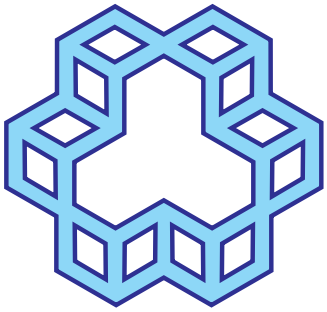

K. N. Toosi University of Technology

Faculty of Physics
Educational Group of
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Special Topics I Final Projects
(Project 6 - Access to Resources)

by

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Overview

Upon commencing employment at any organization, an employee must first get the computer access required to perform their duties. The employee may be able to view or modify materials using a variety of programs or online portals with this access. It is expected that employees carrying out a specific role's responsibilities will have access to the same resources. Employees frequently run into difficulties when going about their everyday business (for example, they cannot connect into the reporting portal). An informed individual must have time to manually grant the necessary access. This cycle of finding or regaining access loses time and money as employees move around an organization.

The position that employees play their role within the company and the resources that are available to them are well documented. We can make models that automatically identify access points when people go on and leave corporate responsibilities can be created using data about present employees and their access. The goal of these automated access models is to reduce the amount of human interaction needed to give or take away employee access.

In this project, we want you to use past data to develop a model for that assesses employee access requirements. Using details about a employee's role and resource code, this model decides if the employee should be allowed to use that resource.

You can download the data needed to do this project from this link. The database provided to you has the following columns:

Action 1 if the resource was approved and 0 if the resource was not

Resource Resource ID

Manager Id The current Employee ID record's manager's Employee ID; an employee can only have one manager at a time.

Role Rollup 1 Category ID 1 for company role grouping (e.g. US Engineering)

Role Rollup 2 Category ID 1 for company role grouping (e.g. US Retail)

Role Department Departmental role description for the company (e.g. Retail)

Role Title Role description for the business (e.g., Senior Engineering Retail Manager)

Role Family Description Extended job family description for the company (e.g. Retail Manager, Software Engineering)

Role Family Description of the company's role family (e.g. Retail Manager)

Code Each role in the company has a unique code (e.g. Manager)

Note: The given data is raw. To answer this question, you must first preprocess the data using the Pandas package.

Important Points

Be sure to

- Leave appropriate comments for different parts of your code.
- Completely explain about the algorithm(s) you use to answer this question.
- Use **model selection**, **feature engineering** and **feature scaling** in your code.
- Measure your model performance using model evaluation metrics and interpret the obtained result(s).
- If you used a specific book or article in your project, mention it in your notebook.

A part of your score will be allocated to these items.

***** You should write all the steps of your project in the **Jupyter notebook** and upload it as a file with the **.ipynb** extension on the vc site.