Tanzania Water Points Status Modelling

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Outline

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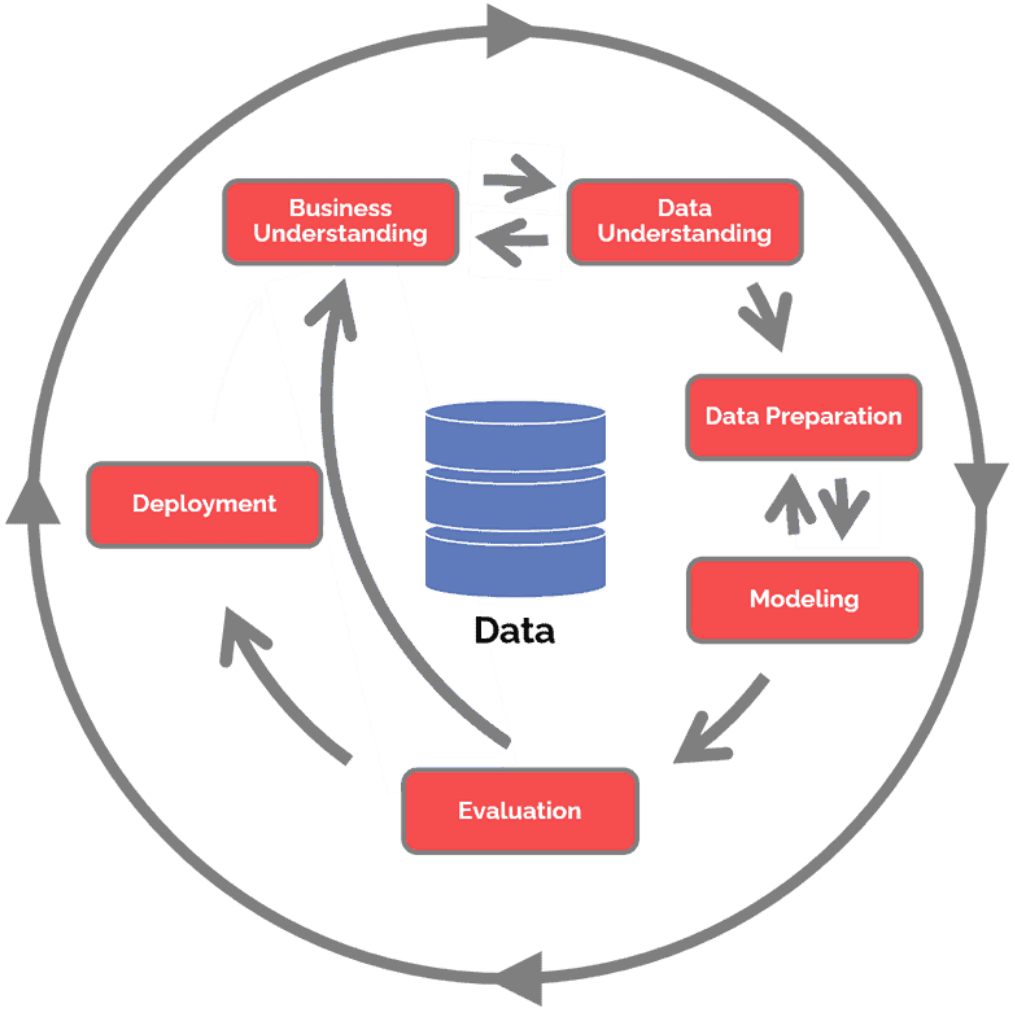
Background

- Tanzania has a population of 59 million
- 29 million people lack access to improved sanitization
- 4 million people lack access to clean drinking water

Business Understanding

- The Government of Tanzania has pledged to increase access to improved sanitation to 95 per cent by 2025.
- Government wants to be able to :
  - Better predict which pumps will fail, and to better identify pumps that need repair
  - Identify factors need to be considered in the future to identify failing pumps.

METHODOLOGY

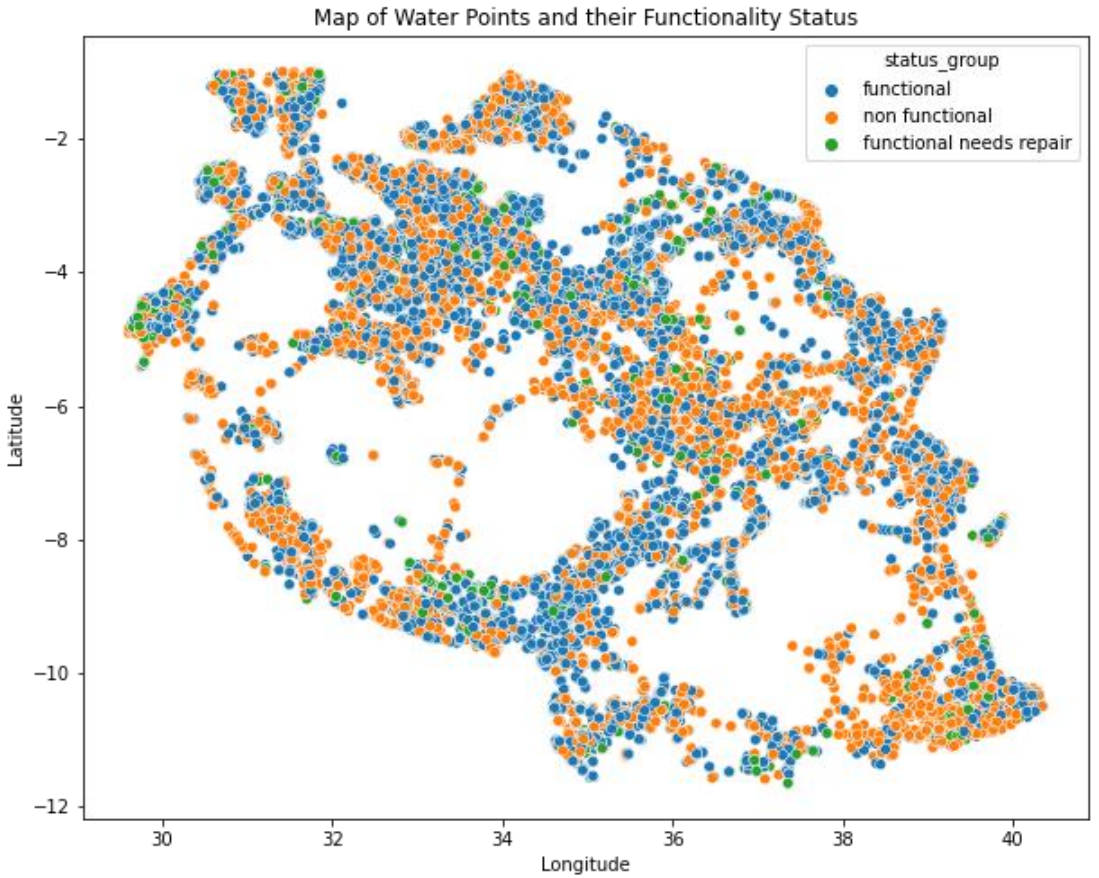


BEST MODEL

- Random Forest
- Model Accuracy :0.80

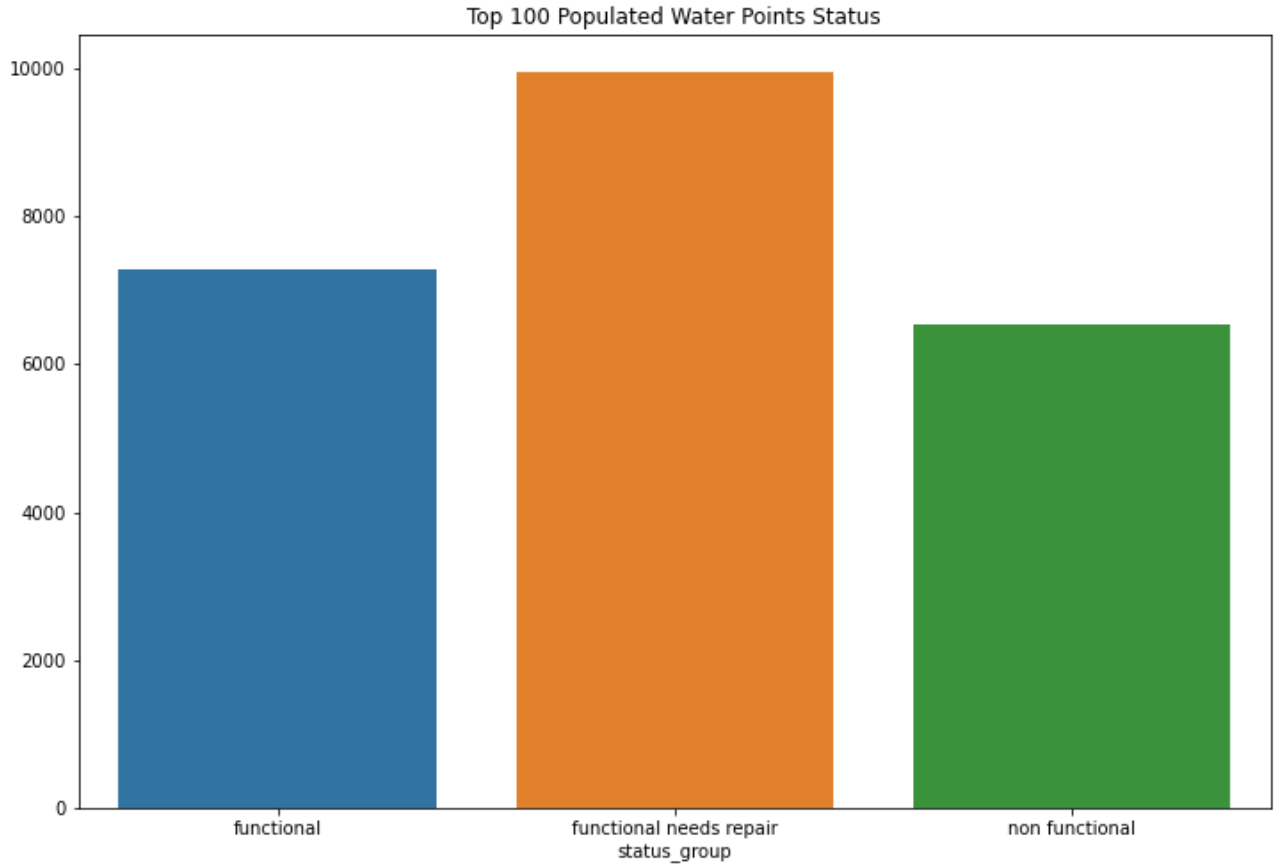
LOCATION

Water points that need repairs or are non-functional are often clustered to a location, eg, south east area



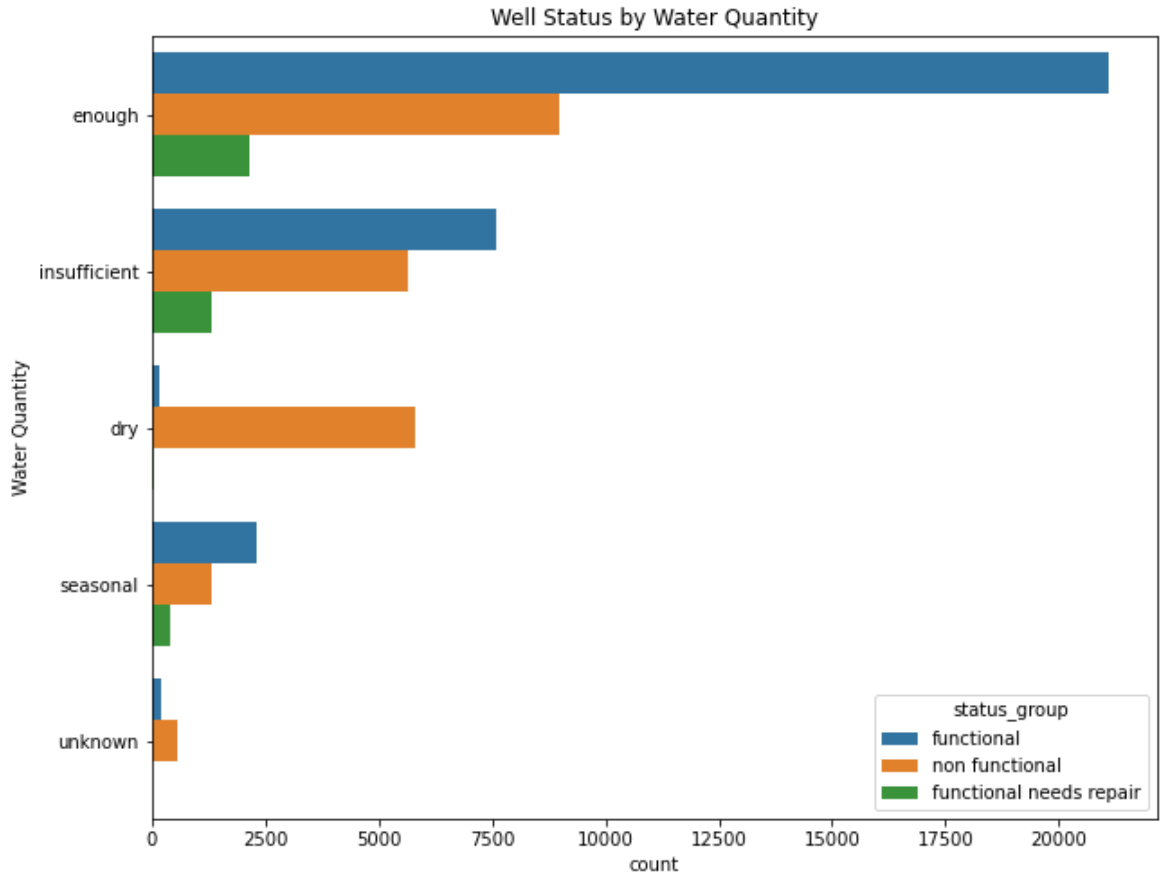
POPULATION

Highly populated areas have a lot of water points that need repair.



WATER QUANTITY

Places with enough water supply have a lot of water points, but also high number of non-functional.



Conclusions

- The final random forest classifier is suitable for this business case, and is ready for deployment.
- Location is a crucial factor in predicting the status of the water point.
- Water points with enough water are at a higher chance to fail, and should be closely monitored.
- Water points with high population tend to wear out quickly, hence, higher chances of the wells needing repair, or them not functioning.
- Places with low GPS values have higher chances of having water points that need repair or that don't function

Recommendations

- Water points that are in close proximity to those that need repairs or are non-functional should be accessed frequently since they are most likely to also suffer the fate of needing repair or becoming non-functional.
- Water points with enough water should be closely monitored, as the high use could lead to their failure.
- Water points with high use population should be closely monitored.
- Low lying areas need to be have the water points checked more often to avoid them failing and needing repair