through one of the funds **702**, **704** or **706**, and drilling down to a company in a particular portfolio, context information is accumulated with every drill-down so that the resulting view of the company is generated in relationship to the specific fund or portfolio. The information may include the quantity of the company's stock held by the fund, and the duration of ownership of the company's stock, among others.

The scene being presented in each wormhole in FIG. **16** is parameterized in company_ID in a manner analogous to an argument to a function. In this case, the scene itself has an argument that specifies what company the user is looking at and the scene is accordingly customized. Thus, when the user looks through any of these wormholes, the scene looks different because it takes on the identity of the specific wormhole being viewed by the user.

As discussed above, the system provides dynamic views of data without programming expertise. Users are thus moved closer to the data so that application development time is reduced. User interfaces may be created quickly and easily for information rich databases and for applications such as data warehousing and decision support. Further, limitations inherent in conventional forms-based or report-based applications are avoided.

Moreover, the techniques described here may be implemented in hardware or software, or a combination of the two. Preferably, the techniques are implemented in computer programs executing on programmable computers that each includes a processor, a storage medium readable by the processor (including volatile and nonvolatile memory and/or storage elements), and suitable input and output devices. Program code is applied to data entered using an input device to perform the functions described and to generate output information. The output information is applied to one or more output devices.

Each program is preferably implemented in a high level procedural or object-oriented programming language to communicate with a computer system. However, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program is preferably stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic diskette) that is readable by a general or special purpose programmable computer for configuring and operating the computer when the storage medium or device is read by the computer to perform the procedures described. The system also may be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

Other embodiments are within the scope of the following claims.

What is claimed is:

**1**. A hyperlink system for viewing a plurality of visualization scenes of a relational database from a viewpoint, comprising:

a first visualization scene located at a first distance from the viewpoint, wherein the first visualization scene includes context information;

a second visualization scene nested in the first scene and located at a second distance from the viewpoint, wherein the second visualization scene is configurable by the context information in the first visualization scene; and

a wormhole projecting from the first visualization scene to the second visualization scene based on the first and second distances, wherein the wormhole provides context information from the first scene to the second scene.

**2**. The hyperlink system of claim **1**, wherein the second scene is characterized by one or more scene parameters and wherein the wormhole has a context information attribute to provide context information from the first scene to the second scene by setting the value of the one or more scene parameters that characterize the second scene.

**3**. The hyperlink system of claim **1**, wherein each scene is displayed in one or more nested windows.

**4**. The hyperlink system of claim **1**, wherein each scene contains one or more objects representing the content of the relational database.

**5**. The hyperlink system of claim **4**, wherein each object is associated with a behavior, further comprising one or more notification events for triggering the object behavior as a user navigates the hyperlink system.

**6**. The hyperlink system of claim **1**, wherein the first scene has a first zoom factor, and the first distance is proportional to the inverse of the first zoom factor.

**7**. The hyperlink system of claim **6**, wherein the second scene has a second zoom factor, and the second distance is determined from the first distance and the inverse of the second zoom factor.

**8**. The hyperlink system of claim **7**, further comprising a query generator coupled to the wormhole, wherein the query generator dynamically generates queries to the relational database to generate visualizations for the first and second scenes based on the first and second zoom factors.

**9**. A method for navigating a plurality of visualization scenes of a relational database, comprising:

navigating a first visualization scene having context information and containing a wormhole having a context information attribute to store the first visualization scene's context information;

receiving a notification event to jump through the wormhole from the first visualization scene to a second visualization scene by rendering the second visualization scene according to the context information stored in the wormhole's context information attribute.

**10**. The method of claim **9**, wherein the second scene has a scene parameter and the wormhole provides the context information from the first scene to the second scene by setting the value of the scene parameter using the context information from the first scene.

**11**. The method of claim **10**, wherein the context information from the first scene is a global parameter, a scene parameter, or a query parameter.

**12**. The method of claim **10**, wherein the context information from the first scene comprises one or more global parameters.

**13**. The method of claim **9**, wherein the first scene is located a first distance from a viewpoint, the second scene is located a second distance from the viewpoint, and the wormhole projects from the first scene to the second scene based on the first and second distances.

**14**. The method of claim **13**, further comprising dynamically generating a relational database query in response to the received notification event based on the first and second distances.

**15**. The method of claim **9**, wherein the first scene has a first zoom factor and the first distance is proportional to the inverse of the first zoom factor.

**16**. The method of claim **15**, wherein the second scene has a second zoom factor and the second distance is determined from the first distance and the inverse of the second zoom factor.