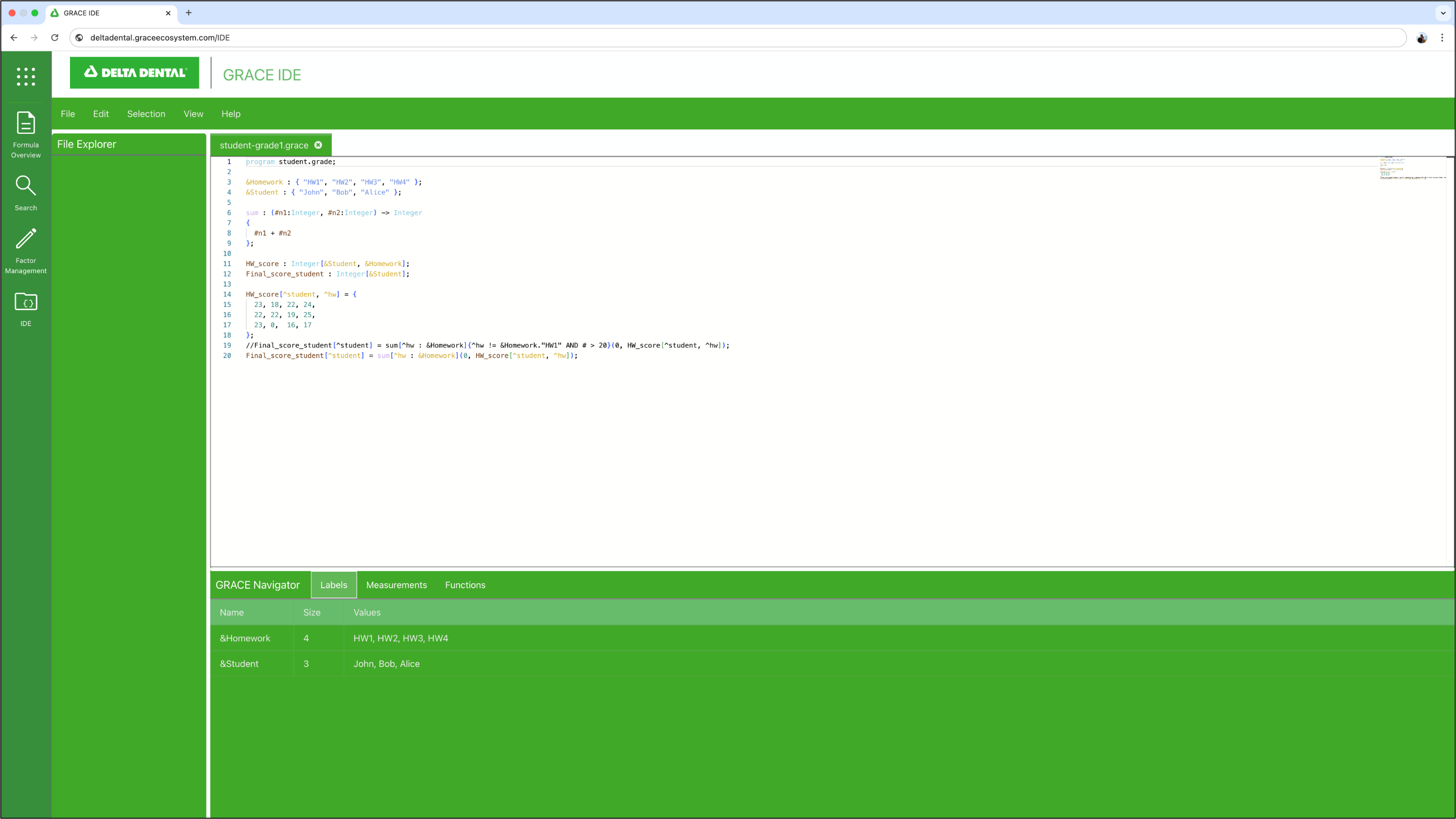
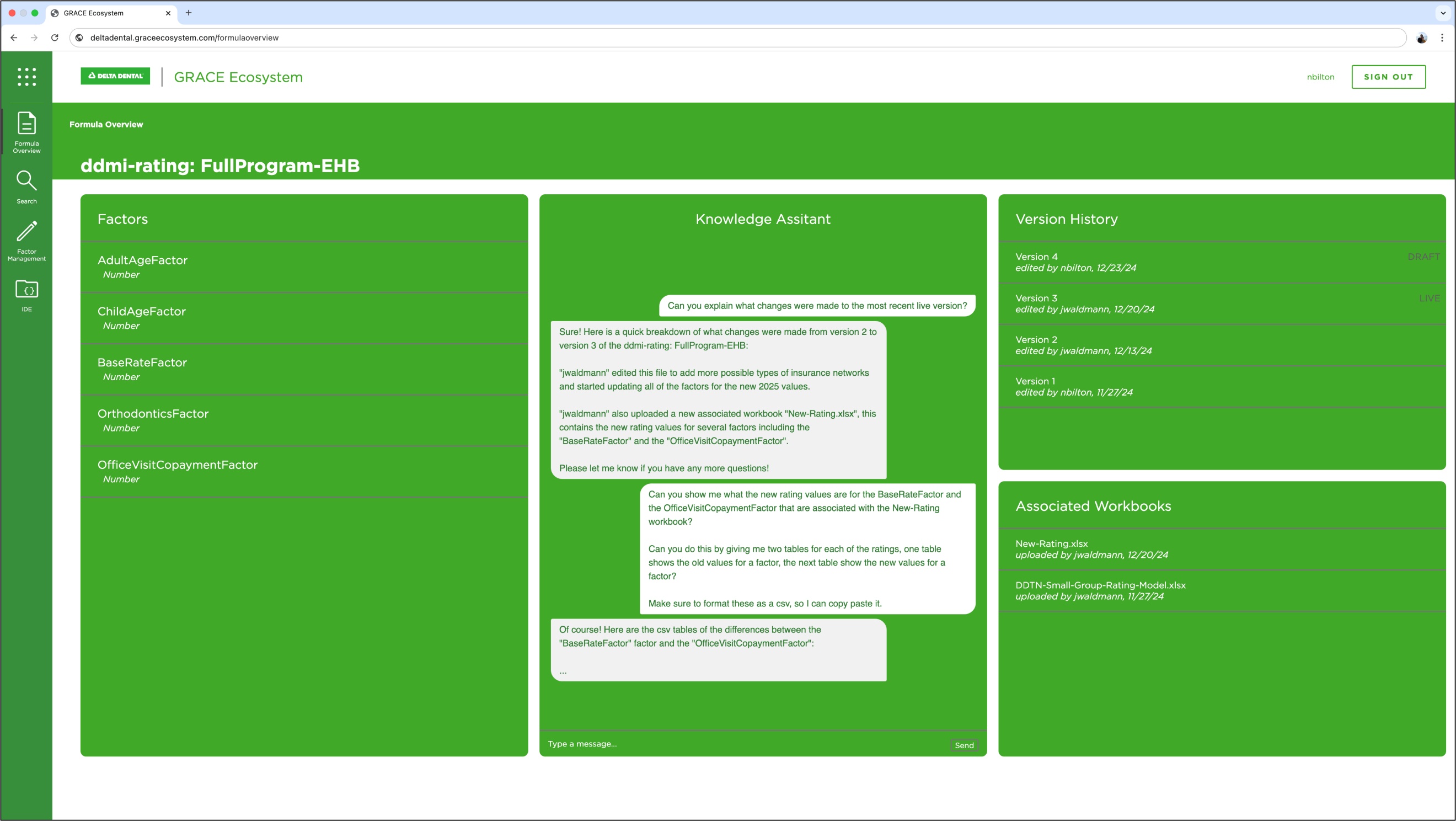
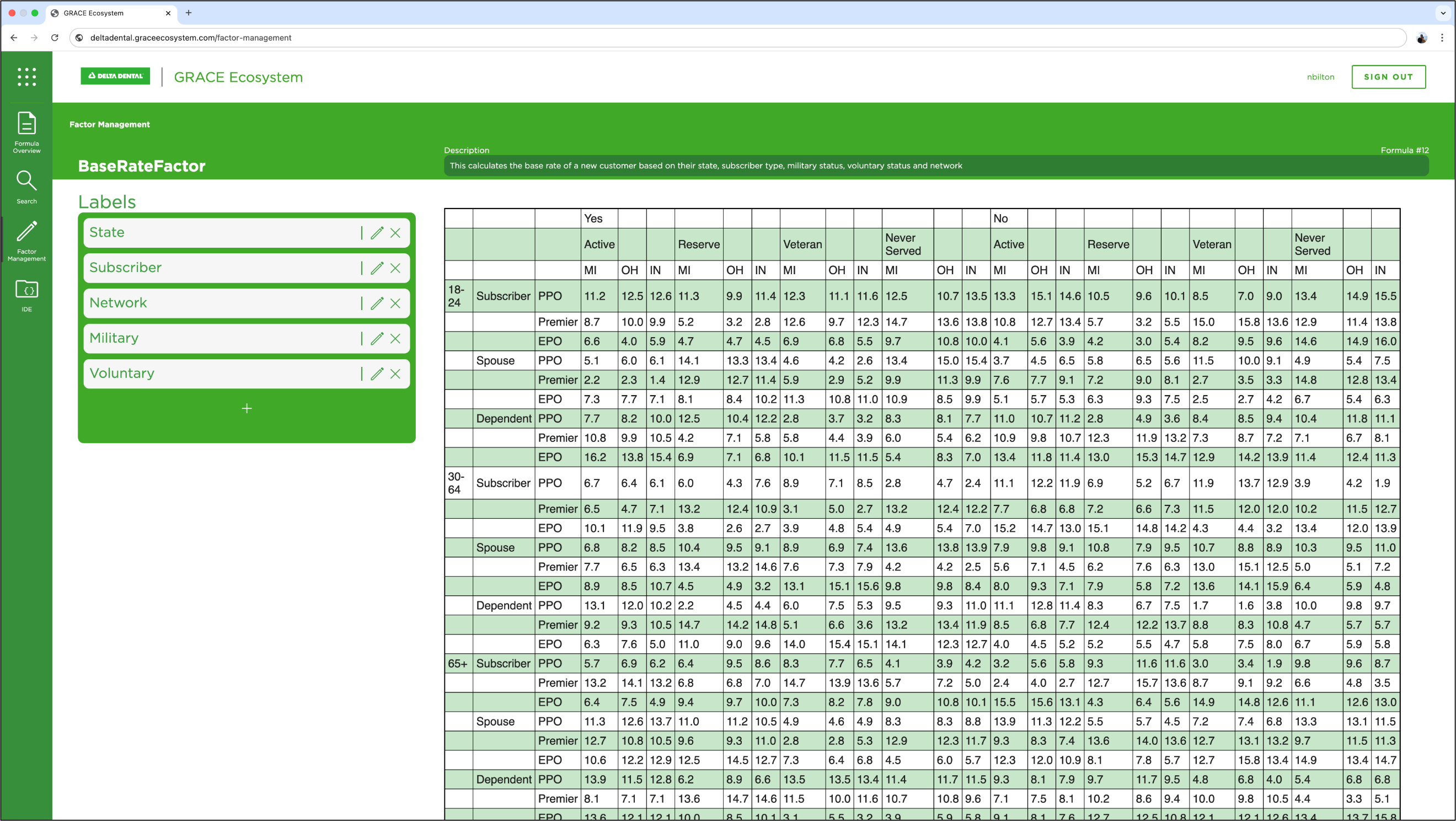
Design Day Booklet Team Page







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Delta Dental dSLATE

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Delta Dental is the nation’s leading dental insurance provider, serving over 90 million Americans in all 50 U.S. states, Puerto Rico and other U.S. territories. Delta Dental of Michigan is one of the 39 independent Delta Dental companies and has been serving the citizens of Michigan since 1957.

Delta Dental of Michigan developed their own domain-specific language (DSL) to handle complex insurance rate calculations alongside the use of Excel spreadsheets. The DSL is used in a variety of tools scattered across different platforms. However, this affects the efficiency of business operations because it is time-consuming to navigate between the various components.

Our DSL Tooling Ecosystem (dSLATE) is a web application that provides a user-friendly environment with all the necessary tools for underwriters and developers to perform rate calculations in Delta Dental’s DSL.

The tooling ecosystem includes an overview with the ability to create, search, and navigate for active insurance formulas and factors within the system, aggregating any information needed for calculations into one convenient location.

Our web application also gives developers access to an integrated development environment designed specifically for the DSL. This tool streamlines the transfer of Excel data into DSL code and shows formulas and factors involved in the process. The environment enables editing and creation of new formulas as well.

Users ask further questions of the included DSL knowledge assistant. The knowledge assistant provides information to help users understand a formula and its factors.

The front end of our system is written using Angular. The back end uses Java Quarkus with a MongoDB database to host Delta Dental’s existing core libraries and data. Microsoft’s Azure OpenAI service is used to handle the DSL knowledge assistant.

CSE498 | 8:00 a.m. – Noon Computer Science and Engineering, Third Floor | 3200/3300 Hallway

Delta Dental of Michigan, Ohio and Indiana

DSL Tooling Ecosystem (dSLATE)