**Development of a Python Package for Remote Sensing Indices using Google Earth Engine**

Google Earth Engine is a cloud-based platform which provides a geospatial processing service. The primary objective of this project is to utilize the computational capabilities of Google Earth Engine on the backend to develop a python package. This package will enable users to access standard Remote Sensing indices and generate their respective time series charts. For the extent of this project, we target Sentinel-2 and Landsat Satellite imagery. Depending on the time availability, we may consider including other satellite data and their corresponding indices in the package.

**Method**

In this project, the team will focus on creating and managing the GitHub repository, which includes overseeing all requests, issues, and collaboration within the team. Following this, we will collectively work on setting up the development environment, ensuring the installation of necessary packages and dependencies required for the project. Once the environment is set up, efforts will be made to provide the comprehensive documentation describing the Remote Sensing indices to be implemented, including mathematical formulation and application. The major task includes the creation of class and defining the functions for:

* Accessing user-specified satellite images
* Selection of image based upon user-specified data and area of interest.
* Aggregation of collection of images (if required)
* Selecting useful bands for indices calculation
* Calculating indices (EVI, NDBI, NDVI, NDWI)
* Generation of time-series charts

Then, we will develop detailed documentation covering installation instructions, usage guidelines, API references and examples. Finally, we will work on the creation of Python package, ensuring the organization of the codebase modular structure. Once the package is ready, we will deploy it to a suitable platform accessibility and ease of installation.

**Responsibility**

**[**[Here to include the table for task and responsible person**]]**

**Project Timeline**