smart.Rules

Abstract
smartObjx is a startup in the Dallas area that is developing a cloud service to allow Software-as-a-Service (SaaS) companies to develop their own products with greater speed and flexibility.

For our project, we developed an essential feature of smart.Rules, the application that enables smartObjx’s SaaS clients to provide their own users with services that can easily be customized to suit the user’s individual needs. This is done by hosting some of the SaaS company’s business logic on smartObjx’s servers and allowing end-users to non-destructively alter that logic for themselves. We also developed a web interface to allow SaaS companies and their users to manage their business logic stored on smartObjx’s servers.

These features are components of smartObjx’s minimum viable product and will be valuable to the company as it tries to bring its services to market.

Architecture

Front-End:
- Angular 6
- Angular Material
- Azure Hosting

Back-End:
- REST API
- C# & .NET Core
- ASP.NET
- RavenDB Document Database

Impact

Implemented essential feature of smart.Rules product
Improved overall system performance by more than 1300%
Contribute to future success of a local startup company

Summary

The features we developed for smartObjx’s product are two of the major factors that differentiate it from its competitors. By providing a way for non-programmers to write business logic and allowing customers of smartObjx clients to customize the services provided to them, smartObjx’s product makes it simpler for SaaS companies to build their own products more quickly and flexibly.

By developing these features, we have helped to lay the groundwork for the success of the company as smartObjx begins to bring its product to market.

Results

Front-End
- Enables non-programmers to create and modify business logic on smartObjx’s servers, both as clients of smartObjx and as users of services built using smartObjx’s product
- Allows users to debug execution of business logic to ensure correctness of implemented rules
- Deployed completed interface to Azure AppService for production use

Back-End
- Add feature that allows end-users of services built with smartObjx’s product to customize the business logic executed by those services to suit their own needs without affecting the logic used for other users of those services
- Diagnosed and fixed several bugs that negatively impacted system performance, improving service reliability and increasing overall system performance by ~1300%

Implemented essential feature of smart.Rules product

Test coverage
- >90% test coverage new backend code
- >90% test coverage of new UI code
- Sponsor’s written approval of UI design and implementation

Contribute to future success of a local startup company

The University of Texas at Dallas
Richardson, TX 75080, USA

Joseph Baccary, jcb150630@utdallas.edu; Derek Hall, dth150230@utdallas.edu; Ben Homer, bah150230@utdallas.edu; Nathan Joss, nmj150230@utdallas.edu; Devon Richards, dsr150030@utdallas.edu