



Beta Presentation

AI Rule Metadata Generator

The Capstone Experience

Team Delta Dental AIRMG

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*From Students...
...to Professionals*

Project Overview

- Delta Dental serves millions of clients, large and small
- Many intricate and hyper specific policies and business information
- Subject Matter Experts need a quick way to create, analyze, and compare these business information



Team Member's Technical Tasks

Technical Tasks Assigned

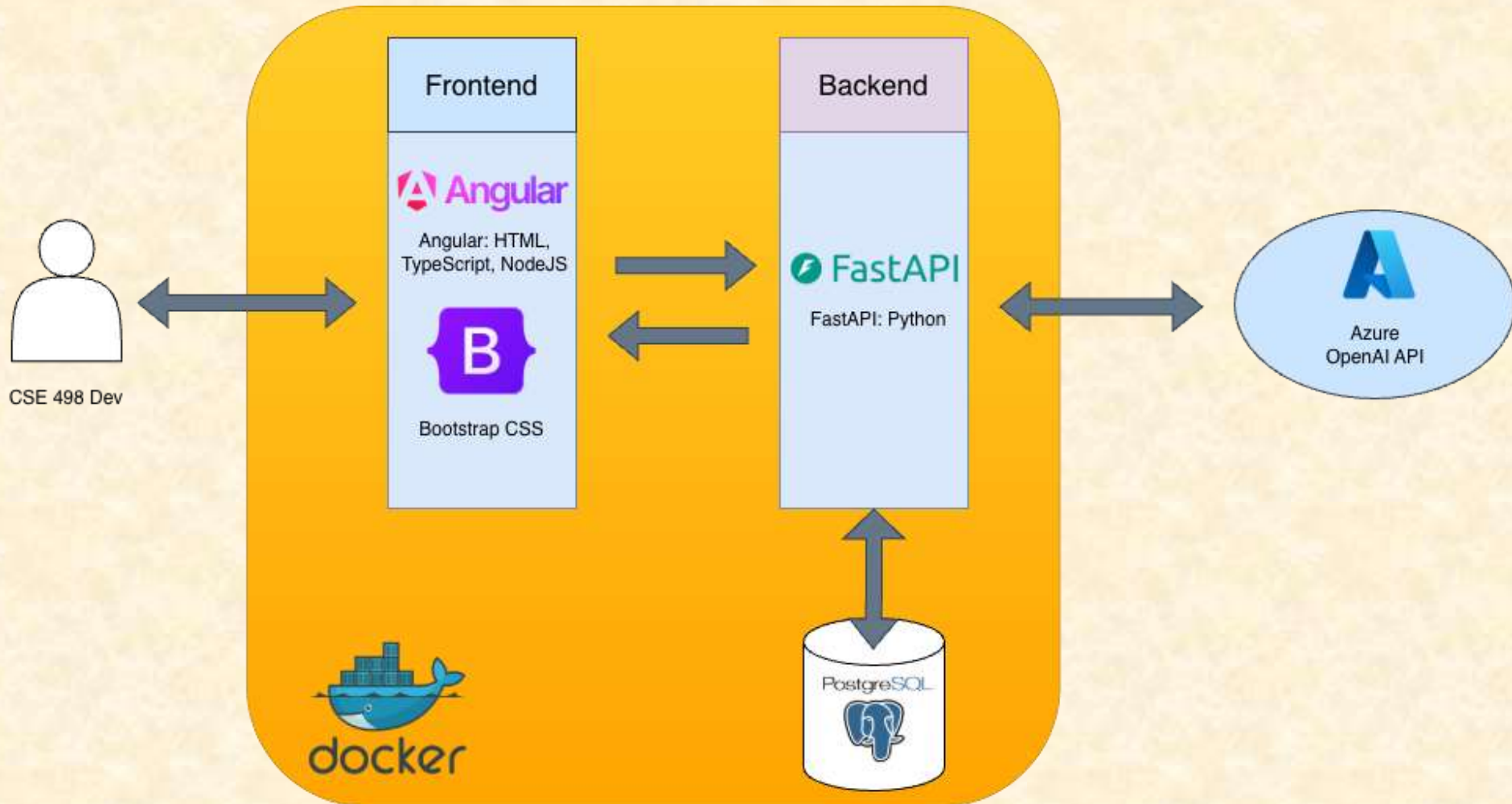
- Sricharan Devarapalli
 - Extracted page
 - Packet info display
 - Associated rule descriptions generation
 - Home page and stats displayed on home page
 - Packages page: displays all packages or selected package
- Sainatha Paamujula
 - Rule/Packet Metadata Generation + Summary
 - Package/Rule Similarity Comparison
- Akilesh Dhileepan
 - Download metadata feature
 - Edit and save changes
 - Search bar implementation + filters to navigate easier
 - Difference checker button
- Aditya Aggarwal
 - Created DB models for the received metadata
 - Worked on Backend API that fetches data from CSVs
 - Worked on seeding scripts for loading data in API
- Alex Simon
 - Fetching Packages/Packets/Rules from DB and displaying them on the frontend using API's
 - Comparison Tool selection and comparison page
- ⑩ Sit Soe
 - REST API and CRUD
 - Caching and calling LLM results

Technical Tasks Completed

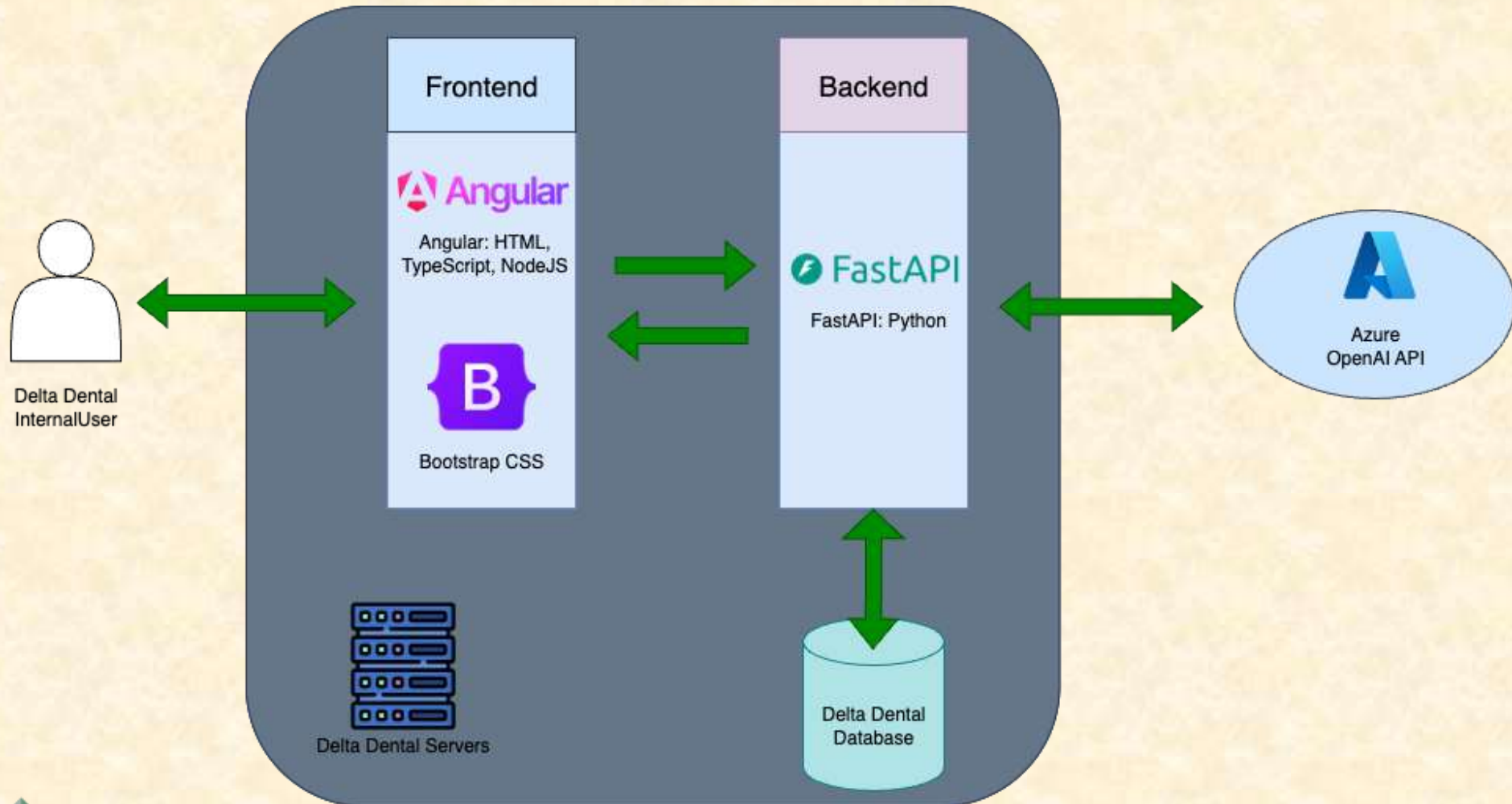
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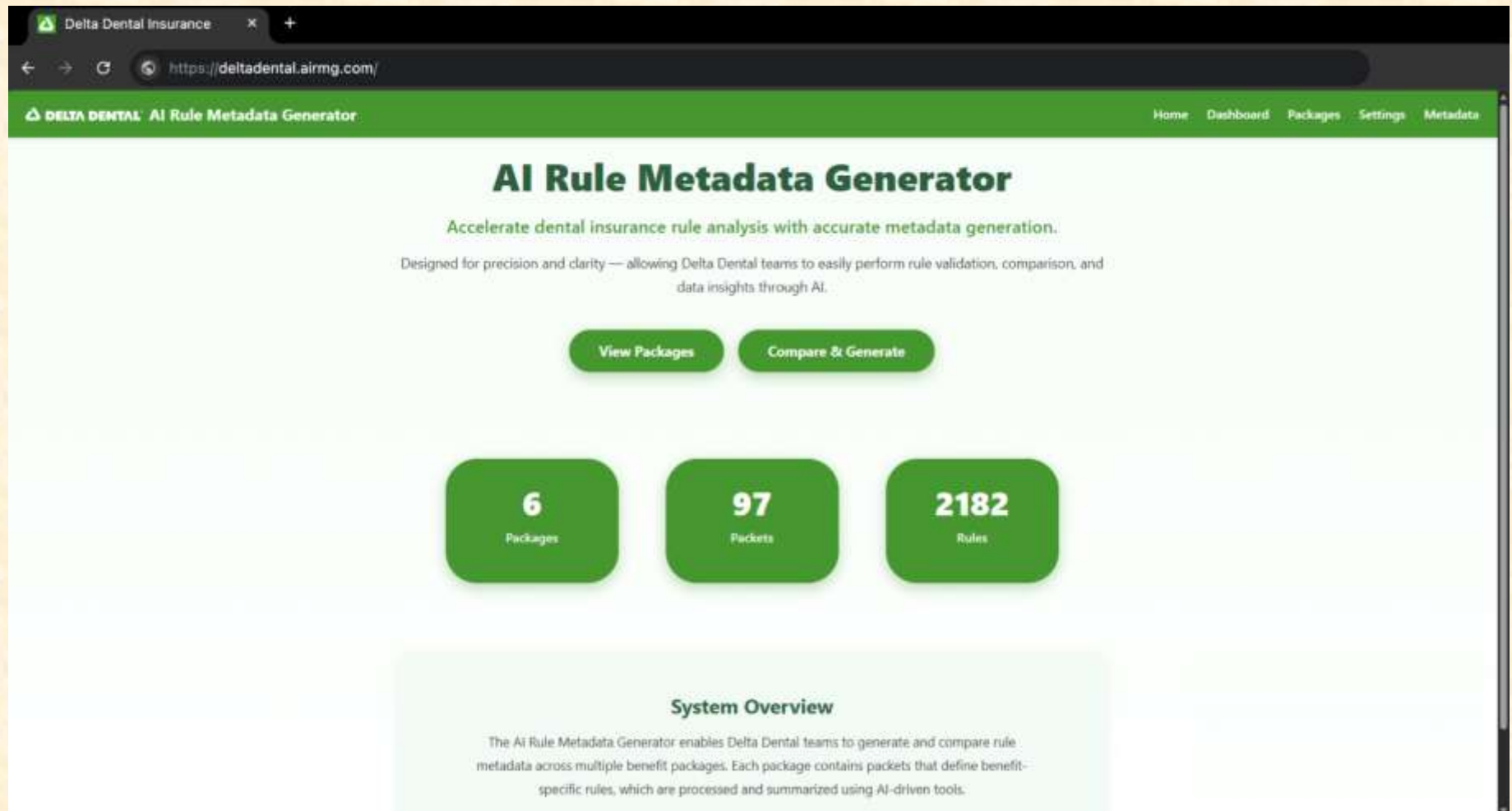
System Architecture



System Architecture



AIRMG Home page



The screenshot shows the Delta Dental AIRMG Home page. The browser tab is labeled 'Delta Dental Insurance' and the address bar shows 'https://deltadental.airmg.com/'. The page has a green header with the logo and navigation links: Home, Dashboard, Packages, Settings, and Metadata. The main content area features the title 'AI Rule Metadata Generator' and a subtitle 'Accelerate dental insurance rule analysis with accurate metadata generation.' Below this is a description: 'Designed for precision and clarity — allowing Delta Dental teams to easily perform rule validation, comparison, and data insights through AI.' Two green buttons, 'View Packages' and 'Compare & Generate', are positioned below the text. Further down, three green boxes display statistics: '6 Packages', '97 Packets', and '2182 Rules'. At the bottom, a 'System Overview' section provides a brief description of the tool's functionality.

Delta Dental Insurance x +

https://deltadental.airmg.com/

DELTA DENTAL AI Rule Metadata Generator

Home Dashboard Packages Settings Metadata

AI Rule Metadata Generator

Accelerate dental insurance rule analysis with accurate metadata generation.

Designed for precision and clarity — allowing Delta Dental teams to easily perform rule validation, comparison, and data insights through AI.

View Packages Compare & Generate

6 Packages

97 Packets

2182 Rules

System Overview

The AI Rule Metadata Generator enables Delta Dental teams to generate and compare rule metadata across multiple benefit packages. Each package contains packets that define benefit-specific rules, which are processed and summarized using AI-driven tools.



Extracted packet

The screenshot displays the Delta Dental AI Rule Metadata Generator interface. The browser address bar shows the URL <https://deltadental.airmg.com/>. The application header includes the Delta Dental logo and navigation links: Home, Dashboard, Packages, Settings, and Metadata.

Extracted Packet Metadata

Capstone Oral Eval 2/CY

Packet ID: 55053
Description: N/A
Custom Language: N/A
IVR Phrase Code: No IVR Phrase Code
Custom Message: No Custom Message
Policy Messages: No messages attached
TC: N/A

[Generate Metadata](#)

Associated Rules

HCA00005_Capstone

Description: N/A

Statement: History Cross Check Criteria: Input Procedure Code in D0120; D0140; D0145; D0150; D0160; D0170; D0171; D0180 and Include History Claim Line Status in (PAID) if plan of the Input Claim appears in DDPIH; DDPMI; DDPOH and History Procedure Code in D0120; D0140; D0145; D0150; D0160; D0170; D0171; D0180 and History and Input have the same Provider Benefit Limitations; Exceeded 1 in 1 DAYS Action to take: Disallow Claim Line Apply Processing
Policy code PP00006 Stop HCC Processing

Status: Active

Source Sheet: Diagnostic - Oral Evaluations

[Generate Rule Description](#)

This active rule (HCA00005_Capstone) prevents payment for repeat diagnostic/oral evaluation codes (D0120, D0140, D0145, D0150, D0160, D0170, D0171, D0180) under DDPIH, DDPMI or DDPOH plans if the same provider already had a paid claim for the identical code within the past 1 day. When that 1-day limit is exceeded, the claim line is disallowed, Processing Policy PP00006 is applied, and further HCC processing is stopped.



Compare packets

The screenshot displays the Delta Dental Airmg AI Rule Metadata Generator interface. The top navigation bar includes links for Home, Dashboard, Packages, Settings, and Metadata. The main content area is titled "Treatment Category: Diagnostic - FMXR BWXR" and contains a table with two rows of packet data. Below the table, there are two side-by-side panels for comparing metadata for Packet 55042 and Packet 37. The table has columns for Packet ID, Packet Name, Description, IVR Code, Custom Message, Policy Message, and a Remove button. The metadata panels show various rules and their values for each packet, with some rules highlighted in yellow to indicate differences.

PACKET ID	PACKET NAME	DESCRIPTION	IVR CODE	CUSTOM MESSAGE	POLICY MESSAGE	REMOVE
55042	Capstone FMXR 1/60, BWXR 1/1 CY	—	No IVR Phrase Code	No Custom Message	No messages attached	Remove
37	FMXR 1/60, BWXR 1/12	—	No IVR Phrase Code	No Custom Message	EL02122: Full mouth x-rays (which include bitewing x-rays) or a panorex are payable once in a five-year period. EL02450: Bitewing x-rays are payable once in any period of 12 consecutive months.	Remove

Buttons: [Hide Difference Checker](#) [Generate AI Difference Summary](#)

Metadata for Packet 55042

Group Rating FMX Frequency:	1
Group Rating FMX Time:	60
Group Rating FMX Limitation Period:	MONTHS
Group Rating FMX Factor:	—
Group Rating BWXR Frequency (All Ages):	1
Group Rating BWXR Time (All Ages):	1
Group Rating BWXR Limitation Period (All Ages):	CALENDAR_YEARS
Group Rating BWXR Factor (All Ages):	—
Group Rating BWXR To Age (Child):	9
Group Rating BWXR Frequency Age (Child):	1
Group Rating BWXR Time Age (Child):	1
Group Rating BWXR Limitation Period Age (Child):	CALENDAR_YEARS
Group Rating Factor BWXR Age (Child):	2

Metadata for Packet 37

Group Rating FMX Frequency:	1
Group Rating FMX Time:	60
Group Rating FMX Limitation Period:	MONTHS
Group Rating FMX Factor:	—
Group Rating BWXR Frequency (All Ages):	1
Group Rating BWXR Time (All Ages):	12
Group Rating BWXR Limitation Period (All Ages):	MONTHS
Group Rating BWXR Factor (All Ages):	—
Group Rating BWXR To Age (Child):	9
Group Rating BWXR Frequency Age (Child):	1
Group Rating BWXR Time Age (Child):	12
Group Rating BWXR Limitation Period Age (Child):	MONTHS
Group Rating Factor BWXR Age (Child):	—



Compare rules

The screenshot displays the Delta Dental AI Rule Metadata Generator interface. The top navigation bar includes links for Home, Dashboard, Packages, Settings, and Metadata. The main content area is divided into two sections: Rule Metadata and Rule Comparison Results.

Rule Metadata

Two rule configurations are shown side-by-side, both titled "HCA00005_Capstone".

Field	Rule 1 (HCA00005_Capstone)	Rule 2 (HCA00006_Capstone)
Frequency	1	1
Time	DAYS	1
Limitation Period	1 DAYS	DAYS
Input Procedure Codes	D0120,D0140,D0145,D0150,D0160,D0170,D0171,D0180	D0190,D0191
History Procedure Codes	D0120,D0140,D0145,D0150,D0160,D0170,D0171,D0180	D0120,D0140,D0145,D0150,D0160,D0170,D0171,D0180,D0190,D0191,D09310
Group Rating Factor		
Enhanced Evidence Based Dentistry		
Actuarial relevance	no	no

Rule Comparison Results

Comparison: HCA00005_Capstone vs HCA00006_Capstone

SIMILARITY SCORE: 90%

KEY DIFFERENCES:

Both rules share the same benefit limits, status checks, provider matching, and actions, but Rule 1 applies only to input codes D0120-D0180 with matching history codes, whereas Rule 2 applies to input codes D0190 and D0191, and expands the history code set to include D0190, D0191, and D09310.

[Go to Settings to activate Selections](#)



What's left to do?

- Features
 - UI Cleanup
 - Bug Fixes
- Stretch Goals
 - AI Chatbot
 - Taggregation
 - Edit prompting for the LLM on the frontend
- Other Tasks
 - Provide further, thorough documentation and comments on code
 - Refactor any confusing variable names, redundancies

Questions?

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