Advanced Web Apps

# Module 05

Module 05 Activity

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“The world is now awash in data and we can see consumers in a lot clearer ways.” (Max Levchin) PayPal co-founder. The ability to store and retrieve data is one of the most important and often overlooked aspects of development. Fortunately, technology has caught up with the times and frameworks are being created which allow developers to more easily build out their vision. These technologies that enable the storage of information and data are called frameworks and databases. The database actually allows for the storage of information where the framework is the skeleton of the whole process. The framework makes everything standardized so that one technology can “talk” to the next, so one machine can store information the same as the next machine. The technologies that are involved in this process are the SQL Database, File Access, and Indexed Database. Over this paper we will discuss the various technologies that enable the storage, manipulation, and retrieval of data over the internet.

File access is one of the most important and basic of these technologies. When the client (your computer) wants to access a server, a secure connection is made. While using File Zilla, the client request file access to the server. Upon authorization, a secure connection is established and then the client is allowed to read and write to the server with the support of file access. This is important because sometimes we need to manipulate the files on a server or web site. This can be done simply to update the website and if we tried to do this through the web interface, we would only be able to read information, not write it to the server. By utilizing file access, we can gain permission to manipulate those files.

Web SQL Database is another technology developed for the betterment of data storage and retrieval. SQL stands for structured query language. It is how we communicate with the database, where our information is stored. If the data stored within a database is not standardized, different computers speaking different languages would attempt to access this information and would not be able to understand the information being returned to the user. Standardizing this data is an effort to make everything the same, so that when one user gives the command to write data to the database, that process is achieved. Specifically, Web SQL Database is an API (Application Programming Interface) which allows data to be stored in an off-site machine or server.

When it comes to the Indexed Database API, much is similar to the previous technology we mentioned. With Indexed DB we use JavaScript to communicate through the API which helps manage NoSQL databases with JSON objects. JavaScript Object Notation is the file format in which much of the database is written in. This helped standardize the practice and now many of the worlds databases are written using JSON. Learning how to use this language will undoubtedly lead to the user becoming able to manage and manipulate data that is being transferred through an API.

When we setup or create a database, we have to implement a framework or our “data model”. This structure basically displays how all the information in our database relates. If we have information stored all over the place and with no rhyme or reason, we would not be able to find anything and if we were able to find something, it would probably take a very long time to retrieve it. So, if we break things down into groups and sub groups, we would be able to target specific areas of our database that would be more likely to have the information we need. This is important because, most of the time a user needs information fast, we don’t have all day to wait for the database to sort through our information. Once we have the data model developed, we will then be able to add as much information as we need without compromising the speed at which we can pull that information at a later date.

As most data models are as different as the technologies that support them, it is important that you pick one that is relevant to the type of information you will be storing within your database. You wouldn’t want to use a SQL database if you do not know the SQL language. In this case, it would be better to use another technology. It is also critical that the technology, database, and framework you pick works with your front and back end. If these technologies do not mesh and won’t work together, you will likely have a hard time. Careful planning is another important aspect of database design and implementation. You must intimately understand the client, product, data, and technologies you are using so that everything works together as efficiently as possible.

Resources:

(n.d.). MDN Web Docs. *How the Web works - Learn web development | MDN.*Retrieved from <http://developer.mozilla.org/enUS/docs/Learn/Getting_started_with_the_web/How_the_Web_work>

(n.d.). What is a web database? Retrieved from http://www.techwalla.com/articles/what-is-a-web-database