**Digital Egypt Pioneers initiative**

**DEPI**

**Assessment 1**

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1. **Understand the Business**

We must first understand the business by knowing what we offer, the quality of our services and also competitors’ strengths, offers, and prices, help us identify if customers are leaving for better deals, more advanced services, or other reasons.

1. **Define goal and collect data**

Our goal must be SMART, which is to reduce customer churn rate in 3 months.

Specific: We must reduce the customer churn rate and increase the new customers

Measurable: Be sure that the dana scientist which is me capable analyzing and solving the issues

Achievable: It can be really achieved and is realistic

Relevant: This goal must be important for the company

Time-bound: in 3 months

Also, we must get data from the data engineer which are demographics, account details, services used, and churn status.

1. **Understand and preprocess data**

First, understanding data is so important to know the dataset’s structure and relationships and search for trends, distributions, and outliers in features like contract type, tenure, monthly charges, and service usage. Second, we must handle the data by cleaning it, deal with missing values, remove duplicates, standardize categorical variables, and scale numerical features.

1. **Data visualization**

Visualizing the data is essential to uncover insights and understand trends and patterns in customer behavior, which is crucial for tackling churn. Using charts and histograms, show churn rates across demographic factors such as age, gender, income level, and location and also illustrate the relationship between billing issues and churn.

1. **Data modeling**

When it comes to modeling and finding the best algorithm for predicting customer churn. Choosing the best algorithm may not be the first time but by predicting many algorithms which will closely reach my goal and be more accurate.

1. **Evaluation**

Ensure that your model is accurate and succeeds by high percentage by providing us with insights and trends.

1. **Deployment**

Deploying a churn prediction model is a crucial step to ensure the model’s insights are actionable and integrated into business processes. We must track prediction accuracy and feedback, retraining the model as data is updated because customer behavior changes over time.