TopCoder Software
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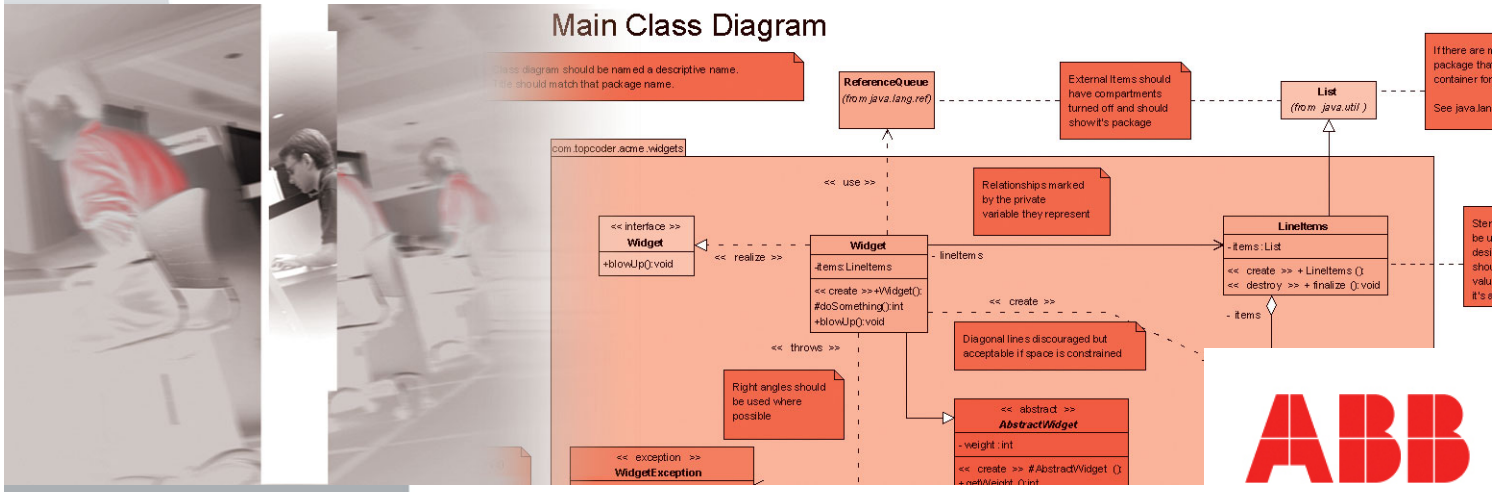
casestudy

Project Management Dashboard Application



PROJECT METRICS

- *Application source code from TopCoder Software .NET component catalog: 58%*
- *Estimated cost and time savings from component reuse: 30%*
- *Total lines of source code in application: 10,975*
- *Total lines of source code from component catalog: 6,381*
- *Total lines of test case code: 14,082*
- *Total lines of test case code: 33,337*

The Customer

ABB, a leading power and automation technology enabler, needed a modern, user-friendly HTML interface that would allow users in its engineering and systems business units to access data on its mainframe legacy system.

Accessing information related to past and present projects was extremely difficult due to an aging terminal interface requiring a complex set of keystrokes, reporting paths, and a great deal of detailed knowledge of project data structure.

TopCoder Software was approached to devise a solution that would create a set of user-friendly reports that contained as least as much information as corresponding sections of the mainframe application, and that enabled drilling between reports based on user selections. A further requirement was that the solution would also need to allow administrators to easily modify and add reports to the system while leveraging Lotus Notes authentication to validate users.

The Solution

TopCoder Software assessed the scope of the work to be done and proposed a solution design to substantially ease the complexity of the search process for users, and at the same time provide system administrators with increased data management functionality. By utilizing the TopCoder Software .NET Component Catalog, the Project Management Dashboard application limited the amount of custom code built to 42 percent that of more traditional development models. The TopCoder Application Development Methodology was employed to design and develop the application, delivering further ROI and lowering Total Cost of Ownership for the future.

The Details

A TopCoder Software Project Manager worked with key ABB stakeholders and documented all of the requirements for the application. TopCoder Software documented the following functionality required for the Project Management Dashboard Application to be successful:

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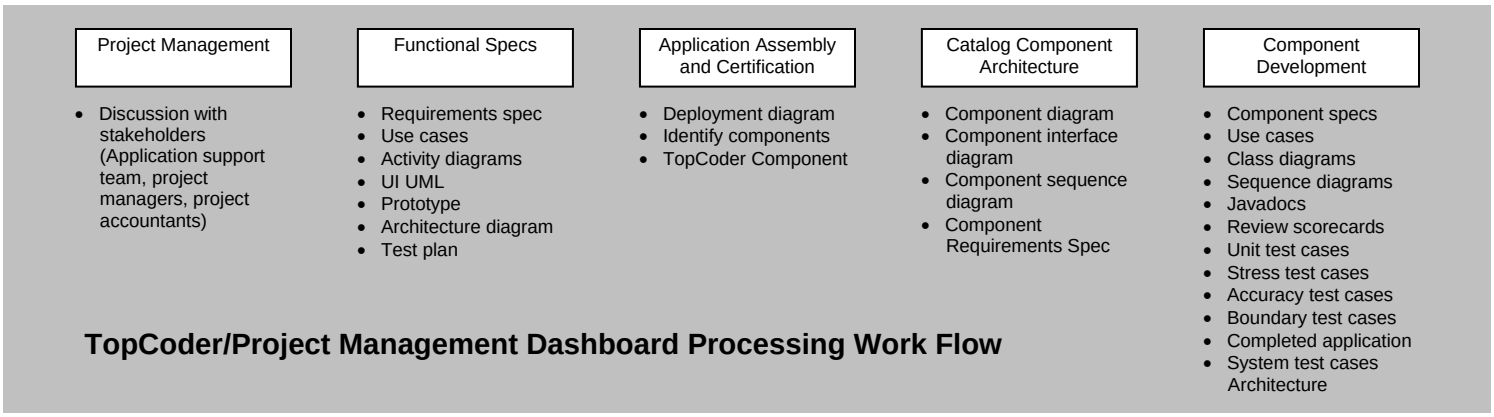

TopCoder/Project Management Dashboard Processing Work Flow

- Reduce training costs for new users of the application by introducing them to a reporting application presented in the familiar HTML paradigm;
- Expand user base beyond lower-level project managers and accountants to upper management users, allowing them to directly analyze project performance at various levels;
- Extend useful lifespan of mainframe data by leveraging existing investment in data input and management tools by adding a new user-reporting interface;

The functional specifications were further documented using high-level use case studies and activity diagrams that were input into the design phase of the project so that technical architects could create the application design. Competing designers took each of these high-level use cases and divided them into more detailed use cases during the design phase, identifying new use cases as the design was detailed.

Next, an architectural diagram was developed to describe the platforms on which the application would reside, followed by a deployment diagram.

The next phase of the methodology – design – occurred offsite through a centralized, secure online forum. For the Project Management Dashboard design phase applications were broken down into independent and parallel modules for design and application reuse. Development, integration, and certification were also conducted offsite by TopCoder Project Management and the distributed TopCoder Member Base. Developers competed, and the TopCoder Review Board worked with the winning developers before certification.

Deployment

Once Integration and Certification of the Project Management Dashboard was complete, the application was deployed to the customer's environment. It was here that integration with all legacy applications took place. It was also fully tested on a microcosm of the production environment. Once all issues were resolved, it was migrated to production.

The TopCoder Advantage

The TopCoder Methodology uses competition to ensure the highest quality solution for each phase. At least two designers and developers compete, and a Review Board made up of three of the highest rated TopCoder members evaluated each submission on a number of key metrics. Each component is packaged separately to promote reuse within other areas. In addition, this lowers the impact of changes throughout the project. TopCoder Project Managers create developer forum threads and posts for rapid updates to required changes. Compared to traditional IP consulting, the TopCoder Component-Based Methodology and reuse solution results in significant savings over the cost of the total application, higher quality in design and development, and consistent deliverables that will save significant time and resources in future phases.

About TopCoder Software

Utilizing a member base of over 54,000 talented individuals as a distributed development resource, TopCoder Software drives down the cost of software development by introducing reusable components to the development life cycle. TopCoder Software components are developed using industry frameworks such as J2EE and .NET.

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