Profile Predictor
Optimizing Access Management

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Abstract
Currently, the access management team at Capital One manages the system access needs of new and existing associates. The process to request and fulfill the desired access management roles is manual. The objective of the project is to leverage machine learning based automation to drive the implementation of a role based access control model to simplify this process and reduce associate on boarding time.

Architecture
- Spark MLlib with Scala works to determine and predict Profile Codes
- Postgres handles data storage and transformation prior to ML pipeline ingestion
- Angular used as web framework to build client to display predicted information to the user

UI Client in Angular
1. 99% time improvement over previous manual lookup method
2. 98% Accuracy in Predicting Profile Codes
3. Easy to use web interface built for scalability and fast lookups

Impact
Prior to Profile Predictor
This project automates a task that takes Capital One employees' time to manually complete. In turn, they are now free to complete more productive tasks.

Summary
- Developed a role engineering platform to apply access entitlement groupings to Capital One associates.
- Automated the assignment of roles to augment risk mitigation and replace the current manual process. Thus in turn decreasing the time it takes for a new hire to finish onboarding.
- Implemented a full-stack web application to interact with employee records that uses a machine learning model to predict employees' roles.