Excel Reporting

The Sharperlight Excel® Add-in gives end-users easy access to the Query Builder and a drilldown data explorer. The queries are anchored in the worksheets, using formulas and the construction of these formulas is wizard driven through the Query Builder. These formulas fully support cell referencing and automatic recalculation, so results will refresh as filters are changed or when a recalculation is forced.

- The Microsoft Excel Add-in is compatible with Excel 2007, 2010, 2013 and 2016
- Cell, Table and Sheet formulas.
- Filter with cell referencing and automatic lookup windows appear when double clicking referenced cells.
- Query Manager for managing and re-using seed queries in the same workbook.
- The Sharperlight formulas are drilldown points which can loaded into Explorer for slice and dice analysis.

Data Capture

Sharperlight has multiple methods of data capture. From within Microsoft Excel, the system add-in can validate and bulk load records using its template driven Writeback interface.

In the web Sharperlight can generate web entry forms and entry grids.

- All data updates are managed through the secure data model layer where rules and constraints are enforced.
- You have extensive control on lookup and validation lists to ensure that incomplete or erroneous information is caught in the data entry and not during the data load.
- Data capture uses the Web Service to interface with the target data store and therefore, the data entry does not need a direct connection to the target system.

Query Builder

The query builder is a user interface with separate panes for filters, field selection and output. Simple enough for the infrequent user but it does have deep functionality with menus on each pane title and fields which provide right hand click menus. In the filter pane the user can select between different query

styles using the mode filter and when the user selects the table, it becomes the focus for the query structure, and it populates the fields and relationships in the selection pane.

- The data model acts as a presentation layer between the complexity of the data source and presents to the users a unified view of query tables, with available fields and relationships.

- The query builder uses drag and drop to select filters and outputs, most fields can be a filter and/or an output. The query engine will construct the query on the fly and optimise the syntax.

- The filters can inherit and display lookup lists from the data model and there are standard lookup wizards for dates and periods.

- Query results can be previewed in the query builder to assist in query design and Preview grid supports drill for further analysis.

Agile DataMart's

It is sometimes useful to have the ability to stage query data into a physical data set that can be summarised for performance or fixed to allow consistent reporting. Often referred to as Agile DataMart. Sharperlight has a simple end-user interface called materialised query for designing and populating physical tables based on a query.

- The data can be refreshed at will or on a schedule, or it can be held indefinitely as an audit history.

- Materialised queries are presented to the end-user as just another data model and they can be queried using all the standard Sharperlight functionality and presentation tools.

Solution Development

Sharperlight is an application framework for interacting with complex operational databases and it controls all data interactions using an abstraction layer called a data model. These models are developed and maintained using studio designer and at the lowest level they encapsulate data structures, relationships and business rules.

The data definition is only part of the story, data models have a rich command language and data access can be controlled and modified based on system, user and data events. Data models are also fully multi-lingual, just like the Sharperlight application, and a data model can combine .NET code and package WinForms and web content.

Whilst many Sharperlight customers utilise it for spreadsheet integration, self-service reporting, web reporting and dashboarding; it has a bigger role to play. Sharperlight has a secure gateway and a web service, a data modelling concept that can unify information from numerous data sources and the tools to quickly develop data models and user content.

Security

Data model and application interfaces are secured on the server using site setup. User authentication is available as a native login, using Windows Authentication, Active Directory Groups and LDAP Groups. A data model can have its own data security layer which secures the visible query objects and enforces record level security.

Report Designer

The report designer provides more control on the positioning and layout of report pages, and it addresses many of the printing limitations inherit in web browser rendering. It uses a third-party component library to provide the reporting engine and a graphical What You See Is What You Get (WYSIWG) designer interface.

- Uses the query builder to construct the data sets and it automatically integrates the query as a report data source.
- Allows pixel perfect control of field and object placement for reports and business documents.
- Reports can be accessed through the Sharperlight web service and run locally on computers that have the Sharperlight rich client.
- In the web the reports use the common filter bar to feed parameters back to the underlying reporting engine.
- The reports can be rendered into PDF and native HTML, it also supports output to Microsoft Excel and Word.

Message Queue and Scheduler

The Scheduler is an automation interface for the execution of tasks on a recurring and ad-hoc basis. Each task can have many actions and a task can be executed manually or a schedule.

- Optionally and conditionally execute reports that can store, save and email content.
- Include expression-based logic to drive multiple scenarios.
- Send notification and exception reporting.

- Create, collate and deliver Board Report packs.

Often there are benefits using lightweight messaging and thus, the MQTT messaging protocol has been added to the Sharperlight libraries. MQTT is an ISO standard publish-subscribe model where the publisher sends messages to a broker (server) and the broker then distributes the information to any clients that have subscribed to the topic. Another way to describe MQTT, is that it can collect data from many devices and then transport the information to other control systems.

- With MQTT, Sharperlight means it can act as both a client and server.
- Scheduler has an action to host the MQTT Server (broker). The server can be bound to a Service Code and authenticated using the user accounts in Site Setup or specified user details.
- There is an equivalent MQTT Server query table in system data model, it can be used by the Query Builder to return the last retained data values for each topic.
- The JavaScript libraries have been extended to include functions to connect, publish and subscribe to MQTT.
- There are new expression functions to send messages.