Health Insurance Assistant Business Requirements Document

1. Describing problems

The Health Insurance Assistant is a user-friendly application designed to help individuals in California quickly access personalized health insurance plans and quotes. It enables users to easily input their age, annual income, and insurance preferences to find available health insurance options from Covered California's trusted partner insurers, such as Anthem Blue Cross and Kaiser Permanente. The application clearly indicates eligibility for special discounted insurance options, offering transparent and detailed comparisons of plans to facilitate informed decision-making. By highlighting special discounts for eligible users, the Health Insurance Assistant simplifies the process of choosing the best insurance coverage, making it efficient and accessible for everyone.

2. Rules of Business

I have highlighted the nouns in blue and the verbs in brown.

1. The system must allow users to quickly input their age, annual income, and insurance tier to retrieve relevant health insurance quotes.
2. The application should retrieve and clearly display personalized health insurance quotes from Covered California partner insurers, such as Anthem Blue Cross and Kaiser Permanente.
3. The application should display insurance quotes sorted from lowest to highest price.
4. The application should provide easy-to-understand comparisons between different insurance plans to help users make informed decisions.

5. The application should clearly display "Premium Before Savings," "Savings," and "Monthly Premium (Amount You Pay)" to help users better understand insurance plan details.
6. The application should offer Medi-Cal options to financially disadvantaged families whose annual income is below $30,000.
7. The application should calculate the "Premium Before Savings," "Savings," and "Monthly Premium" based on the user's age, annual income, and selected insurance tier.
8. Each insurer offers two tiers of insurance plans—Silver and Bronze—except for Medi-Cal. Silver tier insurance plans provide better coverage compared to Bronze tier plans.
9. The system must allow users to add new insurance plans, ensuring real-time updates and keeping the available options up to date

3. Nouns and Verbs

Nouns

1. System
2. User
3. Age
4. Annual Income
5. Insurance Tier
6. Health Insurance Quote
7. Application
8. Covered California
9. Insurer (Anthem Blue Cross, Kaiser Permanente)
10. Insurance Plan
11. Comparison

12. Premium Before Savings
13. Savings
14. Monthly Premium
15. Medi-Cal
16. Family
17. Coverage (Silver, Bronze)
18. Price(lowest to highest)
19. real-time updates
20. available options

Verbs

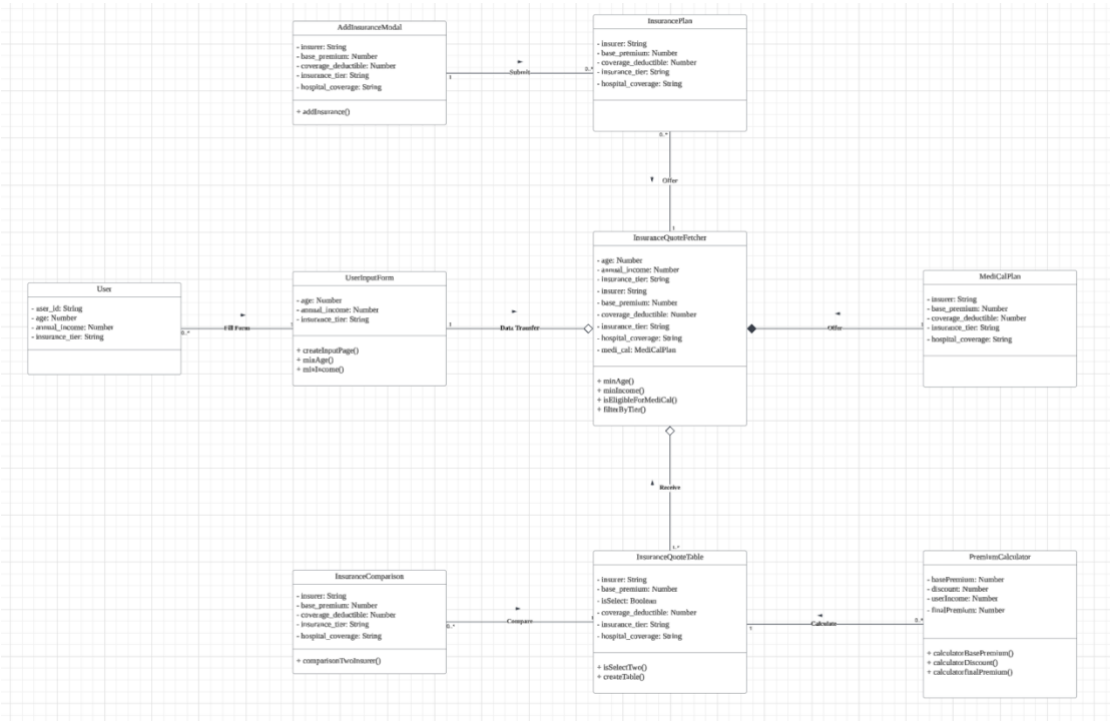
1. Allow
2. Input
3. Retrieve
4. Display
5. Sorted
6. Provide
7. Help
8. Informed
9. Offer
10. Calculate
11. Based
12. Compared
13. allow
14. add
15. keep

4. Classes and Attributes

- **User** (user_id: String, age: Number, annual_income: Number, insurance_tier: String)
- **UserInputForm** (age: Number, annual_income: Number, insurance_tier: String, + createInputPage(), + minAge(), + minIncome())
- **InsuranceQuoteFetcher** (age: Number, annual_income: Number, insurance_tier: String, base_premium: Number, coverage_deductible: Number, hospital_coverage: String, medi_cal: MedicalPlan, + minAge(), + minIncome(), + isEligibleForMedical(), + filterByTier())
- **MedicalPlan** (insurer: String, base_premium: Number, coverage_deductible: Number, insurance_tier: String, hospital_coverage: String)
- **InsurancePlan** (insurer: String, base_premium: Number, coverage_deductible: Number, insurance_tier: String, hospital_coverage: String)
- **AddInsuranceModal** (insurer: String, base_premium: Number, coverage_deductible: Number, insurance_tier: String, hospital_coverage: String, + addInsurance())
- **InsuranceComparison** (insurer: String, base_premium: Number, coverage_deductible: Number, insurance_tier: String, hospital_coverage: String, + comparisonTwoInsurer())
- **InsuranceQuoteTable** (insurer: String, base_premium: Number, isSelect: Boolean, coverage_deductible: Number, insurance_tier: String, hospital_coverage: String, + isSelectTwoInfo(), + createTable())
- **PremiumCalculator** (base_premium: Number, discount: Number, userIncome: Number, final_premium: Number, + calculateBasePremium(), + calculateDiscount(), + calculateFinalPremium())

5. Modules Diagram

link: https://lucid.app/lucidchart/62c26d22-6be1-4acb-ba23-cebe6418b7af/edit?viewport_loc=-1646%2C-1192%2C4571%2C3445%2C0_0&invitationId=inv_86c2605e-a900-4f64-b60d-4522e29f4ac1



6. Dimensions

1. Income Level – Financially Disadvantaged Families (Eligible for Medi-Cal), Middle-Income Individuals, Higher-Income Individuals
2. User Age – Young Adults (18–30), Middle-Aged Adults (31–55), Seniors (56 and above)
3. Decision-making Priority – Cost Savings (Lowest Premium Priority), Coverage Quality (Better Coverage Priority), Balanced Approach (Cost vs. Coverage)

7. Create User Personas

User Persona 1: David

Age: 25

Occupation: Freelance Graphic Artist

Income Level: Financially Disadvantaged (Eligible for Medi-Cal)

User Age Category: Young Adult (18–30)

Decision-Making Priority: Cost Savings (Lowest Premium Priority)

Background Story:

David is a self-employed graphic artist who recently transitioned from a full-time job. His irregular income makes it difficult to afford expensive health insurance plans, so he needs an affordable option that covers essential healthcare needs. Since he qualifies for Medi-Cal, he wants a simple way to check his eligibility and apply for the most cost-effective plan.

Scenario & Reason to Use Health Insurance Assistant:

- Needs to check whether he qualifies for Medi-Cal based on his fluctuating income.
- Wants the cheapest insurance plan available if Medi-Cal is not an option.
- Requires basic coverage for check-ups and emergency care, prioritizing cost over premium features.

User Persona 2: Sarah

Age: 42

Occupation: Small Business Owner

Income Level: Middle-Income Individual

User Age Category: Middle-Aged Adult (31–55)

Decision-Making Priority: Balanced Approach (Cost vs. Coverage)

Background Story:

Sarah owns a small bakery with a steady income. She needs a balanced health insurance plan that provides good coverage without excessive costs. She isn't eligible for Medi-Cal but wants a cost-effective plan with reasonable premiums and out-of-pocket expenses. Sarah values being able to compare plans to make an informed decision.

Scenario & Reason to Use Health Insurance Assistant:

- Wants a clear comparison of different Silver and Bronze-tier plans.

- Needs a plan that balances affordability with sufficient coverage for doctor visits and prescription drugs.
- Interested in subsidies or savings options to lower her monthly premium.

User Persona 3: Michael

Age: 60

Occupation: Retired Engineer

Income Level: Higher-Income Individual

User Age Category: Senior (56 and above)

Decision-Making Priority: Coverage Quality (Better Coverage Priority)

Background Story:

Michael is a retired engineer who prioritizes comprehensive health coverage. He has a comfortable retirement income and is willing to pay higher premiums for better hospital and specialist access. His focus is on premium healthcare services and long-term coverage stability rather than cost savings.

Scenario & Reason to Use Health Insurance Assistant:

- Needs to find a high-quality insurance plan with strong specialist coverage.
- Prefers Silver-tier plans over Bronze due to better benefits and lower deductibles.
- Wants detailed plan comparisons to ensure he gets the best hospital networks.

8. Target audience

(Reference AI-generated content, specify the details under AI Usage #2 as the source.)

Low-Income Individual

1. Income Level: Below $30,000 (Medi-Cal Eligible)
2. Age: 18–30
3. Priority: Cost Savings

Key Needs:

- Access to Medi-Cal or the cheapest available plan.
- Simple application with minimal complexity.
- Coverage for basic healthcare needs.

Middle-Class Individual

1. Income Level: $30,000–$80,000
2. Age: 31–55
3. Priority: Balanced Cost & Coverage

Key Needs:

- Compare Silver & Bronze plans for best value.
- Find subsidies to reduce costs.
- Clear plan details to make informed choices.

High-Income Individual

1. Income Level: Above $80,000 or retirement
2. Age: 56+
3. Priority: Comprehensive Coverage

Key Needs:

- Premium healthcare with top-tier providers.
- Lower deductibles and better benefits.
- Transparent breakdown of costs & coverage

9. User Stories

User Persona 1: David (Low-Income Individual, Cost Savings Priority)

1. As a low-income individual, I want to check if I qualify for Medi-Cal so that I can access free or low-cost healthcare.
2. As a cost-conscious user, I want to compare the cheapest available insurance plans so that I can select the most affordable option.

3. As a non-technical user, I want a simple application process without complicated insurance terms so that I can enroll quickly and easily.

User Persona 2: Sarah (Middle-Income Individual, Balanced Cost vs. Coverage Priority)

1. As a middle-income individual, I want to compare Silver and Bronze-tier plans so that I can find the best balance between cost and coverage.
2. As a budget-conscious user, I want to see available subsidies and savings so that I can reduce my monthly premium.
3. As a health-conscious user, I want clear details about deductibles and benefits so that I can choose a plan that meets my medical needs.

User Persona 3: Michael (High-Income Individual, Coverage Quality Priority)

1. As a high-income individual, I want to explore premium insurance plans so that I can access top-tier healthcare services and specialists.
2. As a detail-oriented user, I want to see a transparent breakdown of costs so that I understand exactly what I am paying for.
3. As a senior, I want to compare plans with the best hospital networks so that I can receive high-quality medical care when needed.
4. As a better coverage-priority user, I want to add new insurance plans to the system so that users can access up-to-date and relevant coverage options in real time.

10. Challenge Questions

(Reference AI-generated content, specify the details under AI Usage #1 as the source.)

1. How should we store insurance plan data efficiently while accommodating different pricing structures from various insurers?
2. If each insurance company offers different discount structures, should we store a universal discount factor or handle discounts separately per insurer?

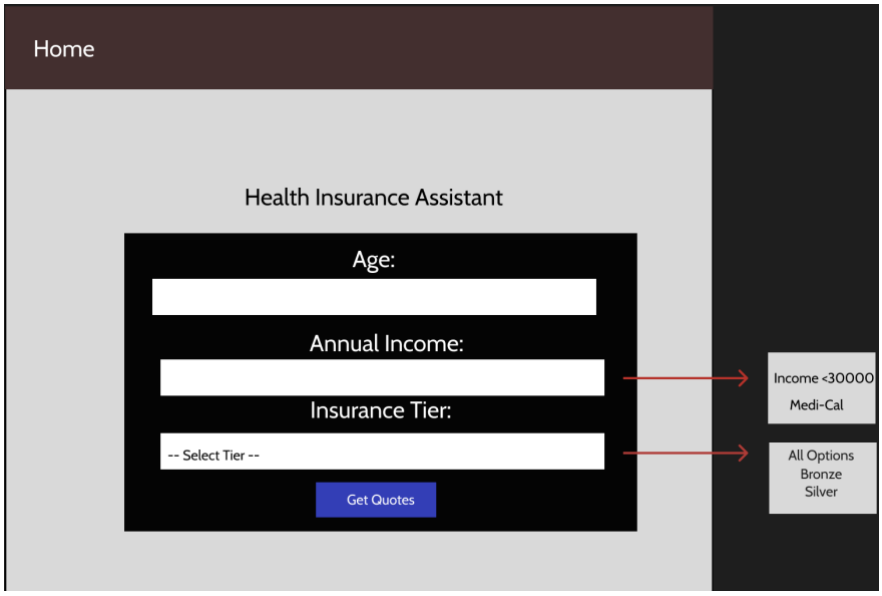
3. If a user qualifies for both Medi-Cal and a discounted plan, how do we present the best option without overwhelming them with choices?

Potential Solutions for Health Insurance Assistant

1. We can use Firestore with a structured document model to efficiently store insurance plans while supporting different pricing structures. Each plan should be stored in the insurance_plans collection, with key details such as insurer name, coverage tier, base premium, and additional coverage information. Instead of duplicating pricing logic across multiple plans, we can store insurer-independent pricing data separately and link it to the plans when retrieving quotes.
2. We hope that every insurance company uses the same discount logic. Since all insurance companies follow the same discount logic, the common discount structure should be stored in the collection. This ensures that the discount calculations remain consistent across insurance companies, making it easier to maintain and update price adjustments.
3. If a user qualifies for Medi-Cal, it should be automatically recommended as the first option since it offers the lowest cost.

11. Interface Mockups

Input Form:



David Stories

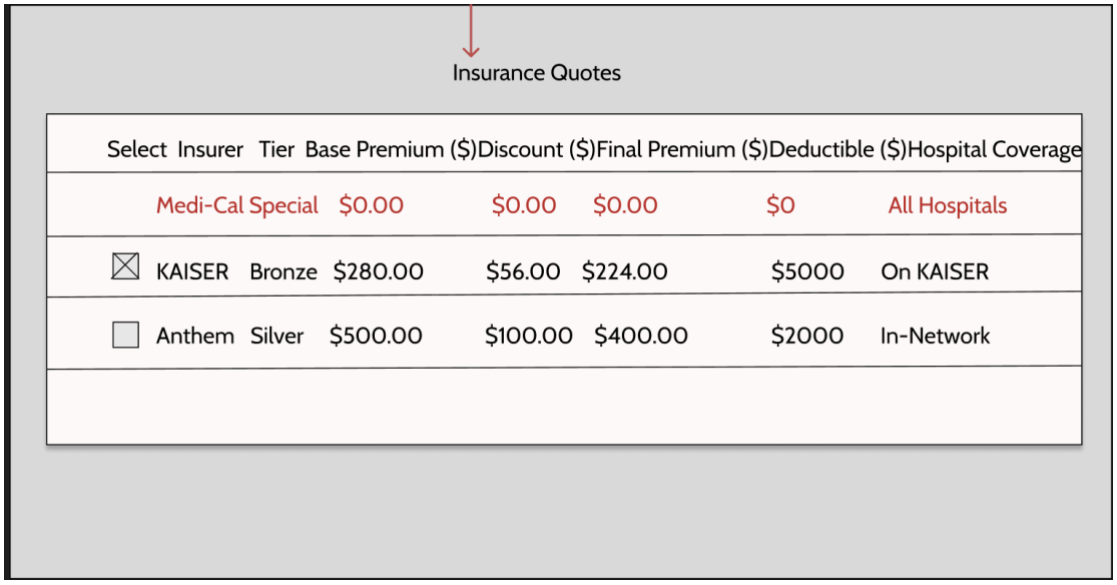
1. A simple form that allows users to input age, annual income, and insurance tier, which aligns with the user's need to check Medi-Cal eligibility.

2. A "Get Quotes" button that presumably retrieves relevant insurance options, supporting cost-conscious users in comparing affordable plans.

3. The UI now dynamically shows Medi-Cal eligibility when income is below $30,000, directly addressing David's need to check if he qualifies.

4. Clear Bronze & Silver tiers are shown, helping cost-conscious users compare coverage. The "All Options" choice allows users to see all available plans.

Insurance Quote Table:



Sarah Stories

1. Silver and Bronze plans are listed (Kaiser Bronze & Anthem Silver).

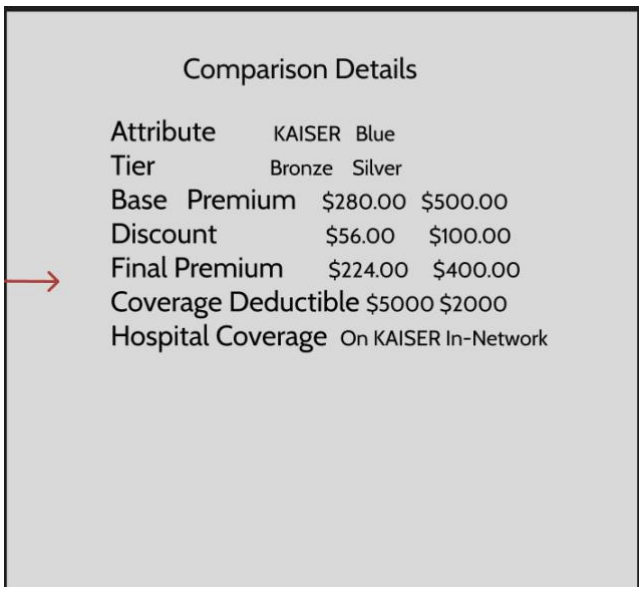
The user can compare costs and coverage details to decide on the best balance.

2. The table shows discounts ("Savings" column) and final premium prices, helping users understand subsidies.

3. Medi-Cal is highlighted in red, making it clear as a no-cost option.

4. Deductibles are listed. The "Hospital Coverage" column indicates network options (On Kaiser vs. In-Network), helping users assess benefits.

Comparison Table:

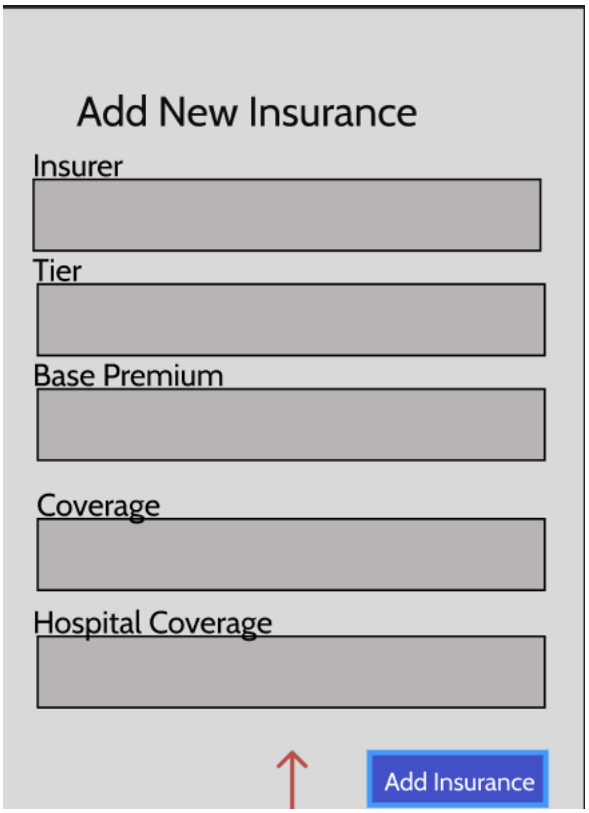


Michael Stories

1.The image provides a transparent cost breakdown, including base premium, discount, final premium, deductible, and hospital coverage, helping users clearly understand what they are paying for.

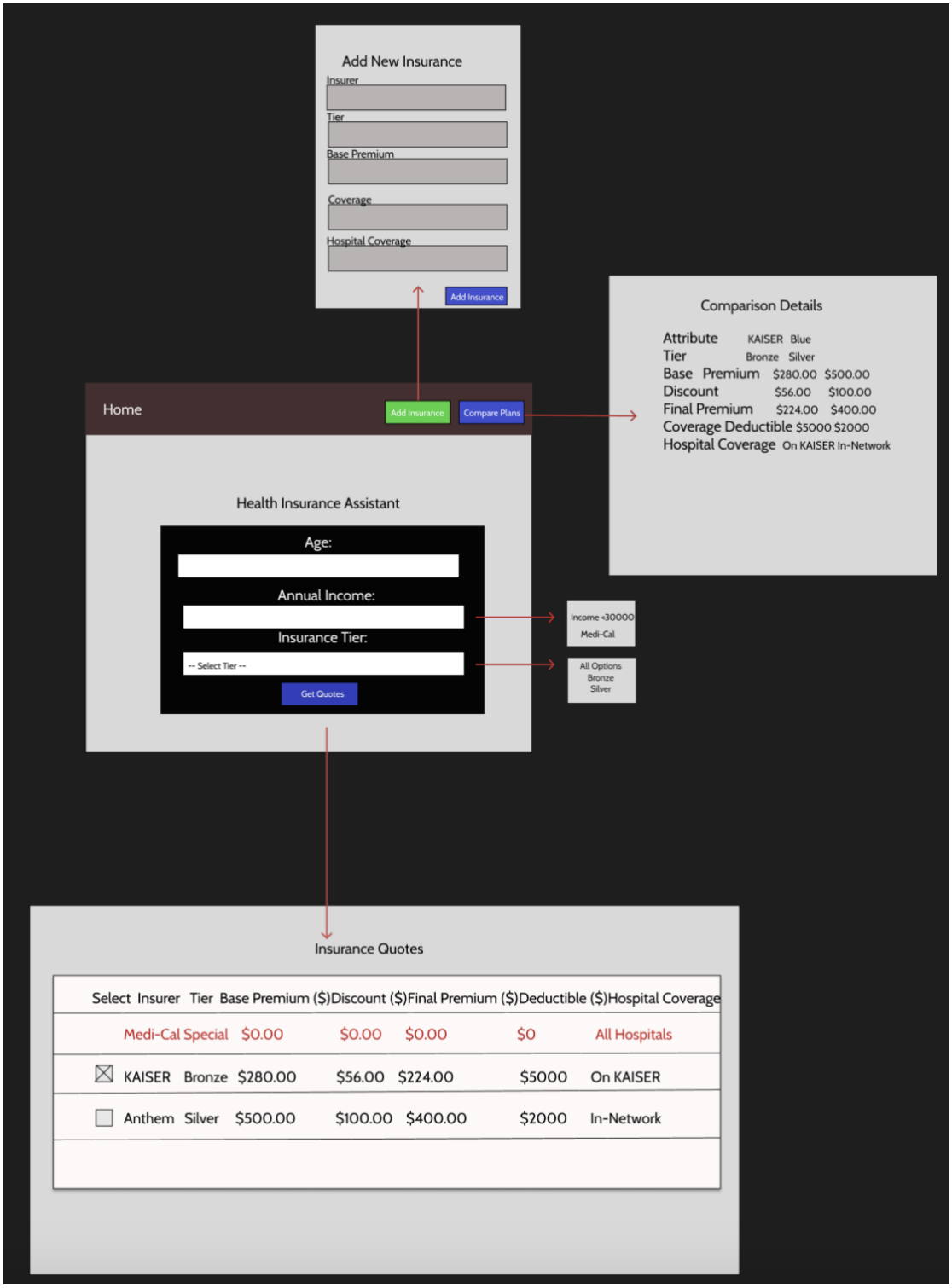
2.high-income users can utilize this information to filter and compare premium insurance plans.

Add Insurance *Table:*



1. System can add new insurance plans, ensuring that users have access to up-to-date and relevant coverage options.
2. System can compare hospital networks, the ability to add new insurance options allows users to input and access information about hospital coverage, which can be useful for seniors seeking high-quality medical care.

Link: https://www.figma.com/design/ksccS9X5VI09JCaygX1w7I/Interface-Mockups?node-id=0-1&t=yrLcQ8gu3N4iwkfd-1



12.AI usage

#1

I used AI to give me the Potential Solutions of Challenge Questions

Model: ChatGPT 4o

Attachment: Challenge Questions

Prompts: How should we store insurance plan data efficiently while accommodating different pricing structures from various insurers?

Since insurers may have different pricing based on age, income, region, or tier, maintain a separate Pricing Structures table that allows for variable pricing models per plan.

Ensure this table includes parameters such as base premium, deductible, and discount eligibility to accommodate insurer-specific structures.

Optimize for Fast Queries and Comparisons

How it was used: I have refined the " Potential Solutions " section by incorporating the ideas and keywords provided in the Prompts.

How you verified that the results were correct: The attributes insurer, base premium, coverage deductible, and insurance tier have been moved to the database to ensure efficient data storage and retrieval. Meanwhile, all save operations, and premium calculations are now handled within the PremiumCalculator to keep the system modular and maintain clear separation between data storage and computation.

#2

I used AI summarize to Target audience

Model: ChatGPT 4o

Attachment: User Stories

Prompts: The **Health Insurance Finder** targets three key user groups with specific healthcare needs:

Low-Income Individuals (Cost Savings Priority)

Focus: Affordable or free healthcare.
Needs: Medi-Cal eligibility checks, cheapest plan comparisons, simple enrollment.
Middle-Income Individuals (Balanced Cost vs. Coverage Priority)
Focus: Cost-benefit balance.
Needs: Bronze and Silver plans comparison, subsidy visibility, clear deductibles/benefits.
High-Income Individuals (Coverage Quality Priority)
Focus: Premium services and top-tier providers.
Needs: Gold and Platinum plans exploration, detailed cost breakdowns, top hospital networks, ability to add new plans.
Tailored features for each group's priorities.

How it was used: I have refined the " Target audience " section by incorporating the ideas and keywords provided in the Prompts.

How you verified that the results were correct: I compared my User Stories and found that they were basically the same.