Project 4 – Machine Learning: Group 2

## **Group Members:** Rajeshwari Radhakrishna; Kelly Blake; Aisha Henderson, Sujatha Angajala

## **Topic/Problem Statement:**

The purpose of this project is to utilize supervised machine learning methods to develop a model that can predict the level of student adaptability based on various demographic and socioeconomic features. Through the assessment of the predictive model, we can determine which factors impact/contribute to student adaptability in online learning with a goal of using this information to tailor programs and improve outcomes for new digital learners.

## **Dataset(s):**

1. Students Adaptability Level in Online Education (Effectiveness of Online Education)
   * **Source**: Kaggle
   * **Link(s):** <https://www.kaggle.com/datasets/mdmahmudulhasansuzan/students-adaptability-level-in-online-education>

## **Column Definitions:**

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Description | Value(s) | **Additional Info** |
| Gender | Gender of Student | Boy  Girl |  |
| Age | Age range of the student | 1-5 6-10  11-15  16-20  21-25  26-30 |  |
| Education Level | Education Institution Level | School  University  College | Grades k-12  Larger post-secondary  Smaller post-secondary |
| Institution Type | Education Institution Type | Government  Non-Government | Public vs Private |
| IT Student | Studying as IT Student or Not | Yes  No |  |
| Location | Is Student Location in Town? | Yes  No |  |
| Load-Shedding | Level of load shedding | High  Low | Electricity usage |
| Financial Condition | Financial Condition of Family | Poor  Mid  Rich |  |
| Internet Type | Internet type used mostly in device | WIFI  Mobile Data |  |
| Network Type | Network connectivity type | 4G  3G  2G (Other) |  |
| Class Duration | Daily class duration (in hours) | 1-3  3-6  0 (Other) |  |
| Self LMS | Institution’s Own LMS Availability | Yes  No |  |
| Device | Device Used mostly in Class | Mobile  Computer  Tablet |  |
| Adaptability Level | Adaptability level of the student | Low  Moderate  High |  |

## **Tools:**

* Pandas
* Postgres SQL
* Tableau
* Jupyter Notebook

## **Machine Learning Models:**

Random Forest

**Label:**

|  |
| --- |
| Adaptability Level |

**Features:**

|  |
| --- |
| Gender |
| Age |
| Education Level |
| Institution Type |
| IT Student |
| Location |
| Load-Shedding |
| Financial Condition |
| Internet Type |
| Class Duration |
| Self LMS |
| Device |

## **Visualization Ideas:**

TBD

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| --- | --- |
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|  |  |