Home Loans
Data Science Project

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Agenda

- Data Science Lifecycle
- Project Overview
- Process Overview
- Data
- Analysis
- Modeling
- Model Evaluation
- Recommendations

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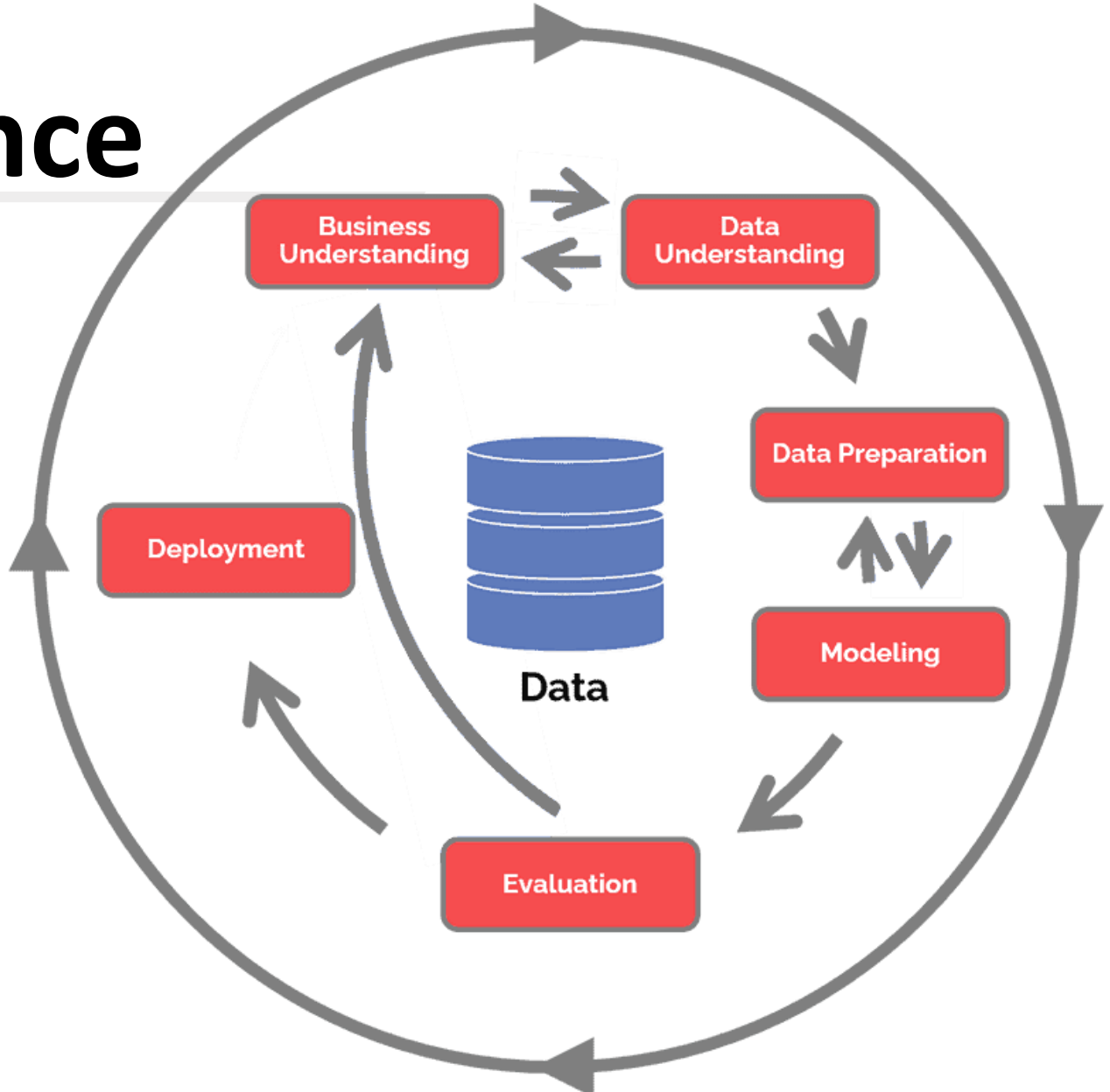
Data Science Lifecycle



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Project Overview

Business Problem:

Currently the home loan application process is a manual one. It which takes 2-3 days, which mean that the applicant will only be notified after 2-3 days of the application outcome.

Business Objective:

Reduce the amount of time it takes for applicants to be notified about their loan statuses (to a matter of seconds).

Hypothesis:

Based on historical data we can use machine learning to predict the loan status of a potential borrower such that the time taken for them to receive their respective statuses is reduced significantly.

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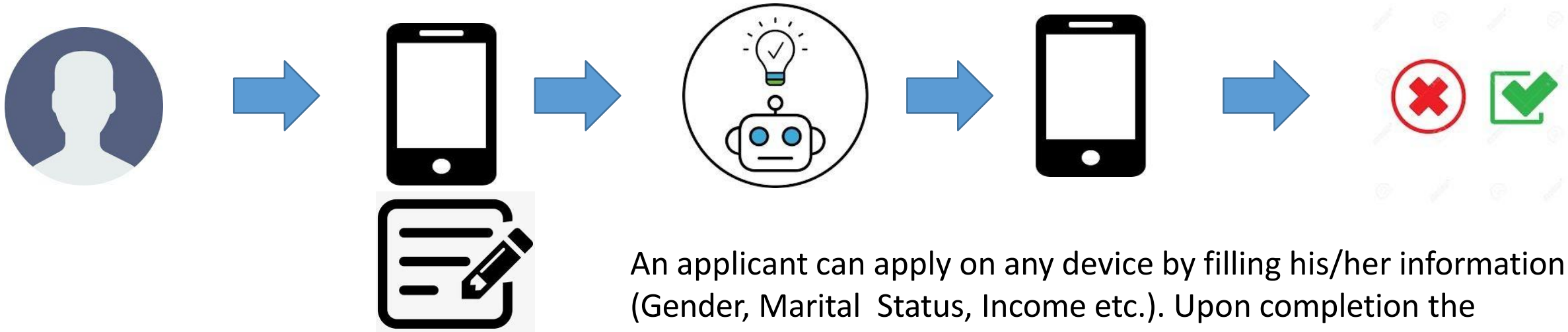
Process Overview Solution



An applicant can apply on any device by filling his/her information (Gender, Marital Status, Income etc.). Upon completion the machine learning model will be triggered to make a predict (based on historical data that it has been trained). The prediction will appear on the device as Accept or Decline on the same device in a matter of seconds

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Data

- The number of records – 614
- The number of columns – 13
- The number of numerical columns – 5
- The number of categorical columns – 8
- Target/Loan Status – Y (422) vs N (192)

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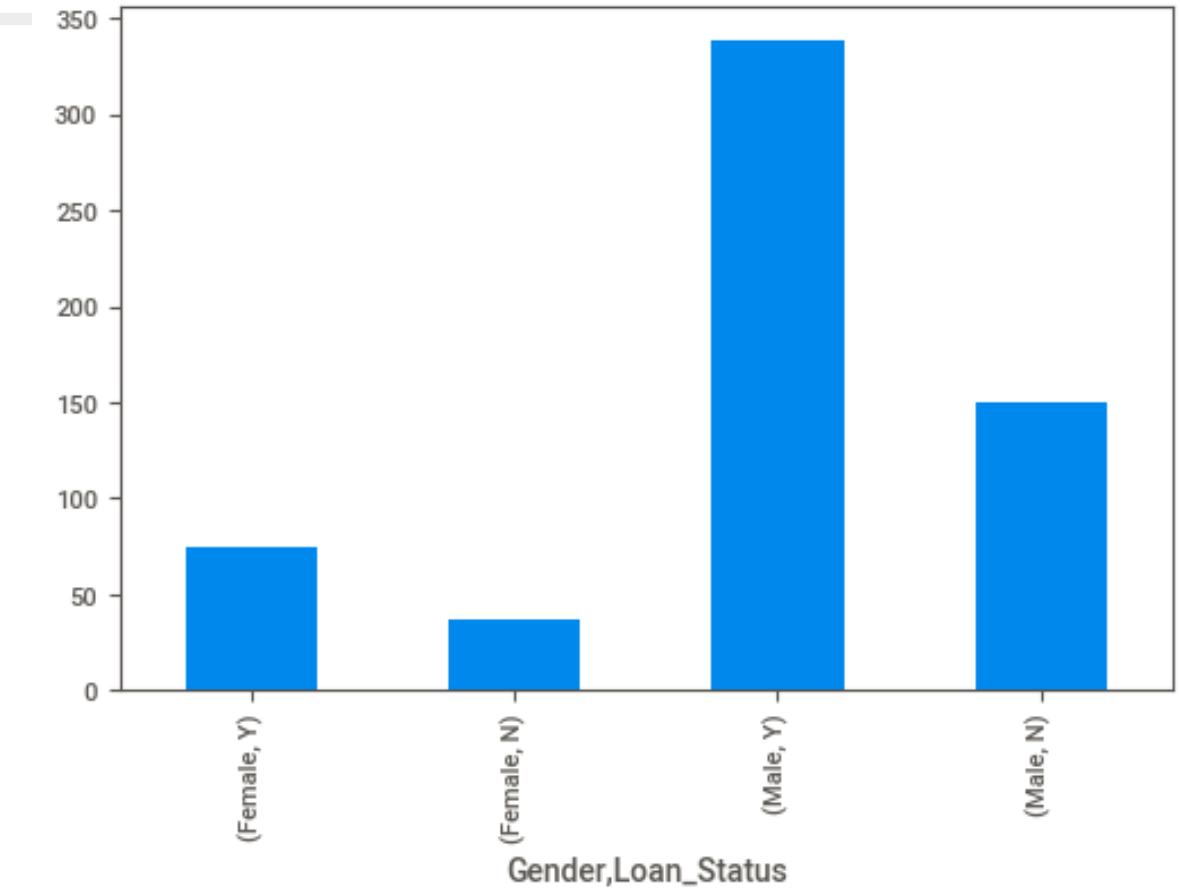
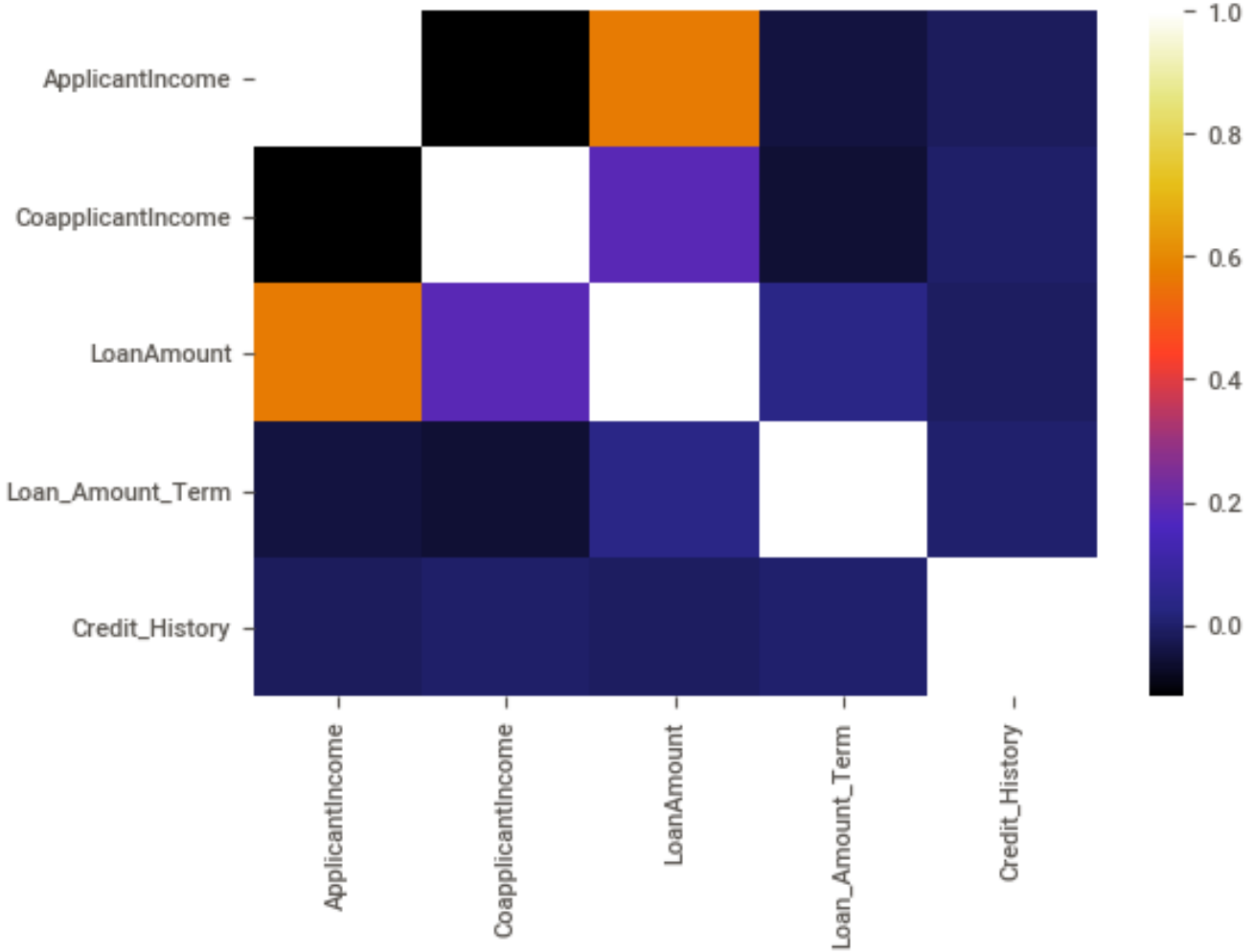
Analysis





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Modeling

One machine learning model trained and AutoML used as well.

- Bespoke model required preprocessing
- AutoML did not
- Results fairly similar

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Model Evaluation

	AutoML	Bespoke ML
Accuracy	79,67%	78,05%

- where accuracy is the sum of all the correct predictions made by the model over all predictions made.

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Recommendations

- Bespoke ML > AutoML
- We understand/know exactly what went in, how it went in and what algorithm was used to achieve the objective
- Less time training (works in our favour if we train and predict in real time – maybe not applicable in this use case)
- AutoML is best used as a baseline model.

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