**Project Vision**

This project harnesses the power of advanced analytics and global health data to uncover actionable insights into cancer care, outcomes, and disparities. Using a robust dataset of 50,000 cancer patient records collected from multiple countries between 2015 and 2024, we aim to bridge the gap between raw data and life-saving decisions.

**What the Data Covers**

* Our dataset offers a 360-degree view of cancer patient profiles, including:
* **Demographics:** Age, gender, country, year of diagnosis.
* **Genetic & Lifestyle Risks:** Genetic predisposition, smoking, alcohol use, obesity
* **Environmental Exposure:** Air pollution
* **Clinical & Economic Variables:** Cancer type, stage, treatment cost
* **Patient Outcomes:** Survival years, severity scores

**Core Objectives**

**🔍 1. Exploratory Data Analysis (EDA)**

* Identify key trends, hidden patterns, and relationships
* Visualize disparities in diagnosis, lifestyle, treatment, and outcomes
* Highlight variations across countries, age groups, and cancer stages

**2. Inferential & Predictive Analytics**

Using statistical methods, we’ll explore and answer critical healthcare questions:

* Determine the relationship between risk factors and cancer severity
* Analyze the proportion of early-stage diagnoses by cancer type
* Identify key predictors of cancer severity and survival years
* Explore the economic burden of cancer treatment across different demographics and countries
* Assess whether higher treatment cost is associated with longer survival
* Evaluate if higher cancer stages lead to greater treatment costs and reduced survival years
* Examine whether higher genetic risk amplifies the negative effects of smoking on cancer severity and survival outcomes
* **3. Insight Extraction and Documentation**
* For each major analysis, we will draw clear, evidence-backed inferences
* All findings will be systematically documented for future clinical, academic, and operational use
* Each insight will be linked to real-world implications—to guide decision-making and policy formulation