# NASA Space Apps 2023

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**Challenge:**

Your challenge is to design a platform to explore open data that is available from NASA and other federal data repositories or to improve the functionality of an existing such platform, and then demonstrate how your solution can be applied to an area of study that has significant societal benefits (e.g., environmental justice, ecological conservation, or human health).

Climate change has had a great impact on agricultural yield around the world! How can we better understand and engage with agricultural data better?

By building a platform that enables people to better understand and access data, this will democratize access to various U.S. government datasets!

# Data Architecture



Data Pipeline:
- We have a script in Python that take data from the internet and downloads that data and put it to AWS.
- Once the dataset is stored on S3, we can use Tableau and a web application to pull the data for visualizations.

# Data Pipeline Code

```python
import boto3
import os

# Replace these with your own AWS credentials and S3 bucket name
aws_access_key_id = ████████████████████
aws_secret_access_key = ████████████████████████
bucket_name = 'my-space-app-hackathon'
dataset_file_path = r'C:\dev\Projects\NASASpaceAppHackathon\NASA_SpaceAppChallenge\dummy_data\FruitPrices2020.csv'
s3_object_key = 'FruitPrices2020.csv'  # The name you want to give to the dataset in S3


# Create an S3 client
s3 = boto3.client('s3', aws_access_key_id=aws_access_key_id, aws_secret_access_key=aws_secret_access_key)

# Upload the dataset file to S3
try:
    s3.upload_file(dataset_file_path, bucket_name, s3_object_key)
    print(f"Upload successful: {dataset_file_path} to s3://{bucket_name}/{s3_object_key}")
except Exception as e:
    print(f"Upload failed: {str(e)}")
```

# Data Sources

Four data sources, from US Department of Agriculture (USDA) and NASA, were chosen to tell our story.

1. NASA EarthData Search            [A Global Dataset of Soil Respiration, v5.0](#)
2. USDA AG Data Commons         [CPI Forecast](#)
                                                   [Feed Grains](#)
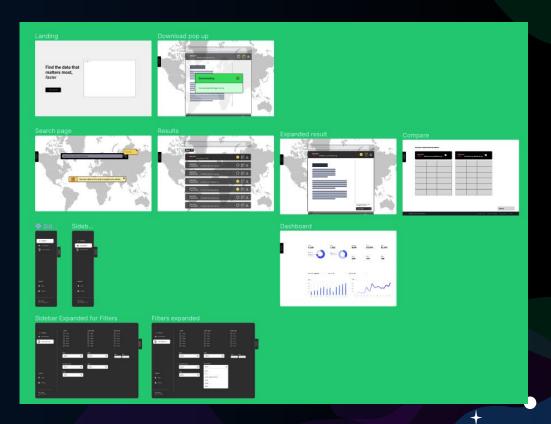3. USDA Economic Research Service     [Food Prices (2020)](#)

# Wireframe + Web Application

Our prototype was first drafted from typical data interfaces. We used a proto-customer journey to apply design thinking processes and find where we could improve. Feedback was drawn from all team members, not just designers, for fresh eyes and input.

[Click here to view our live prototype](#)

# Demo Video