# PREDICTIVE MODELING FOR CANCER SCREENING

# TEAM 1

BRANTON KIETI

FAITH GITAU

DAVID GITHAIGA

BAKER OTIENO

LINET WANGUI

DAVID KIRIANJA

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# PROBLEM STATEMENT

- Implementing data-driven strategies is imperative for Kenya to enhance cancer screening programs, combatting barriers like limited awareness, inadequate infrastructure, and financial constraints. By prioritizing early detection through these methods, Kenya can significantly alleviate the burden of cancer and reduce mortality rates.

# BUSINESS UNDERSTANDING

- Cancer ranks as the third leading cause of death in Kenya, with late diagnosis contributing to high mortality rates.
- The project aims to enhance cancer screening efforts through data-driven strategies to address the urgent need for improved screening programs and increased participation rates.
- By identifying high-risk populations and implementing targeted interventions, the project anticipates increased screening participation rates, earlier detection of cancers, and improved treatment outcomes.
- Through this initiative, the project aims to significantly reduce cancer-related morbidity and mortality, improve public health outcomes, and ultimately save lives in Kenya.

# RESEARCH QUESTION

1. What factors contribute to early detection of cancer among high-risk individuals?

2. How can predictive modeling using BRFSS data aid in identifying individuals at risk of cancer?

3. What are the implications of improving cancer screening efforts for public health outcomes in Kenya?

# RESEARCH FINDINGS

1. What factors contribute to early detection of cancer among high-risk individuals?

- Age
- Whether had children or not
- Weight
- Height
- Marital status
- Physical health
- Mental health

# RESEARCH FINDINGS

2. How can predictive modeling using the dataset aid in identifying individuals at risk of cancer?

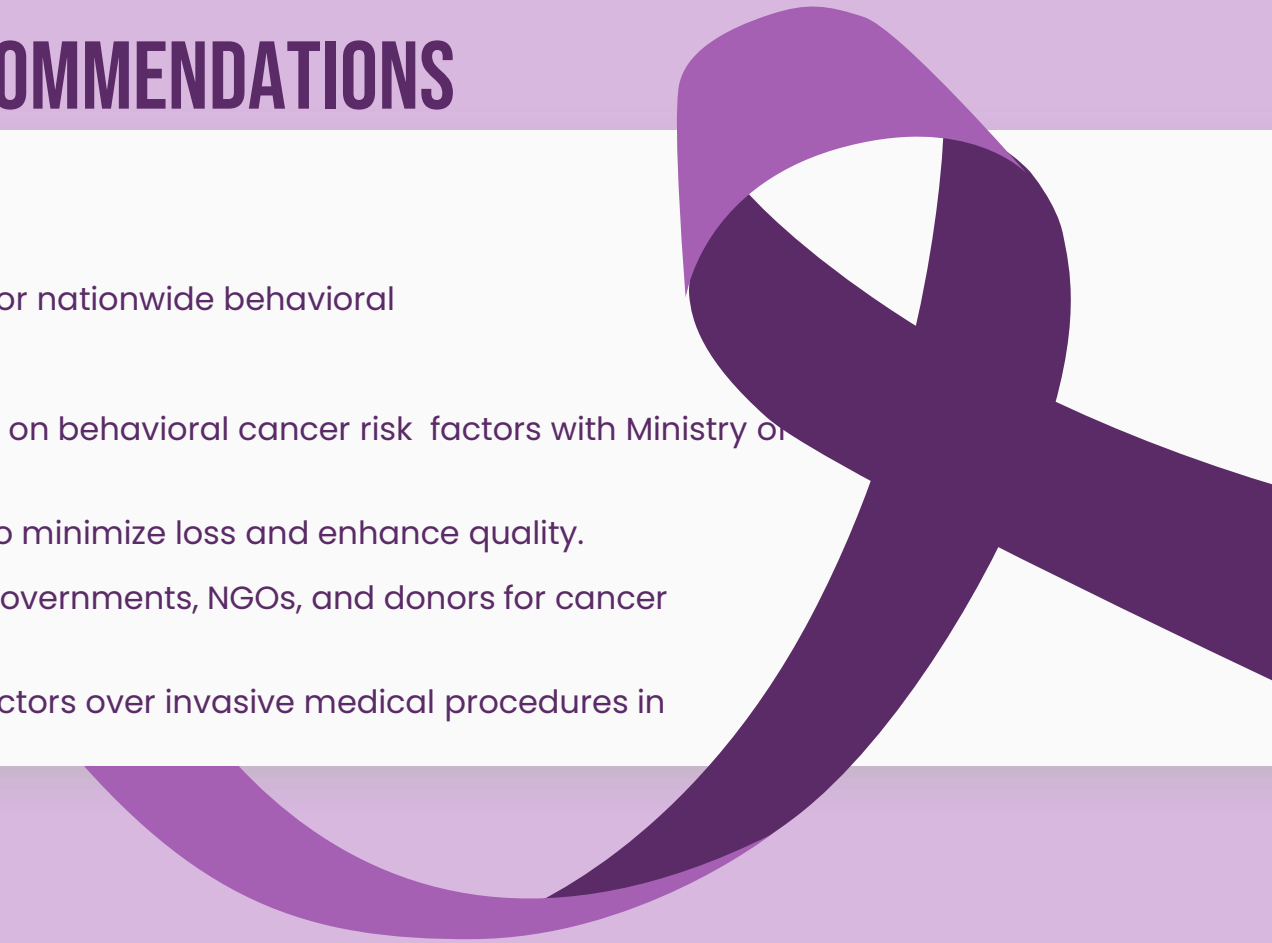
The model used in this project shows that we can use behavioral health factors to determine the level of risk(% scoring) of cancer of individuals, hence helping them determine the next course of action eg. going for physical cancer screening test.

3 What are the implications of improving cancer screening efforts for public health outcomes in Kenya?

- Lower mortality due improved early screening.
- Optimizing resource allocation for cancer programs.
- Improved public awareness of cancer.
- Improved quality of life.

# RECOMMENDATIONS

- Utilize county health workers for nationwide behavioral
- health data collection.
- Establish a national database on behavioral cancer risk factors with Ministry of Health.
- Improve collection methods to minimize loss and enhance quality.
- Secure support from county governments, NGOs, and donors for cancer screening initiative.
- Focus on behavioral health factors over invasive medical procedures in screening programs.



# CONCLUSION

- Employed a data-first strategy to construct a supervised machine learning algorithm for predicting cancer likelihood.
- Identified county health government departments as optimal stakeholders.
- Proposed technology for enhancing nationwide cancer screening efforts and designing educational campaigns.
- Emphasized ease of use and accessibility of the technology for mass data collection and dissemination of cancer education.

# OUTCOME

- Design a user-friendly interface where new users can input their responses to the questions related to behavioral risk factors.
- Once the user submits their responses, it display the prediction results to the user, such as a percentage probability or risk score.

EARLY DETECTION MAKES A DIFFERENCE

THANKS