

# Insurance Claims Management and Risk Analysis Tool

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## Objective

Build a simplified insurance claim management and risk analysis application using Python.

## Problem Statement

You are tasked with developing a Python-based application for ABC insurance company. The system will allow:

### 1. Policyholder Management:

- Register policyholders with the following attributes:
  - Name
  - Age
  - Policy Type (Health, Vehicle, Life)
  - Sum Insured

### 2. Claim Management:

- Add claims for registered policyholders, with:
  - Claim ID
  - Policyholder ID
  - Claim Amount
  - Reason
  - Claim Status (Pending, Approved, Rejected)
  - Date of Claim

### 3. Risk Analysis:

- Calculate claim frequency per policyholder
- Identify high-risk policyholders:
  - More than 3 claims in the last year
  - High claim ratio (e.g., total claim amount > 80% of sum insured)
- Aggregate and display claims by policy type

### 4. Reports Module:

- Total claims per month
- Average claim amount by policy type
- Highest claim filed
- List of policyholders with pending claims

## Requirements

- Use Python 3.x
- Build a Web-based interface (Flask, FastAPI, or Streamlit)
- Store data using:
  - In-memory data structures (for core requirement)
  - Optionally persist using JSON, CSV etc.
- Ensure modular code using classes and functions
- Add input validation and exception handling

## Bonus Tasks

- Develop a REST API for all core functionalities
- Use Oracle dB/CX-Oracle for data storage
- Add unit tests for the risk analysis logic
- Provide a Docker file for easy containerization

## Deliverables

- Python source code (GitHub repo)
- README with:
  - Setup instructions
  - Usage guide (example commands or API usage)
- **Optional:**
  - Postman/Swagger API documentation

## Note:

1. You will be interviewed based on your response.
2. Plagiarism and the use of LLMs will affect your score adversely.