
**Early Warning System for Students Dropouts**

oneAPI

Team Name - Team OXYGEN

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# Problem Statement

## Increasing student dropout in school and colleges

- Early student dropout is a problem that affects individuals and society.
- COVID-19 has exacerbated the problem, leading to increased dropout rates.
- COVID-19 There are many underlying causes of early dropout, including financial constraints, lack of support and poor academic performance

# Our solution

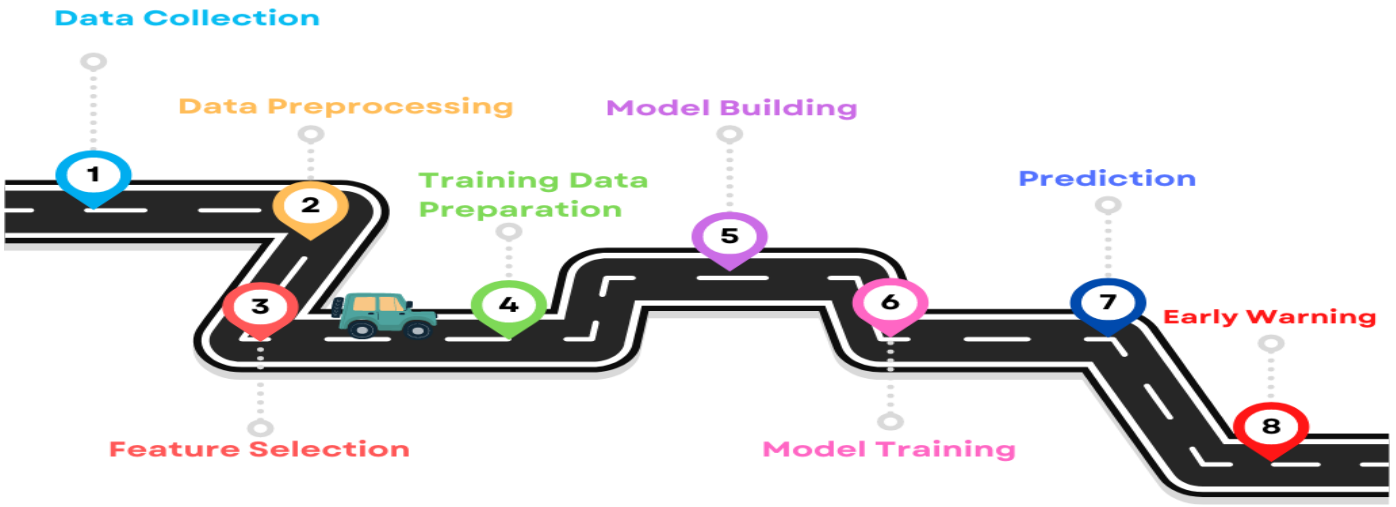
•The system will use machine learning algorithms to identify students who are at risk of dropping out of school, particularly by using the Kmeans clustering method

•The system will be scalable, cost-friendly, and innovative.

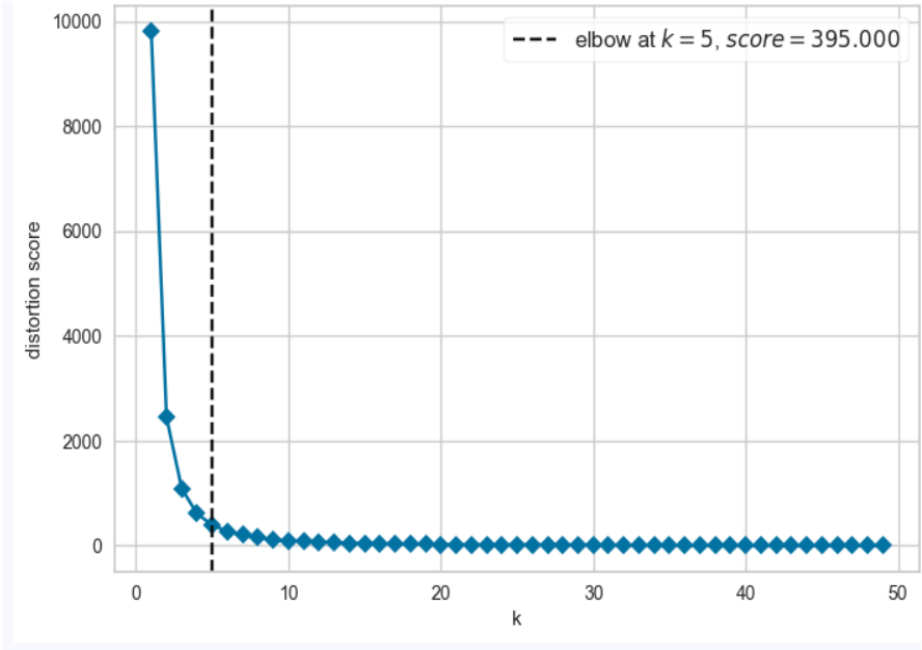
•The system will help improve student retention rates and promote equitable access to quality education.

•The system will be developed using Intel® AI Analytics Toolkits and its libraries

# Process and architecture flowchart



# Distortion Score elbow for Kmeans clustering



# Architecture – Impact of oneAPI AI Toolkit & its Libraries (How oneAPI helped us?)

- Leverage Intel Optimizations in Scikit-Learn
- Intel Gives Scikit-Learn the Performance Boost Data which we need
- Accelerate Your scikit-learn Applications
- Accelerate K-Means Clustering

# Core components of oneAPI AI Toolkit & its Libraries used in the project

1. Intel® AI Analytics Toolkit

2. Intel® Math Kernel Library (Intel® MKL):

3. Intel oneAPI Data Analytics Library (oneDAL):

# Live Demo
# On elaboration of oneAPI AI Toolkit & its Libraries

*Live demo by karnal*

# GitHub Link (Codes should be public and available after hackathon also)

https://github.com/RuPaul23/intel-oneAPI

# Results Summary (focus on unique aspects of oneAPI AI Toolkit & its Libraries /SYCL that you have used)

Intel MKL is a library that provides optimized mathematical functions for high-performance computing.

Intel oneDAL is a library for accelerated data analytics tasks, offering optimized algorithms and integration with popular frameworks. Both libraries help developers leverage Intel architectures for faster and more efficient mathematical and data analytics computation

The Intel AI Analytics Toolkit, combining the Intel Distribution for Python with highly optimized scikit-learn, provides us developers with a powerful toolset for accelerated and efficient data analytics and machine learning tasks. It offers improved performance, scalability, and compatibility, enabling users for a faster and more optimized AI and data analytics workflows.

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intel

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# THANK YOU