

# Capstone Project

**Project Title:** Predictive Health Insurance Model for AGI Insurance

**Client:** AGI Insurance

**Service Provider:** Apex technology AI

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## Project Overview

Apex technology AI will develop a predictive model for AGI Insurance to estimate health insurance premiums based on factors like age, smoking habits, BMI, and medical history. The project has two phases:

1. **Phase 1 (MVP):** Build and deploy a predictive model with a Streamlit application.
  2. **Phase 2:** Develop infrastructure for straight-through processing (STP) of insurance quotes (detailed planning and estimation for this phase will be done later).
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## Phase 1: MVP Development

### Objective:

- Develop a high-accuracy (>67%) predictive model. The percentage difference between the predicted and actual value on a minimum of 65% of the errors should be less than 10%.
- Deploy the model in the cloud so that an insurance underwriter can run it from anywhere.
- Create an interactive Streamlit application that an underwriter can use for predictions.

### Scope of Work:

1. **Data Collection and Preprocessing**
  - Collect and clean labeled datasets.
  - Perform exploratory data analysis (EDA).
2. **Model Development**
  - Train and evaluate multiple models.
  - Optimize the best model for accuracy.
3. **Model Deployment**
  - Deploy the model on a cloud platform.
  - Ensure security and scalability.
4. **Streamlit Application Development**
  - Build an interactive app for inputting factors and displaying predictions.

## 5. Testing and Validation

- Rigorous testing and validation with real-world data.

## 6. Documentation and Training

- Provide documentation and training for underwriters.

### Deliverables:

- Trained model, deployed model, Streamlit app, documentation, and training materials.
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### Project Timeline

#### Phase 1:

- Data Collection and Preprocessing:
  - Model Development and Evaluation:
  - Deployment and Application Development:
  - Testing, Validation, Documentation, and Training:
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### Acceptance Criteria

#### Phase 1:

- Successful deployment of the model and application.
  - Model meets accuracy requirements 67 % minimum.
  - Application usable by underwriters.
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### Signatures

AGI Insurance Representative: \_\_\_\_\_ Date: \_\_\_\_\_

Apex technology AI Representative: \_\_\_\_\_ Date: \_\_\_\_\_