



# ACADEMIC RETENTION FORECAST

**EDU**AID

**EMPOWERING AT-RISK STUDENTS TO THRIVE—ACADEMICALLY,  
SOCIALY, AND BEYOND**

# TEAM SPOTLIGHT : ROLES & RESPONSIBILITIES

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- Hardik Pichholiya - 24BCE10293 - Data Handling
- Kavyansh Krishan - 24BCE10785 - Frontend Development
- Vaidehi Dadheech - 24BCE11043 - Machine Learning
- Nishtha Wadaskar - 24BCE10608 - Database Manager

# The Challenge:

**The Core Issue:** Student dropout is a critical problem with far-reaching consequences for individuals and society.

**Key Statistic:** The student dropout rate in India is a significant concern, ranging from 15% to 25%

**The Ripple Effect:** Dropout leads to lower earnings for students, damaged reputations for institutions, and a reduced workforce for society.

**Why it Happens?** 

- Academic Failure
- Financial Hardship
- Lack of Motivation
- Mental Health

# Our Goal:

Proactive and Personalized  
Support

## Primary Objective:

To build a proactive, intelligent system that empowers institutions to identify and support at-risk students

## We Aim To:

- **Detect Risk Early:** Identify students before it's too late.
- **Enable Data-Driven Decisions:** Equip institutions with clear, actionable insights to improve retention.
- **Personalize Interventions:** Recommend support strategies for each student.
- **Give a Second Chance:** Ensure students have a fair chance to succeed instead of fading out quietly

# Our Plan:

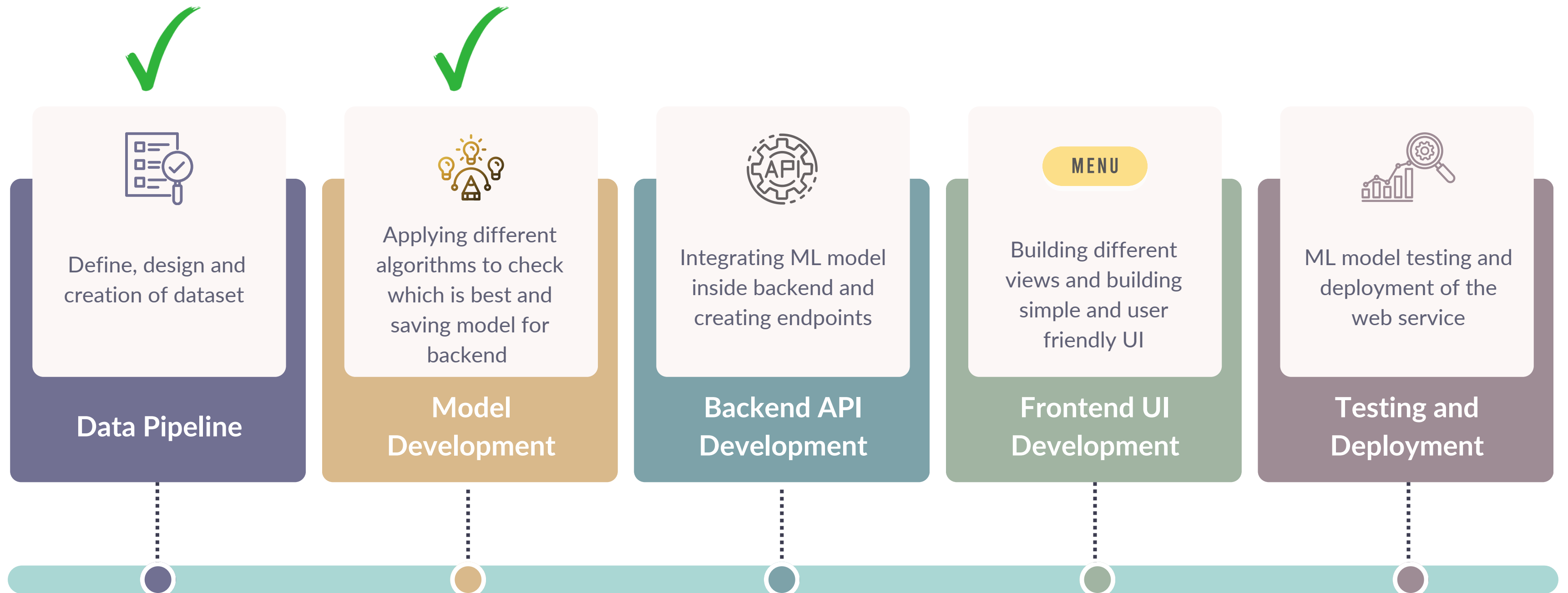


A web application that :

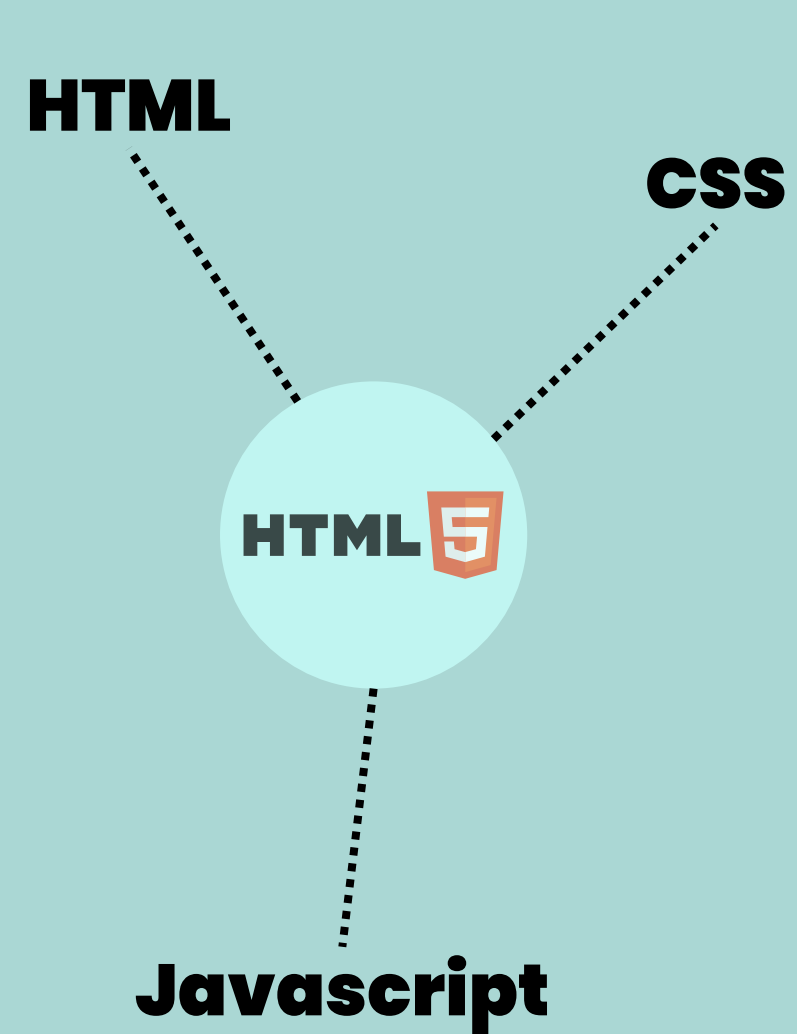
- 1 - Uses a pre-trained Machine Learning model to identify students at risk of dropping out.
- 2 - Lets Faculty see at-risk students, send them counselling messages, and track their situations.
- 3 - Lets Students log in to see their academic performance and dropout risk status.
- 4 - If a student's risk is due to financial problems, they can request help from NGOs for funding support.

# ROADMAP

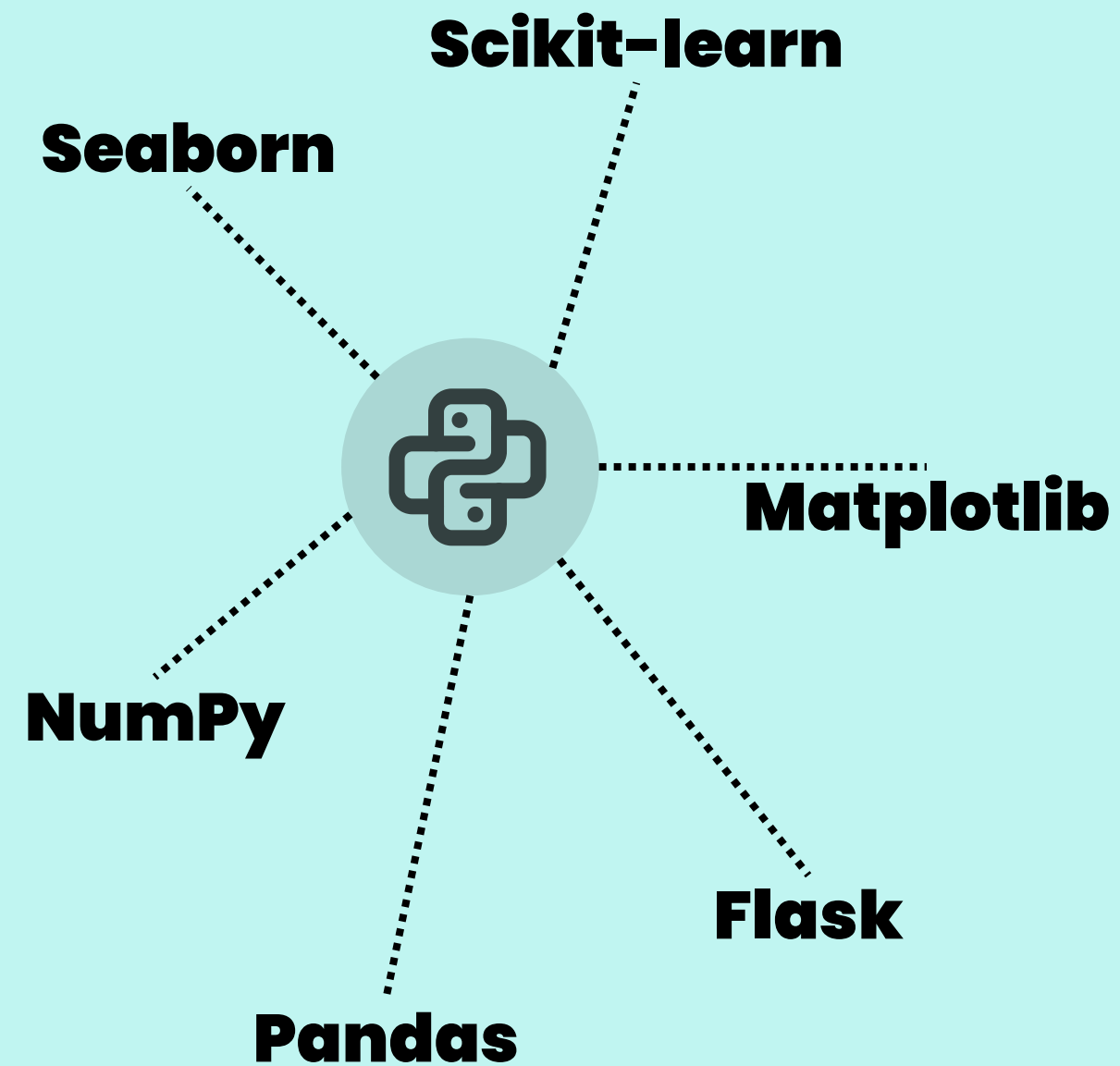
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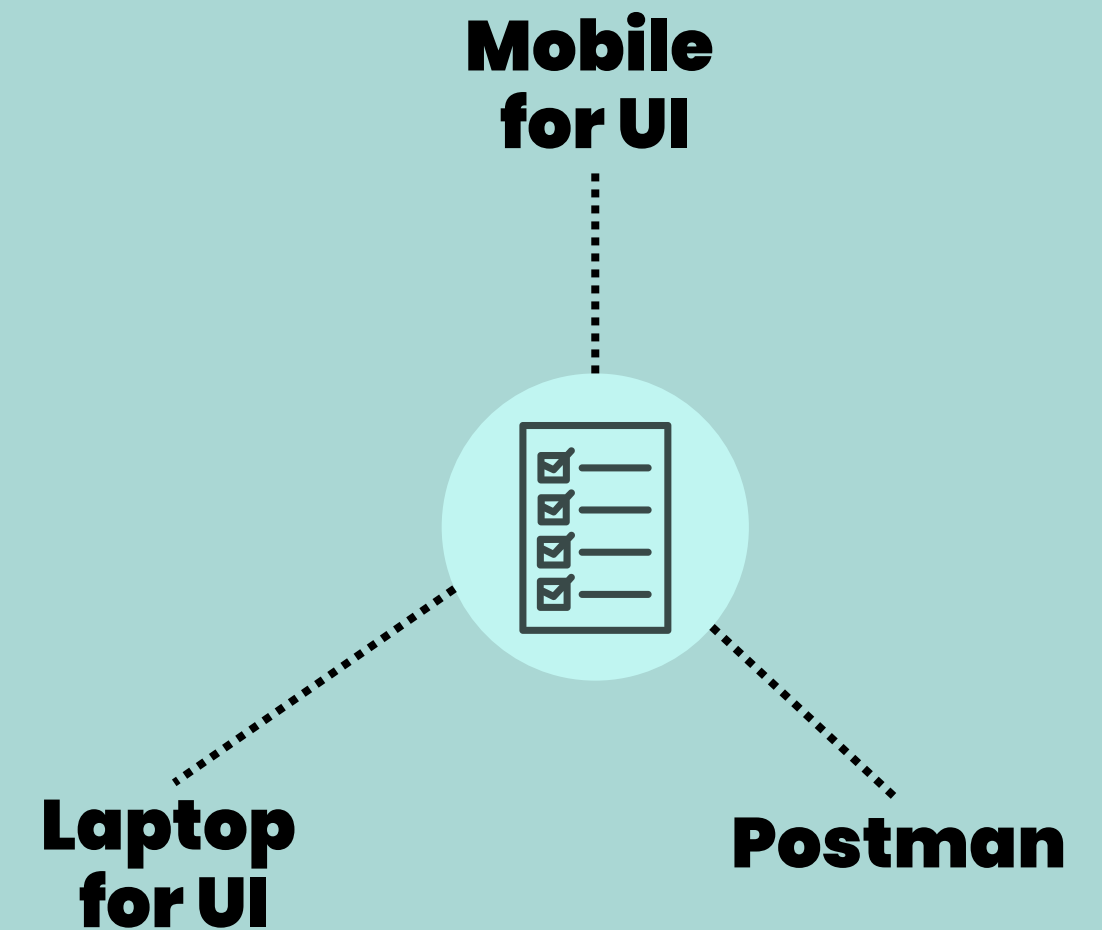
# Frontend



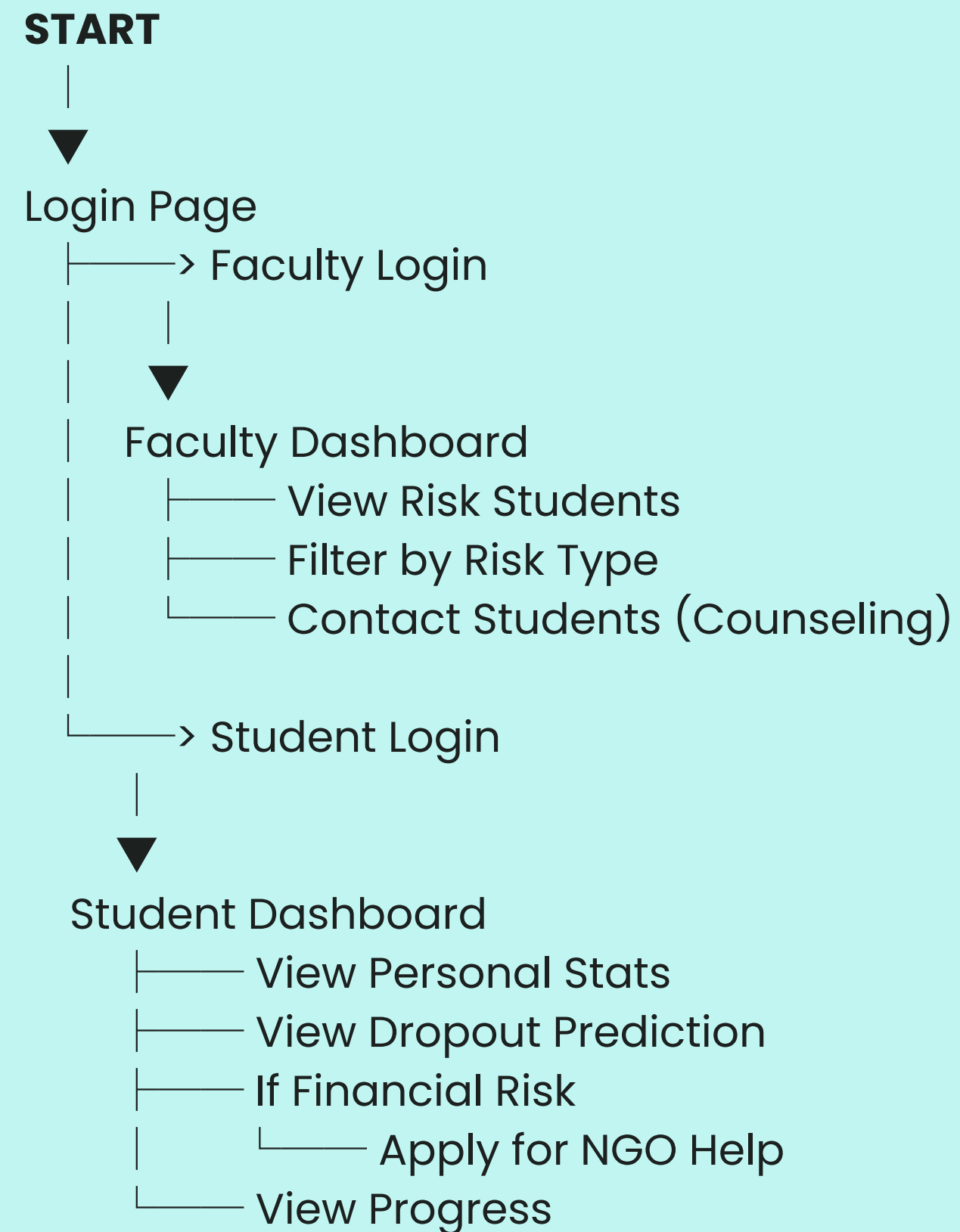
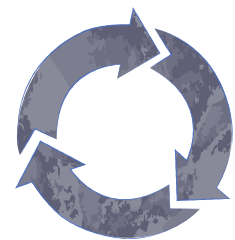
# Backend



# Testing



# Flowchart :





# Web Architect :

This shows how we are going to structure our project

## student\_dropout\_prediction

```
├── ml_model/
│   ├── train_model.py
│   ├── dropout_model.pkl
│   ├── dataset.csv
│   ├── predictions.csv
│   └── requirements.txt
├── web_app/
│   ├── app.py
│   └── templates/
│       ├── login.html
│       ├── faculty_dashboard.html
│       ├── student_dashboard.html
│       ├── counselling_note.html
│       ├── ngo_request.html
│       └── base.html
├── static/
│   ├── css/
│   │   └── style.css
│   ├── js/
│   │   └── scripts.js
├── instance/
│   └── students.db
├── models.py
├── routes.py
├── forms.py
├── utils.py
├── .gitignore
└── README.md
```

# What each part does:

## For Machine Learning Model

- dataset.csv — Raw dataset with student features (marks, attendance, finance status, etc.)
- train\_model.py — Script to:
  - Load data.
  - Train ML model.
  - Save **dropout\_model.pkl**.
  - Create a predictions.csv (student IDs + risk levels) for the website DB.
- dropout\_model.pkl — Your trained model.
- requirements.txt — Python packages for training (pandas, numpy, scikit-learn, etc.)

# BACKEND

app.py--Flask entry point. Loads model, sets up routes.

models.py--SQLAlchemy DB models: Student, Faculty, CounsellingNotes, NGORequests

routes.py--Flask routes for login, dashboards, actions (counselling, NGO help)

forms.py--WTForms for login forms, counselling note form, NGO request form

utils.py--Helper functions: load model, fetch prediction, auth checks.

# FRONTEND

## Templates

Jinja2 HTML files:

- login.html → Choose Faculty/Student, enter credentials.
- faculty\_dashboard.html → See all students, risk levels, contact buttons.
- student\_dashboard.html → Show marks, attendance, risk status, NGO help option.
- counselling\_note.html → Faculty writes a message.
- ngo\_request.html → Student requests NGO funding help.
- base.html → Common navbar/footer.

# REFERENCES

## Government & Institutional Sources

- Ministry of Education, India--<https://www.education.gov.in>  
Official reports on student retention rates, national dropout data, and education policies relevant to institutional case studies.
- All India Survey on Higher Education (AISHE)--<http://aishe.gov.in>  
Provides statistical data on enrollments, dropouts, and pass percentages across colleges and universities in India.
- National Sample Survey Office (NSSO)--<https://mospi.gov.in>  
Socio-economic datasets that help identify financial backgrounds — useful for analyzing dropout due to economic stress.


## Academic & Research Platforms

- ResearchGate--<https://www.researchgate.net>  
Scholarly articles on student dropout prediction, machine learning in education, and retention strategies.
- Shodhganga--<https://shodhganga.inflibnet.ac.in>  
Indian academic repository with dissertations on educational data mining and risk prediction.
- IEEE Xplore--<https://ieeexplore.ieee.org>  
Research papers on early warning systems, ML algorithms, and predictive analytics for higher education.

## Open Data & Support Initiatives

- UDISE+ (Unified District Information System for Education)--<https://udiseplus.gov.in>  
Detailed datasets for school & college infrastructure, dropouts, pass rates — useful for feature engineering.
- NGO DARPAN (NITI Aayog)--<https://ngodarpan.gov.in>  
Official portal for verified NGOs in India — relevant for integrating funding assistance options.
- National Scholarship Portal (NSP)--<https://scholarships.gov.in>  
Centralized information about scholarships, useful context for financial aid modules.

# Progress so far:



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## Pioneering Student Success Through Insight

EduAid provides unparalleled predictive analytics to help educational institutions foster student growth and significantly reduce dropout rates.

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## The Challenge of Student Attrition

Student dropout is a complex issue driven by academic struggles, financial pressures, mental health challenges, and a lack of institutional support. Many institutions struggle to identify at-risk students early enough to provide effective, timely intervention.

## A Tradition of Innovation

Our system leverages state-of-the-art machine learning to analyze academic, behavioral, and engagement data. It provides actionable insights with exceptional accuracy, recommending targeted interventions to ensure no student is left behind.

## Core Capabilities




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## Institutional Advantages

- ✓ Increase student retention and success rates
- ✓ Improve overall academic outcomes
- ✓ Bolster institutional reputation and prestige
- ✓ Employ data-driven, strategic decision-making



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### Predictive Analytics

High-accuracy dropout risk scoring with explainable AI to understand the contributing factors.

### Unified Dashboards

Intuitive dashboards for both administrators and students to track progress and alerts.

### Wellness Monitoring

Optional weekly wellness check-ins to gather crucial emotional and mental health data.

### Custom Interventions

Automated recommendations for academic tutoring, financial guidance, and wellness services.

## Trusted by Leading Institutions

"Implementing EduAid transformed our retention strategy. The insights are invaluable, and we've seen a measurable increase in student success stories."

# Welcome to EduAid

## Login to Dashboard

Select Role

-- Choose Role --



Username

Enter username

Password

Enter password

Login

Forgot your password?

Don't have an account? [Sign up](#)

**Thank you!**