PROJECT SYNOPSIS

Batch details	**PGPDSE-FT GURGAON OCT'22**
Team members	**Vatsala, Ambuj Garg, Shruti Mishra, Aayush Gupta, Vikas Kumar**
Domain of Project	**Finance & Risk Analytics**
Proposed Project Title	**Approved Loan amount**
Group Number	**1**
Team Leader	**Vatsala Sahu**
Mentor Name	**Mr. Ankush Bansal**

DATE: 10/02/2023

Signature of the Mentor **Signature of the Team**

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PROJECT OVERVIEW

WHAT IS PAY CHECK PROTECTION PROGRAM (PPP)?

The Pay check Protection Program (PPP) loan is a type of loan established by the US Small Business Administration (SBA) as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act in response to the COVID-19 pandemic. The purpose of the PPP loan is to help small businesses keep their workers on the payroll during the pandemic. The PPP loans are made through SBA-approved lenders and are fully guaranteed by the federal government.

BUSINESS PROBLEM STATEMENT (GOALS)

1. BUSINESS PROBLEM UNDERSTANDING:

Predicting the Current Approval Amount of the Pay check Protection Program Loan Data to help certain businesses, self-employed workers, sole proprietors, certain non-profit organizations, and tribal businesses continue paying their workers.

2. BUSINESS OBJECTIVE:

The objective of the Pay check Protection Program (PPP) loan is to provide financial assistance to small businesses impacted by the COVID-19 pandemic.

By providing PPP loans to eligible small businesses, the federal government aims to prevent widespread layoffs, preserve jobs, and support the economy during a time of crisis. The program is designed to provide a lifeline to small businesses that may otherwise be unable to continue operations due to the pandemic's economic impact.

In addition to helping businesses stay afloat, the PPP loan also offers the potential for loan forgiveness if certain conditions are met. This provides an added incentive for small businesses to participate in the program and helps ensure that the funds are being used effectively.

Overall, the objective of the PPP loan is to support the survival and recovery of small businesses during the COVID-19 pandemic, and to help preserve jobs and the US economy in the long term.

3. APPROACH:

The current approval amount of a Pay check Protection Program (PPP) loan can be predicted by analysing a number of factors, including the size of the business, its industry, historical financial data, and the economic impact of the COVID-19 pandemic on the business.

Here is a general approach to predicting the current approval amount of a PPP loan:

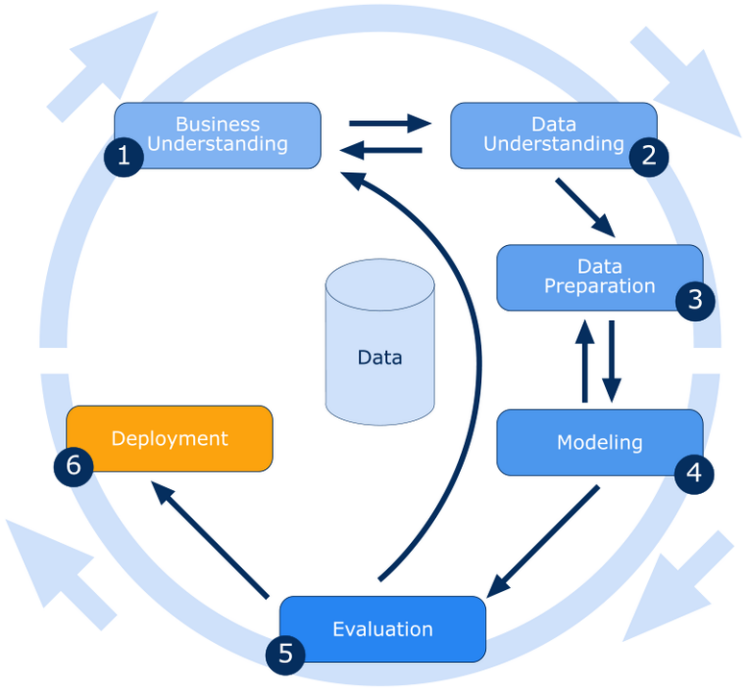
- **Gather data:** The first step is to gather relevant data on the business, including its size, industry, and historical financial information such as revenue and expenses.
- **Analyse the impact of COVID-19:** The next step is to analyse the impact of the COVID-19 pandemic on the business and its industry. This can be done by reviewing government data, news articles, and market reports.
- **Calculate the average monthly payroll cost:** The PPP loan amount is based on the average monthly payroll cost, so this must be calculated using data such as the number of employees and their salaries.
- **Determine eligible expenses:** The business must also determine which expenses are eligible for coverage under the PPP loan, such as payroll, rent, mortgage interest, and utilities.
- **Use historical financial data:** Historical financial data can be used to predict the business's future expenses and revenue, which can in turn be used to estimate the current approval amount of the PPP loan.
- **Consider industry and market trends:** The industry and market trends can also impact the current approval amount of a PPP loan. For example, businesses in industries that have been particularly hard hit by the pandemic may receive larger loan amounts.

By considering these factors, it is possible to predict the current approval amount of a PPP loan with a high degree of accuracy. However, it's important to keep in mind that the PPP loan program is subject to change, and the approval amount may vary based on the specific circumstances of each business.

4. CONCLUSION:

In conclusion, predicting the current approval amount of a PPP loan is a complex process, but by considering a range of factors, businesses can get a good understanding of what to expect from the program. This information can help businesses make informed decisions about whether to apply for a PPP loan and how to use the funds effectively.

METHODOLOGY TO BE FOLLOWED



1. BUSINESS UNDERSTANDING:

The Pay check Protection Program (PPP) is a government-funded loan program designed to provide financial assistance to small businesses affected by the COVID-19 pandemic. The

goal of the program is to help small businesses maintain their payroll and keep their employees on the payroll during the pandemic, hence the name "Pay check Protection".

2. DATA UNDERSTANDING:

The Pay check Protection Program (PPP) loan data provides insight into the distribution of PPP funds and the businesses and organizations that received these funds. Here are a few key insights that can be gleaned from the PPP loan data:

- **Business size:** The PPP loan data can show the number of small businesses that received PPP loans, as well as the size of the loans that were issued to these businesses.
- **Industry distribution:** The PPP loan data can also show the distribution of loans across different industries, such as construction, retail, and hospitality.
- **Regional distribution:** The PPP loan data can also show the distribution of loans across different regions, such as states, cities, or metropolitan areas.
- **Loan distribution by lender:** The PPP loan data can show the distribution of loans by lender, including banks, credit unions, and non-bank lenders.
- **Term:** The term for which the borrower is.
- **Undisbursed Amount:** The amount which still remains to be disbursed to the borrower.

Overall, the PPP loan data provides valuable information about the distribution of PPP funds and the businesses and organizations that received these funds. This information can be used to inform future policy decisions and help support small businesses and organizations impacted by the pandemic.

3. DATA PREPARATION:

• We'll perform Exploratory Data Analysis (EDA) to calculate statistics and make figures to find trends, anomalies, patterns, or relationships within the data. The goal of EDA will be to learn what our data can tell us.

• We'll start out with a high-level overview, then narrows in to specific areas as we find intriguing areas of the data.

• The problem of class imbalance in our data can be solved by up sampling or down sampling techniques.

• The findings may be interesting in their own right, or they can be used to inform our modelling choices, such as by helping us decide which features to use.

4. MODELLING:

After the data is cleaned and prepared, it will be processed using either of the following Machine Learning techniques:

- K-Nearest Neighbours
- Linear Regression
- Decision Trees
- Random Forest Models
- Neural Network

5. EVALUATION:

Thoroughly evaluating the model and review the steps executed to construct the model to be certain it properly achieves our business objectives. A key objective is to determine if there is some important business issue that has not been sufficiently considered. At the end of this phase, final model will be created.

6. DEPLOYMENT:

Project currently doesn't involve deployment.

INTERMEDIATE MILESTIONES (BASED ON PROJECT DEADLINES)

Milestones	Deadline
EDA	16th February 2023
Feature Engineering	23rd February 2023
Feature Selection	27th February 2023
Base model	2nd March 2023
Complete Model and Model Selection	16th March 2023
Evaluating ML model and Model tuning	28th March 2023

REFERENCES

- **Reference documents of CRISP-DM:**
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  - https://en.wikipedia.org/wiki/Paycheck_Protection_Program
- **Kaggle Competition link -:**
  - https://www.kaggle.com/datasets/nflovejoy/paycheck-protection-program-loan-data