Business Intelligence Tools

(PHP Query)

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Overview:

Task: I am currently researching PHP Query and BI Tools and how they can be used together and what kind of tools we could see implemented and used within the company.

So, what is PHP Query and what are Business Intelligence Tools?

What is PHP Query:

PHP Query is a server-side, chainable. CSS3 selector-driven Document Object Model (DOM) API based on jQuery. **It allows you to manipulate HTML documents in PHP, like how jQuery works in JavaScript.**

https://codingexplained.com/coding/php/manipulating-dom-documents-with-phpquery

What are Business Intelligence Tools (BI Tools):

Business Intelligence (BI) Tools help organizations analyze data and make decisions. They gather, organize, and present business data that makes it easier to understand.

A popular tool is **Microsoft Power BI**, it helps eliminate data silos, visualize data, and provide a sole source of truth for organization's data.

The Top 6 Business Intelligence Tools For 2024 You Need to Know | Data Camp

How can BI Tools use PHP Query?

PHP Query is a jQuery-compatible library for PHP. It can be used with BI Tools to complete tasks to query and manipulate data.

You can use PHP Query by feeding PHP scripts to process data before feeding it into the BI tools.

Methodology:

What are some examples of open-source BI tools?

There are plenty of license-free and 'Open-source' tools that allow users gather, handle, organize, and share raw data and turn it into valuable information that the business can use.

Functionalities that BI tools offer include:

Data preparation and transformation; Data visualization; Analysis tools; Approaches to data mining; Data integration; and Reports generation.

Some of these tools that can be considered for data analytical needs include:

Top 7 open-source BI tools to empower your analytics (apptension.com)

How will these tools be implemented?

Focus: Primarily we can look at **Power BI which is a Microsoft tool**.

Use BI tools to visualize data and PHP Query to gather and process data:

You can use PHP Query to gather and preprocess data than import that data into one of the BI tools for further analysis and visualization. By manipulating HTML documents in PHP, we can extract data we need to and format it into a structure that the BI tool can consumer. This may include converting the data into JSON or even directly pushing it into the database.

For tools like Power BI, you can use their API to push data. Once the data is in the BI tool, we can create dashboards and reports to visualize it.

Power BI embedded analytics overview - Power BI | Microsoft Learn

Methodology (Cont.):

What are the benefits?

BI tools help organizations analyze data and make informed decisions. They gather organize and present business data in a way that makes it easy to understand and act upon. PHP Query allows you to manipulate HTML documents and perform tasks. It is particularly useful for web scraping and HTML manipulation.

1. **Simplified Development:** Has a rich set of libraries and frameworks that streamline the development process, making it easier to build and maintain BI tools.

2. **Database Compatibility:** Compatible with various databases, which facilitates easy data integration from multiple sources.

3. **Efficient Data Manipulation:** Provides robust capabilities for data manipulation and calculation, allowing for complex data processing tasks. Supports advanced data visualization options, improving the interpretation and presentation of data.

4. **User-Friendly Interfaces:** Many PHP-based BI tools have intuitive interfaces, enabling users to access and analyze data without needing extensive programming knowledge

Using PHP Query for BI tools also offers several benefits, these features allow PHP to be a versatile and powerful choice for developing BI tools that can handle real-time data visualization and provide actional insights.

You can read more about it here:

https://moldstud.com/articles/p-the-role-of-php-in-building-business-intelligence-bi-dashboards-and-reports

Methodology (Cont.):

What are other low/no cost BI tools?

Focus: If we choose not to go down the Power Bi route are there other no cost/low-cost BI tools that will interface with PHP Query?

Looking specifically for tools that will output to PDFs, excel and other documents as well as be able to Schedule the run of individual queries

Helical Insight:

1. Free and Paid version. **Free (Community Edition code can be downloaded from GitHub or Source Forge and used)** Download guide online
2. Helical Insight does allow **scheduling the runs of individual queries**. You can use the scheduling feature to automate the execution of reports and dashboards.
3. **Exports: Various file formats like PDF, JPEG, PNG, Excel etc.** Data from the individual reports can be exported into CSV or excel format. Being an API-driven platform, you can add more export options based on your own business needs.
4. **BI Tools can be interfaced with PHP-based solutions through APIs** (Extensive API support does not specifically mention in documentation but should be able to integrate PHP Query)
5. Open Source Business Intelligence - Helical Insight

Jaspersoft:

1. Includes improved paid version. **Free. (Community Edition for Jaspersoft can be downloaded on the website)**
2. **PHP applications can be interfaced**, there is no specific documentation. However, using Jaspersoft's REST API you can manipulate HTML within your PHP application.
3. **Exports: Jaspersoft Studio allows you to export reports in various formats like PDF, XLS, HTML, and more.** After designing and previewing your report you can choose the export format and save the report accordingly.
4. **Robust scheduling feature** that allows you to automate the execution of reports and dashboards **which you can set to do individual queries.**
5. Home - Jaspersoft Community
6. Some features may be limited to or unavailable on the free community edition.

Methodology (Cont.):

What are other low/no cost BI tools?

Looking specifically for tools that will output to PDFs, excel and other documents as well as be able to Schedule the run of individual queries

Eclipse Foundation - BIRT (Business Intelligence Reporting Tool):

1. **Free open-source software project that is free to download.**
2. Does not directly interface with PHP Query. **However, you can use PHP to interact with BIRT reports and then use PHP Query to manipulate the resulting HTML or XML data.**
3. You can use BIRT Report Engine API to **schedule reports to run at specific times and you can update SQL queries at runtimes using parameters or scripting within BIRT to schedule the run of individual queries.**
4. Eclipse BIRT supports extracting data into several file formats such as **HTML, PDF, Word, Excel, CVS, PostScript.**
5. [Eclipse BIRT (Business Intelligence and Reporting Tools) | projects.eclipse.org](#)

Preset – (Apache Superset)

1. **Free open-source software project that is free to download.** Secure and non-public for enterprise use unlike Apache Superset.
2. It integrates with various databases and data sources, however there is no direct integration with PHP Query. **If you are looking to use PHP Query for web scraping or manipulating HTML, you may need to handle the data extraction separately then load the data into a database that Preset can connect to leverage its capabilities**.
3. Can schedule the **execution of individual queries using external schedulers like Apache Airflow.**
4. Preset can extract data in several file formats such as **CSV, JSON, Excel, PDF, Parquet and more.**
5. [Modern BI Powered by Open Source Apache Superset™ | Preset](#)

[Qlik Data Integration, Data Quality, and Analytics Solutions](#)

Summary:

Here I have listed 4 free/paid options that all have unique features, but all provide some way of running a schedule and extracting the data into the specified file forms. All have a way to manipulate the data and insert it using PHP Query.

Conclusion:

How will this affect us?

Exploring and looking at tools such as Microsoft Power BI is a data visualization platform provided by Microsoft for business intelligence purposes. It allows you to connect to various data sources and visualize data in reports and dashboards.

I think using a tool like this alongside PHP Query to grab the information and input it into a tool such as Power BI would be beneficial to the company in many ways. Power BI offers a plethora of supported data sources and connections. This makes it incredibly easy to connect to the data source of your choice.

More information on Microsoft Power BI and how to use it such as downloading data and importing data can be found here:

Power BI Tutorial for Beginners | DataCamp

Power BI: What It's Used For & How It Benefits Businesses (christiansteven.com)

What will be the effects of using PHP Query BI tools?

Data integration:

By using PHP to query our databases and feed results into something like Power BI we can consolidate our large database from multiple sources into one cohesive platform ensuring consistency and accuracy in reporting.

Real-time insights and data visualization:

It also allows us to fetch the data in real-time and then visualize that information on a customizable report or dashboard that displays the specified metrics we wish to view.

Improve decision-making:

Finally, with the ability to analyze and visualize data the company can make data-driven decisions that enhance efficiency and outcomes. As the company continues to grow, the PHP can handle complex queries and large datasets and use Power BI to help visualize and generate a report of the data.