ODS Freeze Schedule Web Application
BI & Data Management (bi@mines.edu)

BI & Data Management Background:
The BI & Data Management Team within Information Technology Solutions (ITS) at the Colorado School of Mines is responsible for providing support for the Business Intelligence efforts at the university as well as the management of the data involved in these endeavors.

Currently, the Operational Data Store (ODS) serves as the data repository for operational-level reporting using Cognos and strategic-level reporting using Tableau. In addition, the ODS exports data to third party systems for regulatory compliance as well as to enhance specific university functions. The ODS imports data using Extract, Transform, and Load (ETL) processes primarily from Banner and secondarily from third party systems.

Project Description:
The BI & Data Management Team is in need of an ODS Freeze Schedule Web Application. At present, various data sets are frozen for specific events (census for example) on a scheduled basis for specific administrative offices (Admissions, Budget, Financial Aid, Human Resources, Institutional Research, and Registrar). The schedule is maintained in an Oracle table in the ODS by hand generated and executed INSERT statements. Development of these INSERT statements to populate the schedule table is the result of a series of email exchanges regarding spreadsheets containing the desired freezes between the BI & Data Management Team and the relevant administrative office. The ODS Freeze Schedule Web Application would replace this manual process with a web application that would allow each participating administrative office to directly manage their portion of the freeze schedule.

Goals - Primary:
- The application will allow the end users to create, modify, and remove entries in the freeze schedule for their office and only their office.
- The freeze schedule will remain in the current Oracle table in the ODS. Columns in the table may be added if warranted.
- The application will ensure freezes are not scheduled for weekends or school approved holidays. An existing Oracle table in the ODS contains the holidays to be excluded.
- Other tables in the ODS may need to be constructed and maintenanced (via the application) to ensure data integrity (departments, users, freeze components, etc.).
- Data will not be embedded within the application – no hard coding.
- The application will adhere to current ITS security policy and procedures (SSL certificate, DUO, etc.).

Goals - Secondary:
- An administrative section will be included within the application to allow the BI & Data Management Team to configure the data integrity components.
- A basic reporting section will be included within the application to allow end users to select portions of the freeze schedule (or all), specify a sort, and export to Excel.

Goals - Stretch:
- The application will allow end users to set up jobs to monitor a department's freeze schedule and email end users when the schedule is nearing completion.
- The application will allow events (census for example) to be set to a mandatory date by a designated controlling department (Registrar for example) to ensure uniformity.

Technologies:
- Back end will be the ODS and thus will be developed in Oracle SQL and PL/SQL. No embedded SQL in the front end as all SQL and PL/SQL will be executed via calls to functions or stored procs, whether independent or contained within packages.
- Front end will be recommended by the project team. The expertise of the BI & Data Management Team lies mainly with the back end (database object) development and reporting tools. We are very open to recommendations for the front end development.

Team Size & Logistics:
- 3 to 5 team members.
- Work will be remote via MS Teams or Zoom.

Internships:
Possibility of coming to work for the BI & Data Management Team as a student worker.

Intellectual Property:
IP for this project to be assigned to the Colorado School of Mines.