

White Paper



Empowering Power Information Workers through Composites Workload of SharePoint 2010

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Composites built using Access Services of SharePoint 2010 quickly allows creation of rapid transient applications, analytics and reports from existing data. Power Information Workers can use the new simplified interfaces of Microsoft Office Access 2010 to create applications – generating analytics and reports and subsequently publish them to SharePoint 2010 for larger audience consumption. This paper covers this new workload of composites in SharePoint 2010 from Access Services perspective.

Composites in SharePoint 2010

SharePoint 2010 is designed considering the three major goals listed below.

- **Connect and Empower People** – Through the use of improved social computing, proper interfaces for various devices apart from PC and easier to design pages, wikis, etc.
- **Cut Costs with a Unified Infrastructure** – Helped by al-a-carte service model, multi-tenancy and hosted environments that can be managed in a simpler way.
- **Rapidly Respond to Business Needs** – Using SharePoint 2010 infrastructure and Microsoft Office 2010 client applications, users can quickly create and deploy various business applications. Development of these applications can be done by the power information workers without the support of specialized developers. This quick turnaround time helps business in a better way and results in increased ROI from SharePoint 2010 infrastructure.

Composites in SharePoint 2010 are meant to serve the goal of responding rapidly to business needs. Composites focus on creating business solutions using out-of-the-box (OOTB) components of SharePoint 2010 with very little assistance from the Corporate IT group. To achieve this goal, various new features and OOTB components listed below were added to SharePoint 2010.

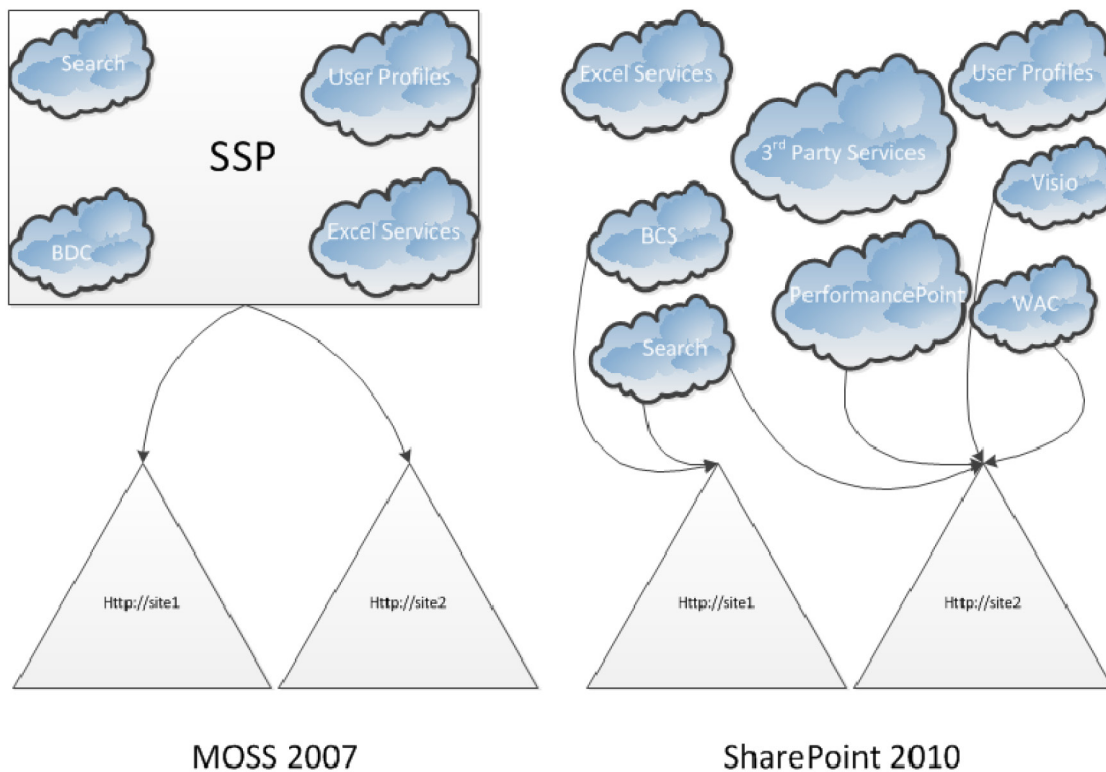
- external lists¹,
- Business Connectivity Services²,
- PerformancePoint Services³ and
- Access Services⁴

This whitepaper will cover utilization of Access Services in creation of small business solutions with a quick turnaround.

A brief description of Al-a-carte Service Model in SharePoint 2010

Figure 1 below displays the service model that existed in MOSS 2007 and the new service model in SharePoint 2010.

Figure 1: MOSS Vs SharePoint 2010 Service Tier



MOSS 2007 is a centralized model with respect to services. All the services are grouped under a Shared Service Provider (SSP). In general, a corporate farm has a single SSP. Web applications are required to subscribe to the SSP. In short, this take all or none model resulted in web applications consuming service applications that corporate's were not interested. Also, this single SSP was a major concern for scalability. On the positive side, SSP helped in the overall administration of the farm by narrowing down the options available to the topology architects.

SharePoint 2010 has moved away from the single SSP model of MOSS 2007 and now provides an al-a-carte model for service applications. This has given tremendous benefits and flexibility in terms of topology design of a farm. A web application can now subscribe to services required by it. Service applications themselves are fully scalable. Multiple instances of the same service application can exist within the same SharePoint 2010 farm. These instances can be in the same physical box or can be scaled out to separate boxes. Moreover, a web application can subscribe to a service application existing in another SharePoint 2010 farm. Most of the service applications have their own database, helping in better design in terms of scalability and load distribution. To add, some services provide data partitioning capabilities, enhancing the multi-tenancy capabilities of SharePoint 2010.

On top of the al-a-carte model, SharePoint 2010 has added a large number of new services like Visio services, Access Services, Office Web Applications related services, etc.

Microsoft Office Access 2010 and Access Services in SharePoint 2010

Microsoft Office Access has been around for a long time and is used for building small applications that primarily run on individual computers. Over the years, it has remained a good tool for power information workers for quickly creating small business applications. Access is also used for building small applications used in SOHO (Small Office & Home Office) environments.

Microsoft Access though has a quick turnaround time for building applications had one big drawback - it was not supporting the applications in multi user scenario. It is difficult to port these applications to web and normal thick client applications were difficult to use because of key issues like:

- Database locking when one user is updating thereby preventing simultaneous updates
- Requirement of Microsoft Office Access for all the users to work with sophisticated forms and views in these applications
- File share has to be enabled on the folder that holds the Access database.

With SharePoint 2010, Microsoft worked on the above drawbacks associated with custom Access applications and enabled the use of these applications in never before possible cases. SharePoint 2010 enables to publish an Access application to a SharePoint portal (in house or cloud based) and can be simultaneously used by multiple users.

In the subsequent sections, specific scenarios exploring the new functionalities and how it can be utilized apart from web-enabling standard Access applications are discussed.

Rapidly Responding to Business Needs using Access Services

Let us consider the following scenarios:

- As a temporary requirement, a project requires multiple desktops/servers/laptops of various configurations. The project manager (PM) needs to keep a tab on the number of desktops, their configuration, and the resources utilizing them. At regular intervals, PM requires to generate hardware utilization report.
- A recent natural calamity has occurred. The company wants to contribute to the relief fund for this calamity. A quick application needs to be developed to figure out the contribution of each employee and generate suitable reports.
- Within a unit of an organization, a small application is required to track the requirement of manpower. Various sub-unit heads can post requirements in this application. The unit head, at suitable intervals can generate a report of the requirements and take necessary actions based on the urgency of the requests. The unit head also wants a snapshot of what the existing manpower is doing.
- A unit is running a new rewards program. As part of the program, a new application needs to be created where people can nominate their co-workers for various rewards. Suitable interfaces need to capture the citations/work done, etc. as justification for the reward. At the end of the nomination cycle, the rewards committee needs a report of the

nominations and decide on the awards. Various charts, etc. might be required to be generated to highlight the work done by each nominee.

- An Engagement Manager needs to quickly create a set of reports indicating the growth of business and associated pain points with a client. Also, wants to share the same with the client and chart the course forward.

All the above scenarios have some common requirements, viz:

- *Quickly create a business application for some transient need.*
- *The application needs to be web-enabled for multiple people to contribute.*
- *The application must have the capability to generate reports based on the data entered.*
- *Dedicated IT teams might not be available for creating these applications*

These scenarios and the associated requirements suggest that business today is a complex activity that requires some quick, ad-hoc solution for certain small problems. These problems are too minor in nature to involve a full IT team for development of the solution but at the same time has a high impact in easy functioning of the organization. Given a set of easy-to-use development tools, power information workers will be able to create applications to satisfy these business needs.

Availability of development tools that requires a short learning curve, easy to use, and automates processes in such a way that multiple people can use - is the need of the hour for any business to rapidly respond to needs. Time is a crucial factor here and things have to be achieved with minimal cost in mind. Given the ad-hoc nature of these needs it is futile to maintain a dedicated team of IT experts for coming up with a solution. Ability to access these applications is crucial for mass access, collaboration and intimation of information.

Access Services of SharePoint 2010 along with Microsoft Office Access 2010 bridges this gap in a perfect fashion. Microsoft Office Access 2010 has been modified to provide a set of wizards and designers to quickly design:

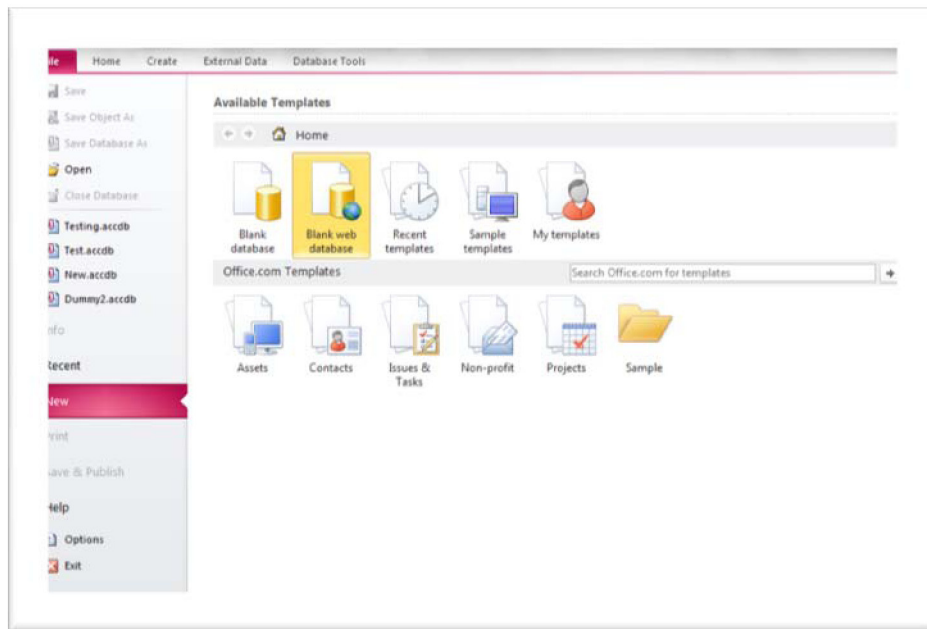
- *Tables* – To hold data for the application.
- *Form Designers* – To quickly create forms for basic CRUD (Create, Read, Update and Delete) operations. Tab based navigation forms help in a dashboard kind of view that helps in display and changes to data to be achieved from a single location.
- *Query Designers* – Modified to generate XML queries making it easier to port to web.
- *Reports* – Ability to host reports within Access as well as SSRS of Sql Server 2008 R2 helps in creating applications that are truly enterprise level.
- *Publish to Web* – Helps in hosting the solution to a SharePoint 2010 site running Access Services at the click of a button thereby hiding the necessary plumbing operation associated with this kind of action.
- *Predefined Templates* – Helps in quickly creating solution for common business needs. The power user needs to select a template matching the problem at hand and then tweak it to suit the problem at hand.

Microsoft Office Access 2010 will become the ultimate tool for power information workers to quickly design applications targeting small and ad hoc problems faced by the organizations. With its short turnaround time and independence from specialized IT support, Microsoft Office Access 2010 will enable power information workers to be more efficient in discharging their duties without straining the IT budget of the organization.

How it Works?

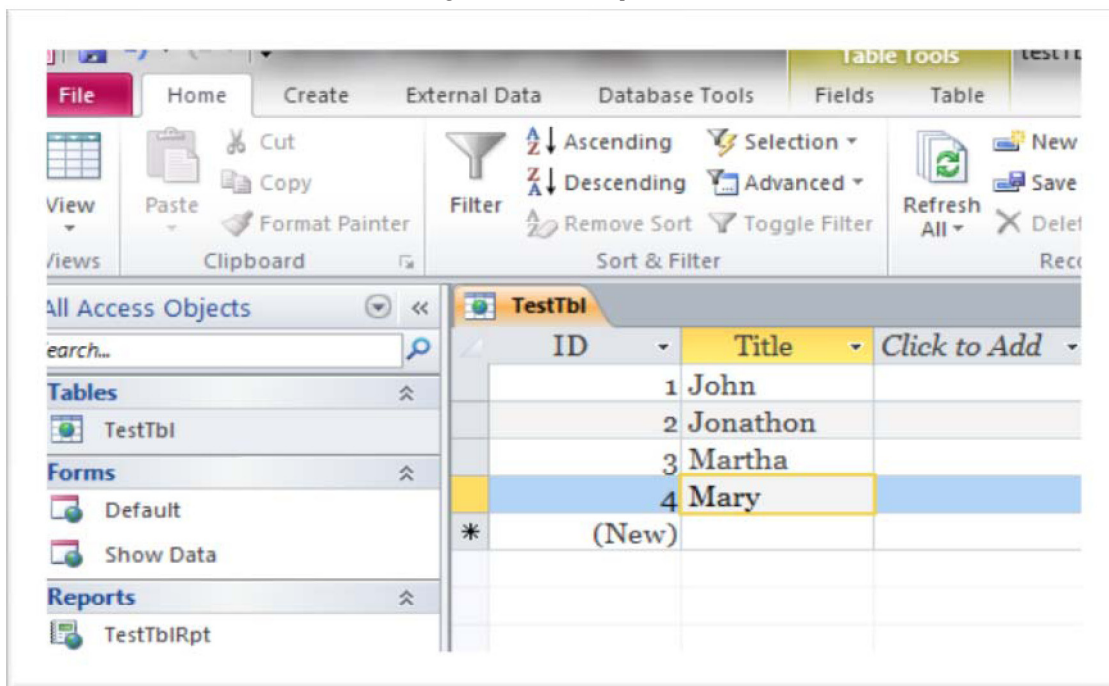
The power user analyses the business needs and then creates a basic application in Microsoft Office Access 2010. User should select any predefined “web database template” as displayed in Figure 2.

Figure 2: Blank Web Database



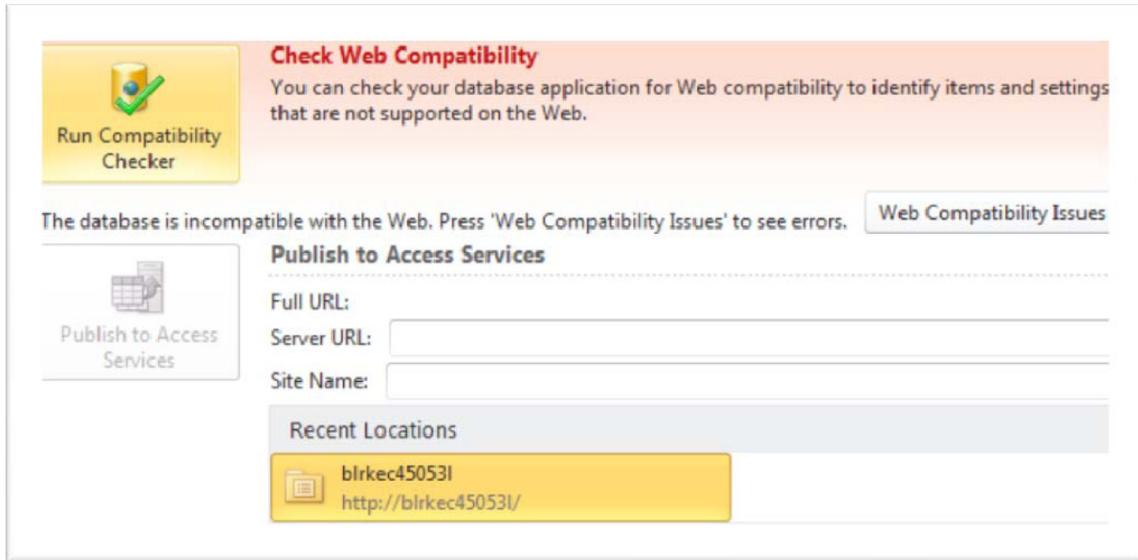
Once the basic structure of the application is ready along with the necessary forms for CRUD operations, the power user adds suitable queries and reports necessary for the application's end use.

Figure 3: Basic CRUD operations



At the end of this activity, the application is published from Microsoft Office Access 2010 to a SharePoint 2010 site running Access Services. Web compatibility issues can also be checked and needs to be rectified before the application is published to SharePoint 2010. These options are available at the backstage of Microsoft Office Access 2010. Figure 4 below displays the operation.

Figure 4: Publish to Access Services and Compatibility Checker



Access Services takes care of all the heavy plumbing tasks of showing an application in browser. All the data structures are suitably converted to SharePoint 2010 specific data structures automatically and the application is web enabled.

Figure 5: SharePoint 2010 View

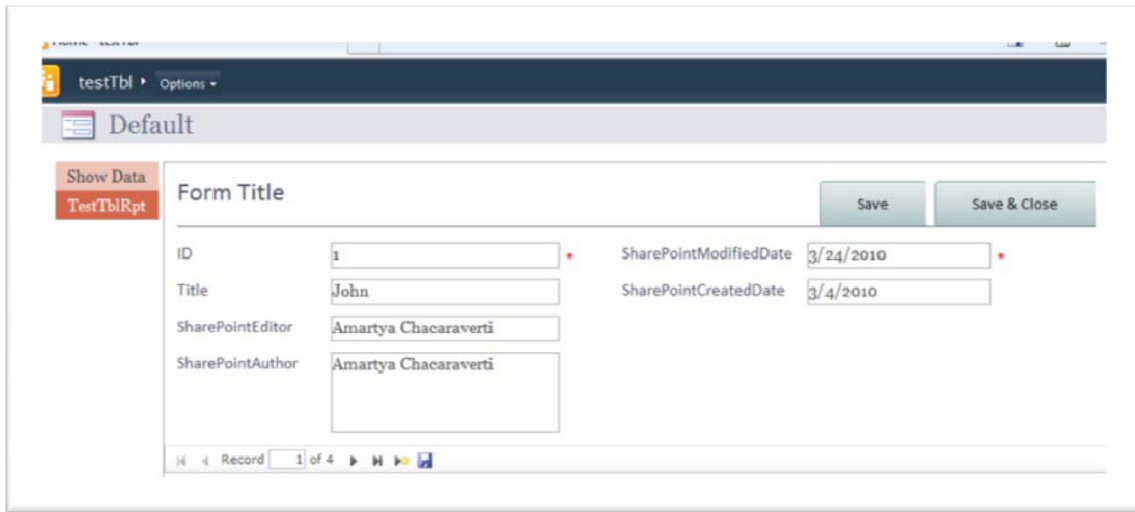
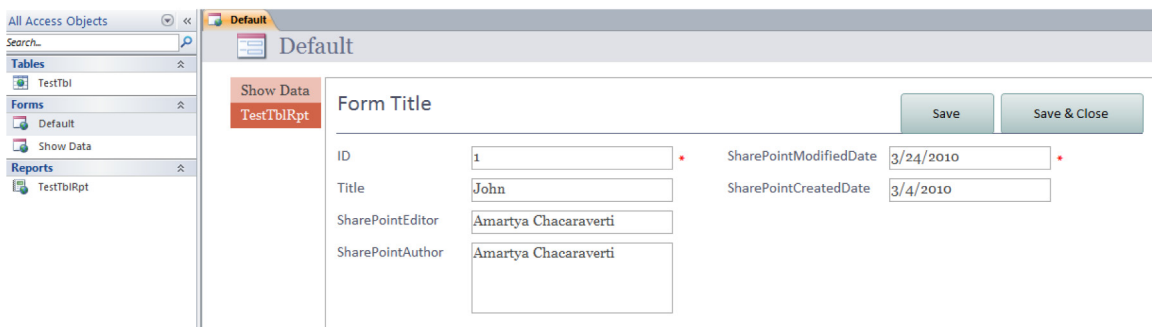


Figure 5 displays the ported application in SharePoint 2010 site and Fig. 6 below clearly indicates that the fidelity, branding, etc. is completely maintained.

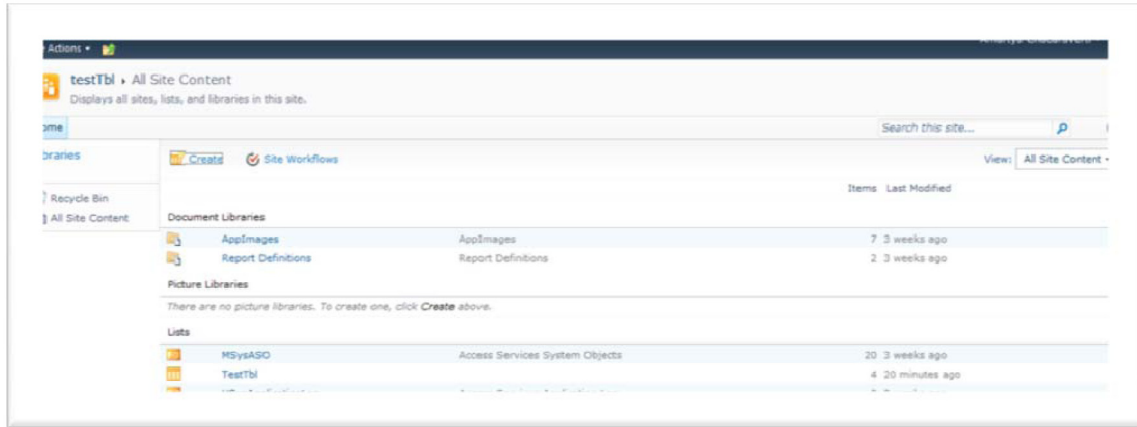
Figure 6: Access View



For further modifications like controlling the access to the application, the power user needs to export the application from web back to the Access 2010 client and put necessary restrictions and re-publish the same. Figure 6 depicts the process of how a form is modified to show SharePoint 2010 fields like Editor, Author, etc.

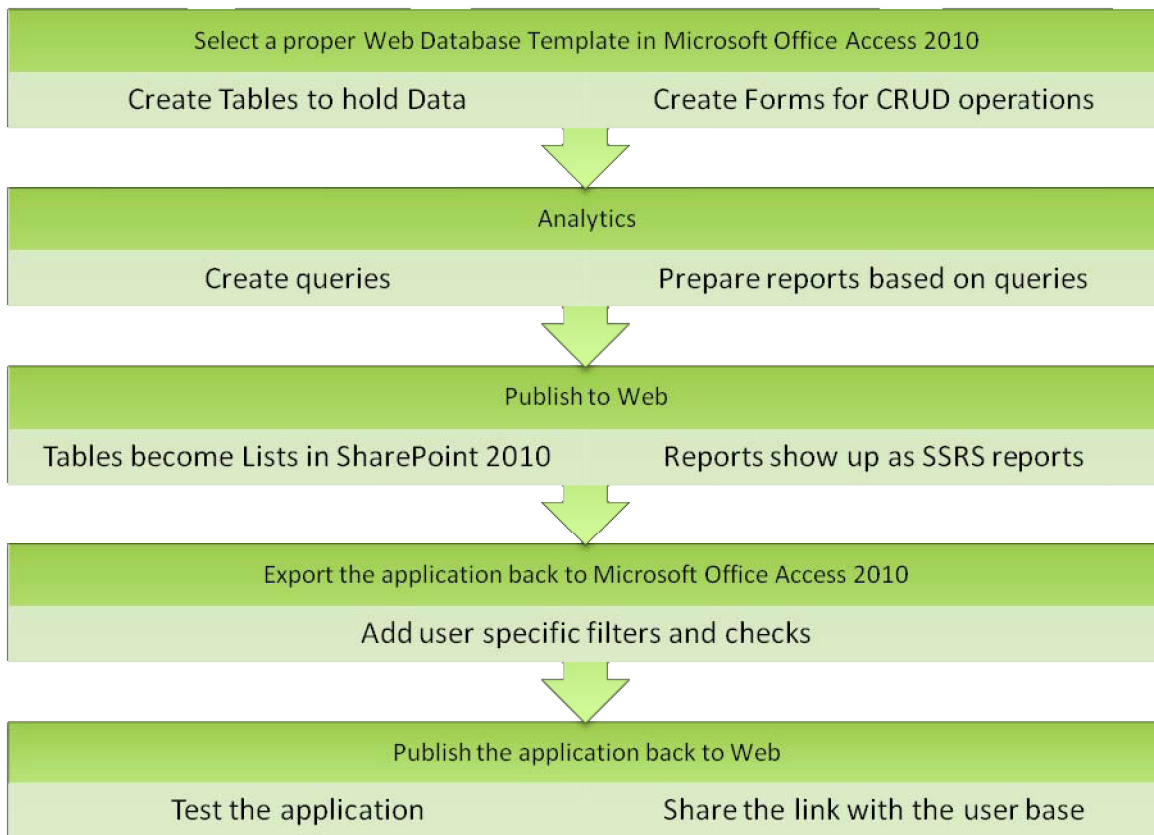
Figure 7 below indicates how the various Microsoft Office Access 2010 objects like tables, reports, etc., are converted to SharePoint 2010 data structures like lists, document libraries and SSRS report definitions.

Figure 7: SharePoint 2010 Data Structures



At the end of this activity, a web application is ready to be consumed by the intended audience. As an application hosted on a SharePoint 2010 farm, performance and scaling under load are automatically taken care of. The entire operation is indicated in the Fig. 8.

Figure 8: Steps for creating Access Web Application



Conclusion

Benefits of Access Services in SharePoint 2010 are summarized below:

- Enables an organization agile by helping to respond to changing business requirements quickly
- Saves manpower cost as dedicated IT team for developing applications is not required
- Provides better ROI on the existing investment of SharePoint 2010 and Microsoft Office 2010
- Helps power information workers to respond to client queries better by providing an easy to use way for analytics
- Creates scalable web enabled applications that can be access controlled based on user and roles

Access Services of SharePoint 2010 will help organization to be more agile in responding to sudden business needs and give the extra mileage with a minimum response time.

Glossary

1. **External Lists:** These are lists in SharePoint which represent data from some other system like Sql Server table, Line of Business applications, etc. The data stays in the existing system and SharePoint 2010 just provides a representation of the data in the form of a list with full set of CRUD operations
2. **Business Connectivity Services (BCS):** This is the modified form of BDC that existed in MOSS 2007 for connecting to external systems from SharePoint. BCS provides full range of CRUD operations on external data from within SharePoint 2010. There is also support to take the data offline using Microsoft SharePoint Workspace 2010. External Lists are based on entities created using BCS
3. **PerformancePoint Services:** PerformancePoint Server existed as a separate product with MOSS 2007. This has been incorporated as a service in SharePoint 2010. So now, any web application can subscribe to this service. All the templates related to PerformancePoint like KPI List, Dashboard, etc. are now available to any site within a web application that has subscribed this service
4. **Access Services:** This is a part of Office 2010 related services. Access Services helps in publishing Microsoft Office Access 2010 databases to SharePoint 2010 web sites. Migration of Microsoft Office Access 2010 specific data structures and logic to SharePoint 2010 related data structures and logic is automatically taken care of by this service

About the Author

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He is a Technology Architect with Microsoft Technology Center (MTC), Infosys. He has around 10.5 years of IT experience. At MTC, he is associated with the SharePoint Center of Excellence. His focus area includes deciphering, designing and solving problems around MOSS 2007 and now SharePoint 2010.



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