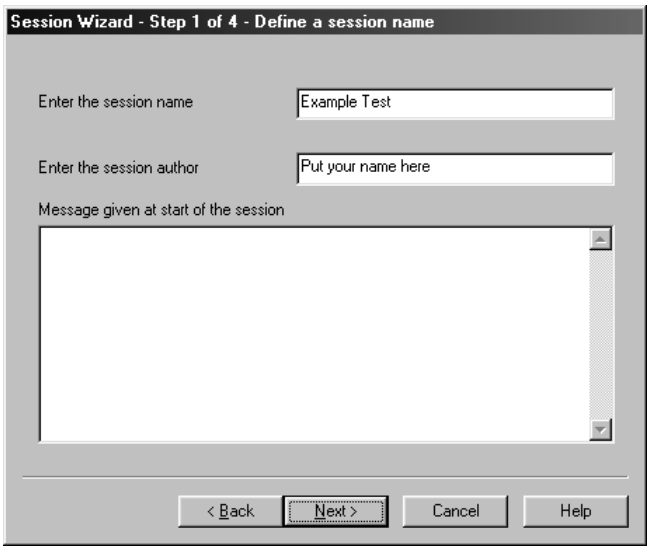
❹ You might be prompted to define the **.question** database from which the session will draw its questions. If so, be sure to select the database in which you saved the multiple response question created in the previous section.



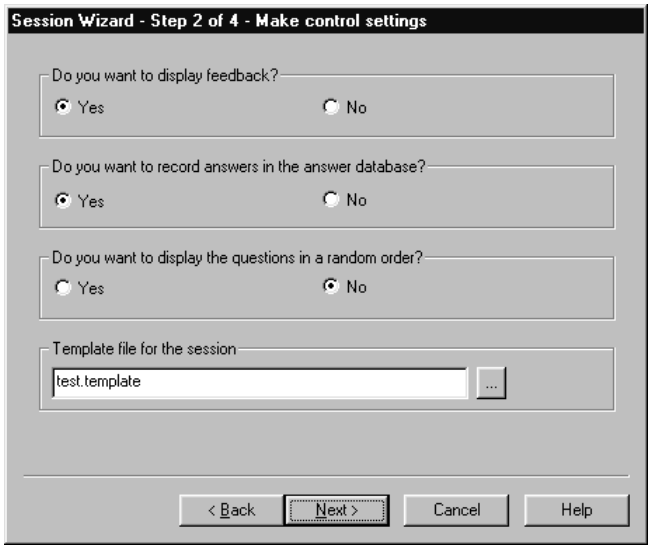
❺ Since this is a new **.session** database a new session will be immediately created. When creating a new session you will always be prompted to create a new session either **with the Wizard** or **from scratch** or **by copying an existing session**.



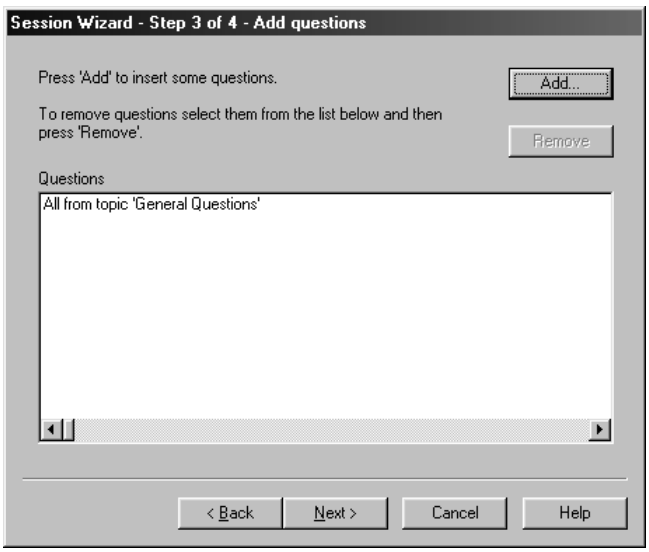
❻ Selecting **Next** presents the following dialog:



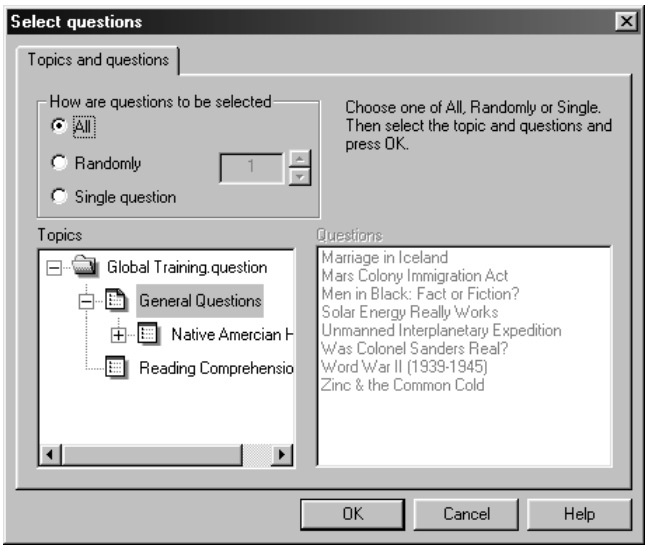
❼ You must define a name for the session and an optional message, which will be displayed whenever the session is first run.



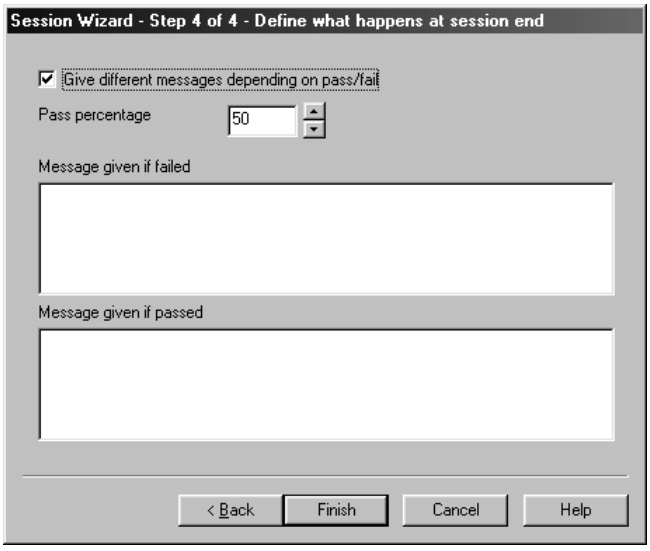
❽ You can choose to display feedback to your session, records answers or display questions randomly.



❾ The next step of the Wizard is to add some questions. Clicking the **Add...** button produces a dialog which browses the question database selected via the **Tools | Options...** menu.



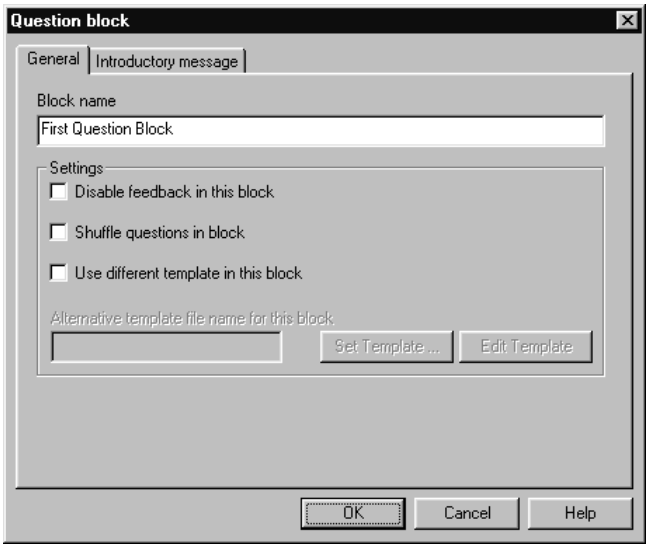
❿ The final screen allows the score bands to de defined. You can select **Give different messages depending on pass/fail** to produce two score bands, or leave it deselected to produce one score band for all scores. Clicking **Finish** creates the session.



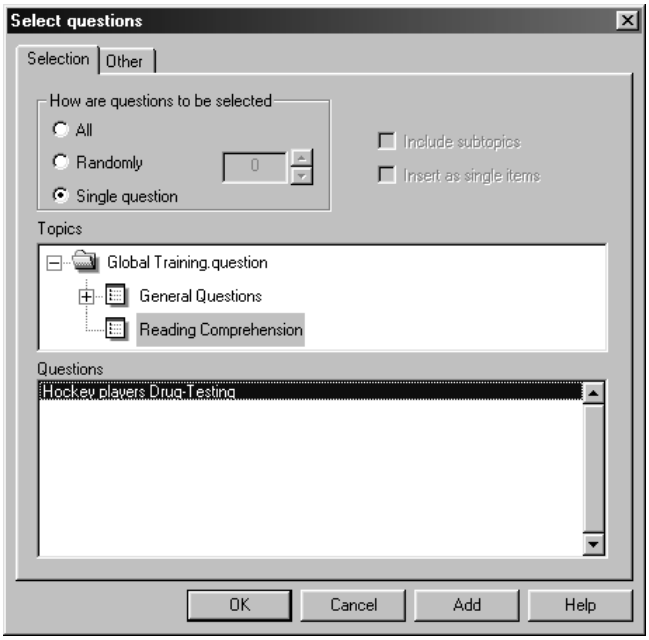
Adding questions to a session

Blocks that grab questions from a topic (i.e. selection blocks) are always housed within question blocks. Question blocks are able to override the feedback setting defined within the session **Control block**. They also allow you to shuffle the order that selection blocks are displayed and to define an introductory message when the question block is run.

Before creating selection blocks you must first create the question block in which they will reside. From the menu bar select the **Block | Add Question Block...** option:



By clicking **OK** you will then, automatically, be prompted to add a question reference block:



In this instance we merely want to add a question reference that will display one question, as shown above. Unlike the **All** or **Randomly** options, when using the **Single question** option you must also select a question from the listing. When done click **OK** to close the question block.

Why use more than one question block?

A simple session will, generally, contain only one question block, and maybe one or two question reference blocks within it. However, multiple question blocks are useful when you wish to supply separating text between groups of questions, or to branch (i.e. "jump") to another question block depending on the results of another block. For example:

- **First Question Block**
  Question reference: 8 questions from the "General Questions" topic
- **Jump Block:**
  If First Question Block score is less than 50% then jump to end of session
- **Second Question Block**
  Selection: A single question from the "Reading Comprehension" topic
- **End of Session**

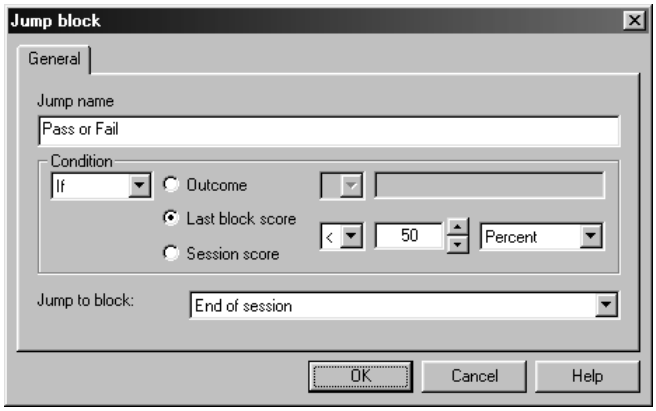
In the above example, should a participant score less than 50% on the **First Question Block** they will then be booted down to the end of the session, thus skipping over the main body of questions presented within the **Second Question Block.** Only participants that score greater than 50% will view those questions selected in the **Second Question Block**.

Controlling the flow of a session between question blocks is accomplished via the jump block. To create a jump block, first create two separate question blocks within your example session. You will then place a jump block in-between these two question blocks.

Once you have created two question blocks, with selection blocks, follow these steps to insert a jump block between them.

❶ Click on the first question block for the first group of questions.
❷ From the menu bar select **Block | Add Jump Block...**

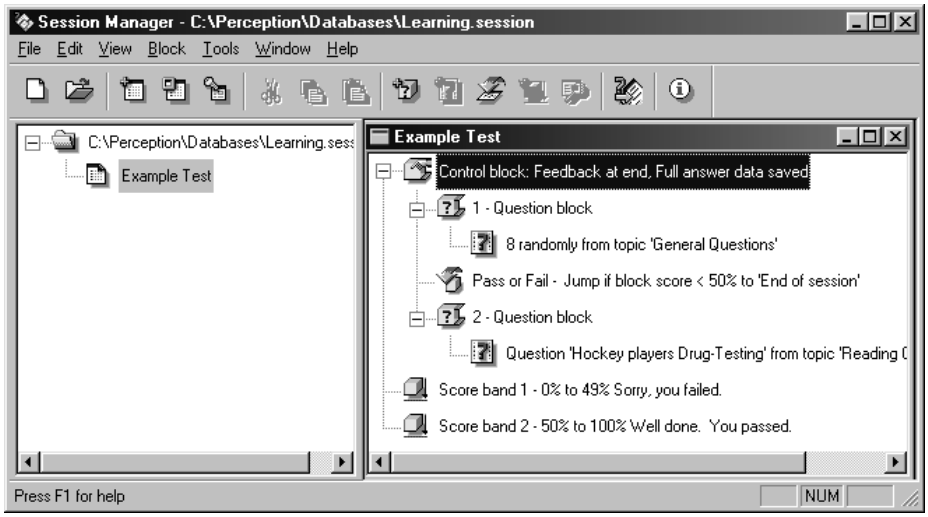
A jump block should briefly appear between the two question blocks only to be replaced by the following jump dialog:



❸ Name the jump block (e.g. “Pass or Fail”).
❹ Ensure:

- the condition is set to **If**
- the **Last block score** is toggled on
- the score is set to < **50 percent**
- and the **Jump to block** is set to **End of session**.

When done click **OK** to insert the jump block between the two question blocks.
If you have done everything correctly, you should have two question blocks (each containing selection blocks) that are separated by a jump block.

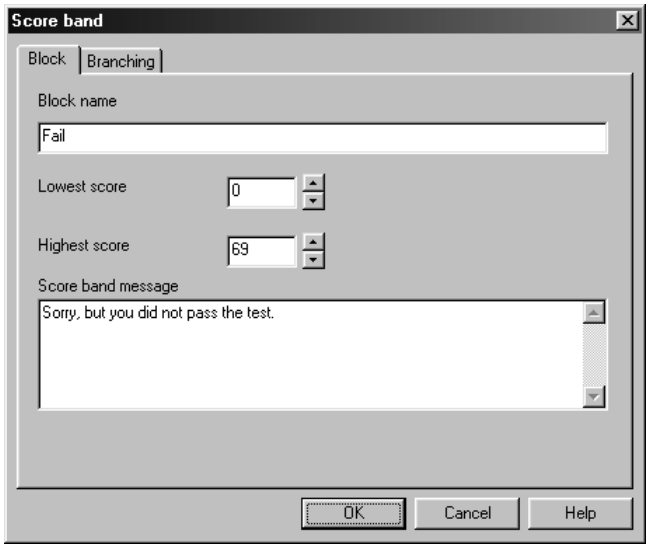


Jumps are a powerful facility, enabling you to create adaptive surveys, self-paced modules, and other assessments. Learning when and where to utilize separated question blocks and jumps can greatly enhance your sessions.

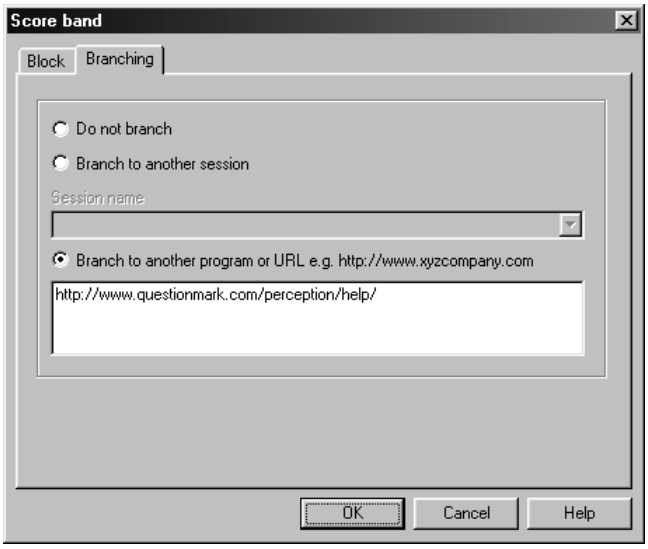
Using score bands

Score bands, sometimes referred to as “end blocks” within Perception, are a means by which you can control the conclusion of a session. Using a score band you can define unique feedback messages, or jump to another session or even to a web or intranet address. For example, say we wanted to provide a unique message to anyone failing our test (achieving a score of less than 70%) and also send their web browser to a URL that contained tutorial information to address their needs. To achieve this:

❶ Create a score band (via the menu bar **Block | Add Score Band…**).
❷ Name the score band “Fail”, define its range as being from 0% to 69%, and enter an appropriate feedback message.



❸ Click on the **Branching** tab.
❹ Toggle-on the **Branch to another program or URL** option and enter an address on the web or an intranet.



Should the above score band be triggered the feedback text will be displayed and then the browser can proceed to the defined web address.

Although sometimes confused with jumps (which are used to jump *within* a session), score bands are quite different in that they can propel a participant outside a session. Using this feature one could present additional questions uniquely attuned to that participant (as in a survey), or draw on the multimedia abilities of external web pages.

Publishing sessions to the webserver

Organizations will, generally, have two separate installations of Perception. The first installation could be classified as an "authoring installation", while the second installation would be a "server installation."

- **Authoring Installation Area**

This would usually contain the authoring modules of Perception (i.e. *Question Manager* and *Session Manager*) along with a **.question** and **.session** database used for constructing questions and their related sessions.

- **Server Installation Area**

This would typically not contain any of Perception's authoring modules, but would contain a **.question** and **.session** database. These databases would probably contain only completely finished questions and sessions, and would not be used when editing or modifying individual questions or sessions.

When moving sessions and questions from "working databases" (residing in the authoring area) into the "finished databases" (located in the server area) you would use the **File | Publish Session... | Access...** command found within *Session Manager*. However, it is important to understand that when publishing a session and its questions the entire contents of the database (from which you are publishing) can be copied into the database to which you are publishing.

For example, if your working **.session** database contains three sessions and your server **.session** database contains ten completed sessions, should you publish the contents of your working database over to the server database, you will then have a total of thirteen sessions in the server **.session** database.

Pre-Publishing of Sessions

Working.session database
Contains 3 sessions

Server.session database
Contains 10 sessions

Post-Publishing of Sessions

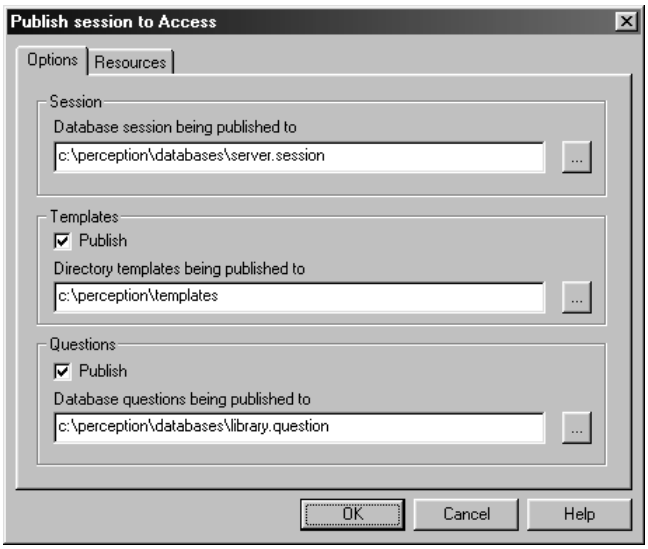
Working.session database
Contains 3 sessions

Server.session database
Now contains 13 sessions

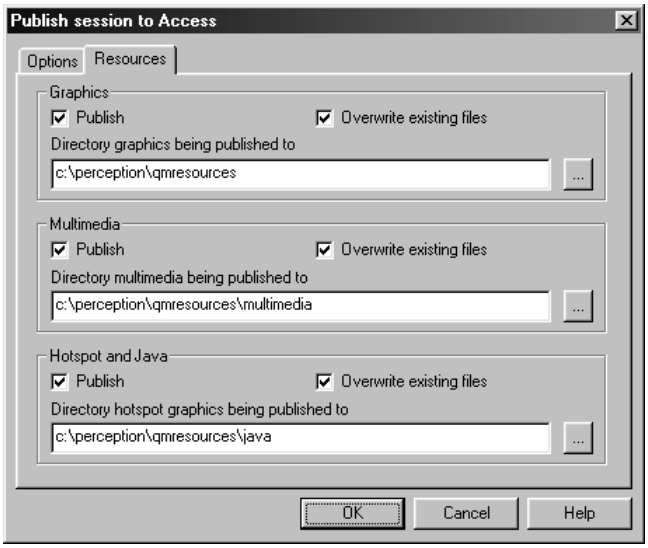
When publishing a session to the server area's **.session** database follow these steps:

❶ From the *Session Manager* menu bar select **File | Publish Session...** and then select to publish to **Access...**

❷ In the resulting dialog select the session database you are publishing your session to by using the browse button. Select the **Publish Templates** box and ensure you select a directory to publish your template files too. Select the **Publish Questions** box if you wish to publish your questions too.



❸ You can select to publish all graphics and multimedia files referenced in your questions from the **Resources** tab.



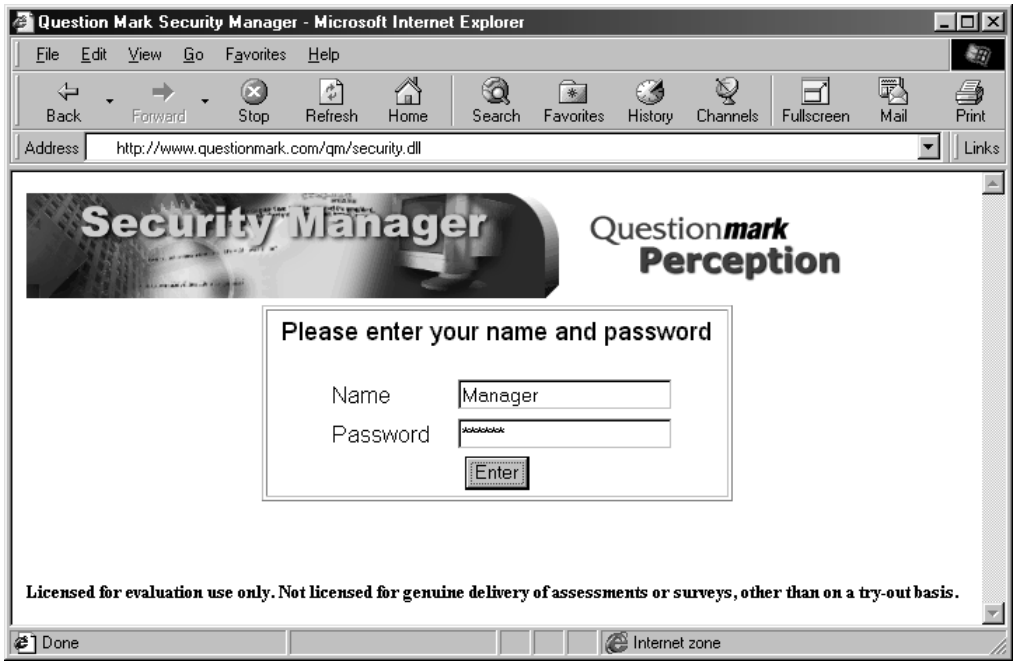
❹ If the publishing process was successful you will receive a message similar to this:

Delivery of Sessions

Preparing sessions for delivery

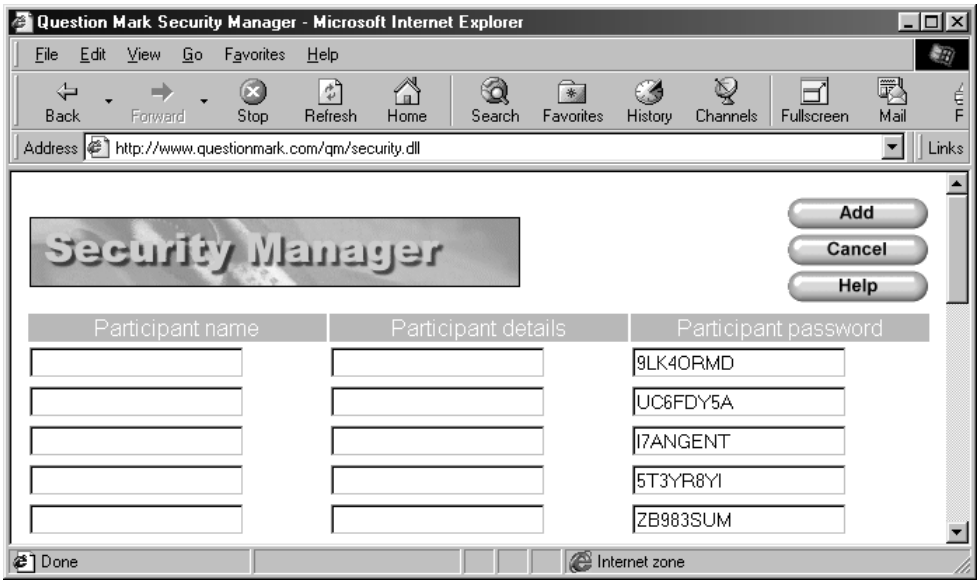
Once you have published your sessions to the server area you will need to prepare them for delivery to participants via an intranet or the web. To do this, launch a web browser and point it to *Security Manager*, located within the server's **QM** subdirectory. An example URL would be:

http://www.questionmark.com/qm/security.dll



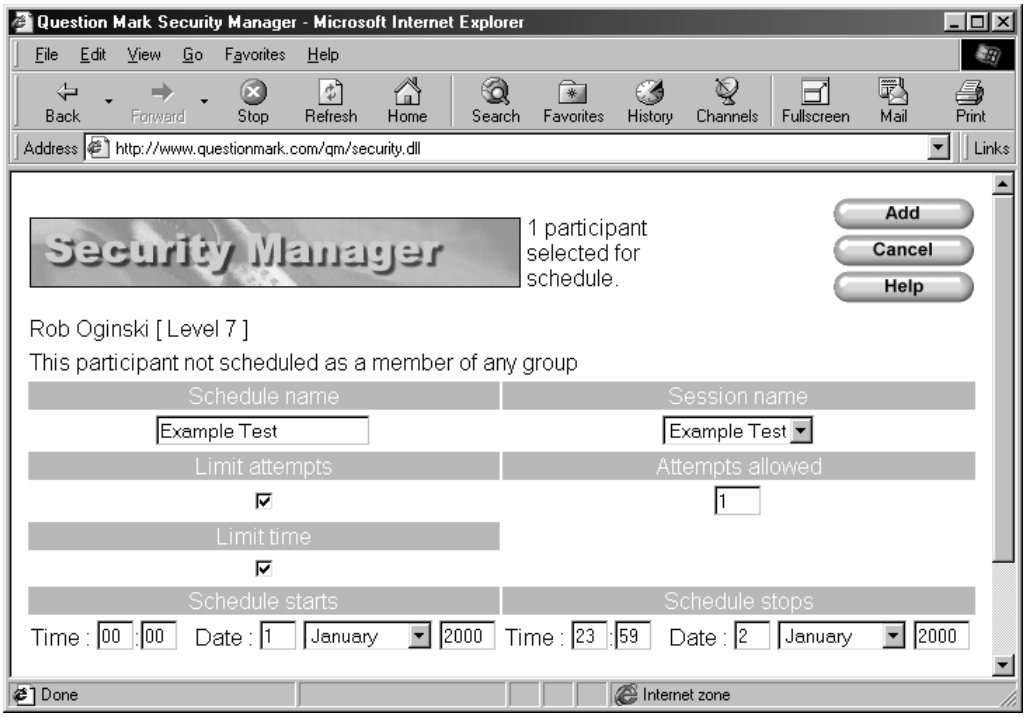
When first entering *Security Manager* it will be necessary to quote a valid name and password. Once you gain entry you will be presented with the following screen:

In order for participants to access a session they will need an access account and a schedule allowing them to take a session. To create a new participant account click on the **New** button. This will generate the following screen:



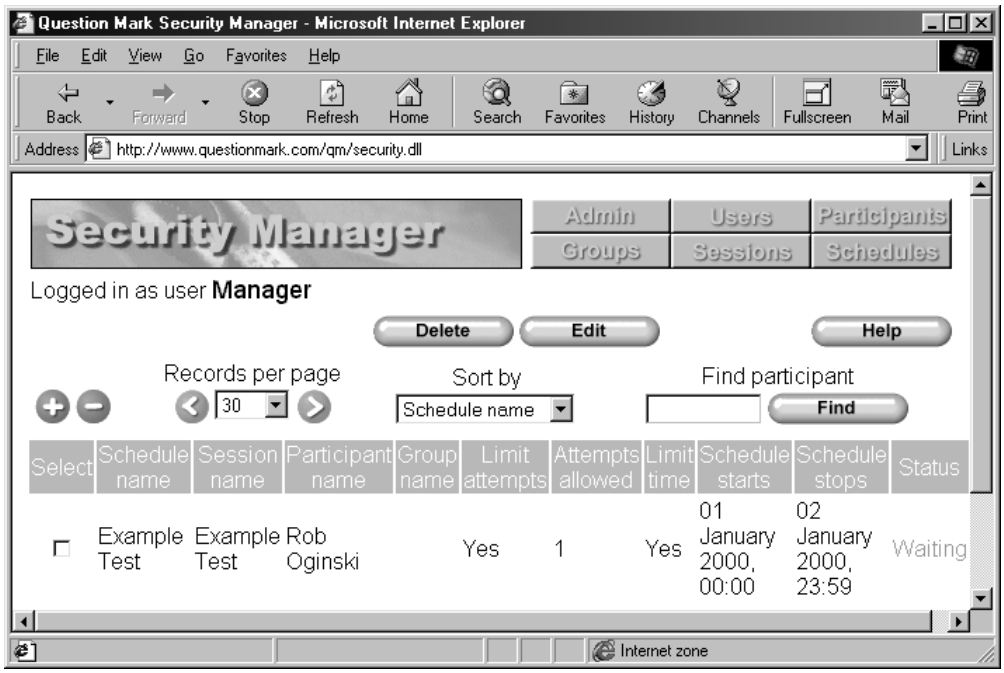
Under **Participant name** enter the new participant's name. Additionally, you can define a location, department, or class (within the **Participant details** field) as well as modify the randomly generated password. Once you have entered in the necessary details click on the **Add** button, returning you to the main screen.

Now that you have registered the required participants you must now schedule them for the appropriate sessions. From the participant listing (as shown above) select those participants you wish to schedule (using the **Select** box to the left of each name) and then click the **Assign** button.



Each schedule you create is identified by a unique name of your choosing. Also, note that when defining a schedule you must specify the particular session name, and can also limit the number of attempts and time period in which the session can be administered by the server software. Once you have defined these settings click on the **Add** button.

When you add the schedule those participants you selected are immediately included within the schedule, as shown below:

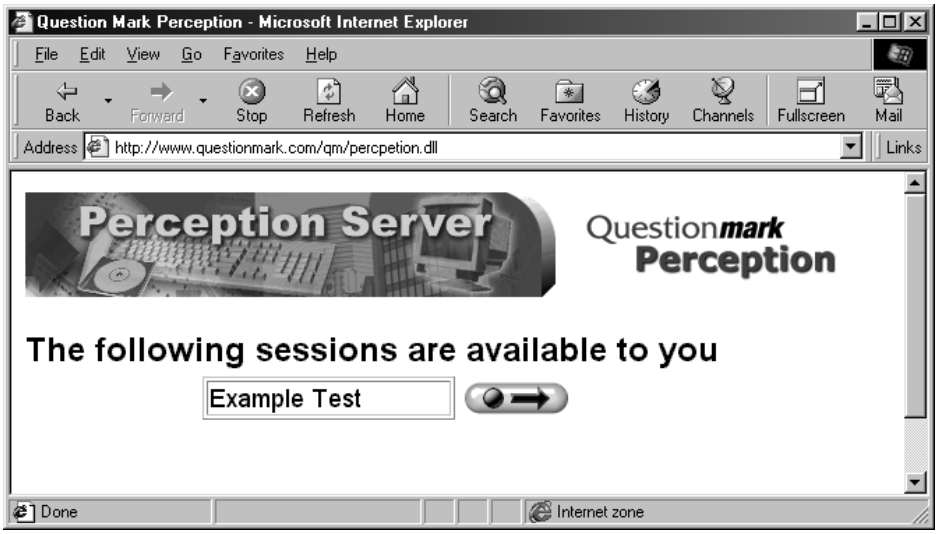


To ensure that you have properly assigned participants to a session within a schedule it is recommended that you create a practice account. Using this practice account you can then try-out the session for yourself.

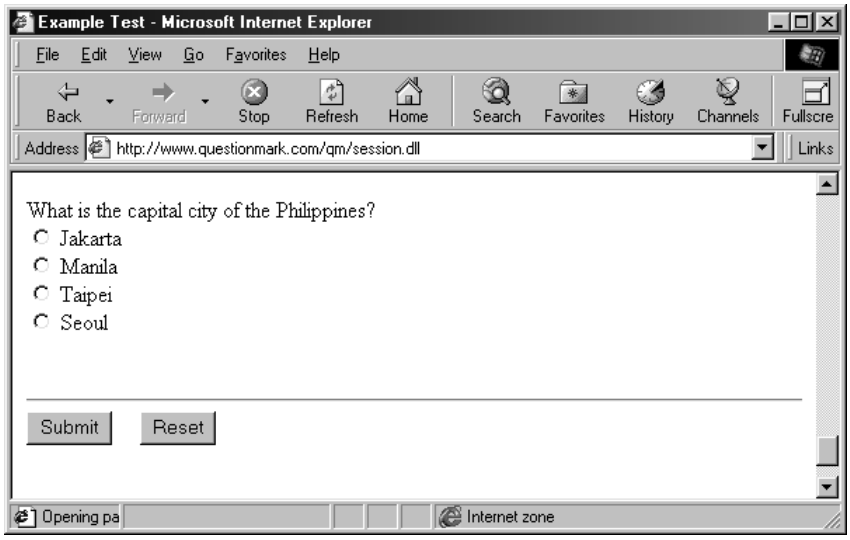
Taking a session via Perception Server

Participants access *Perception Server* via their web browser. They enter the address for the server, remembering to quote the **perception.dll** or the **open.dll** (in situations where no security controls are required). They then enter their correct access details, as shown below:

When they gain entry the server will display all sessions assigned to their account name:



A participant executes a session by clicking on the symbol. When the session is run the participant is presented with the first question block's questions.



Once they have answered all of the presented questions the participant should click the **Submit** button. This will cause the answers to be saved to *Perception Server*'s **qmpanswer.mdb** database file. At this time, any feedback text and/or score band branches will also be generated.