

# FloatChat AI Prototype Screenshot

ARGO Data Assistant

## Problem - Statement ID = 25040

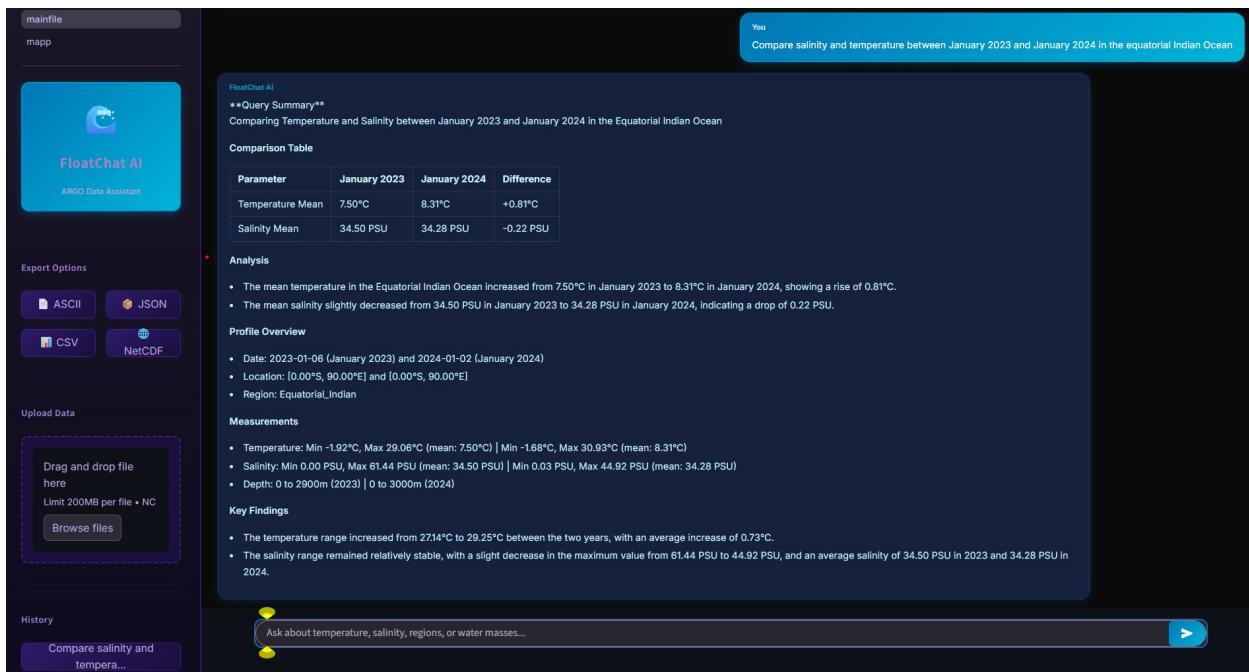
Problem Statement Title = FloatChat - AI-Powered Conversational Interface for ARGO Ocean Data Discovery and Visualization

## Feature - 1

Query = 1

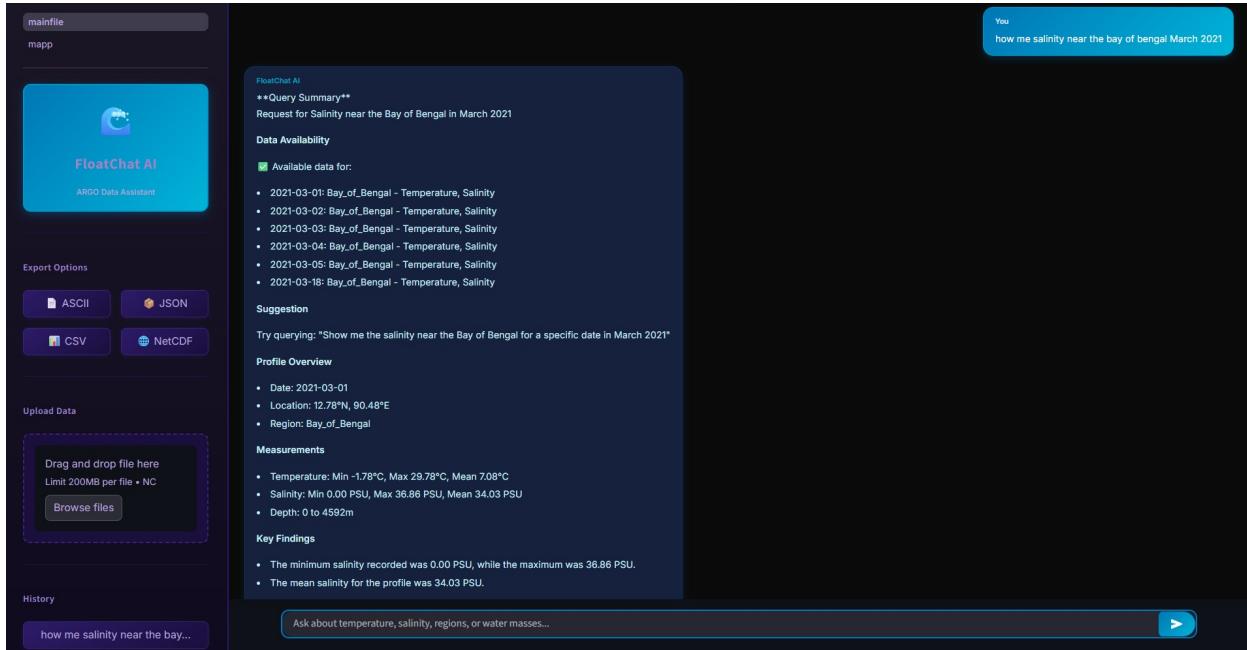
- Team Name – Agentic.py
- Team Members -

- 1.) Devesh Dixit
- 2.) Aryan Patel
- 3.) Rachit Srivastava



The screenshot shows the FloatChat AI interface. On the left, there's a sidebar with 'mainfile' and 'app' tabs, 'FloatChat AI' logo, 'ARGO Data Assistant' text, 'Export Options' (ASCII, JSON, CSV, NetCDF), 'Upload Data' (drag and drop file here, limit 200MB per file, NC, Browse files), and 'History' (Compare salinity and temperature). The main area has a 'You' section with the query: 'Compare salinity and temperature between January 2023 and January 2024 in the equatorial Indian Ocean'. Below it is a 'Comparison Table' and an 'Analysis' section with bullet points about temperature and salinity changes. The 'Profile Overview' and 'Measurements' sections also contain detailed data. At the bottom, there's a text input field: 'Ask about temperature, salinity, regions, or water masses...' with a blue 'Ask' button.

Query = 2



## Feature = 2

**NETCDF( .nc) file =User Upload Manually**

The screenshot shows the FloatChat AI ARGO Data Assistant interface. On the left, there's a sidebar with 'mainfile' and 'mapp' buttons. The main area has a 'FloatChat AI' logo and 'ARGO Data Assistant' text. It includes 'Export Options' for ASCII, JSON, CSV, and NetCDF, and an 'Upload Data' section with a file upload area for '20250903\_prof.nc' (7.2MB). A 'History' section is at the bottom. The central content area displays a 'Query Summary' for the uploaded netCDF file, detailing the date (2025-09-28), location (Southern Ocean), and measurements (Temperature: Min -1.81°C, Max 30.42°C, Mean 7.41°C; Salinity: Min 31.49 PSU, Max 37.49 PSU, Mean 34.77 PSU; Depth: 0 to 5054m). It also lists 'Key Findings' about the temperature and salinity ranges. A message from the user 'give me summary of uploaded netcdf file' is shown at the top right, and a response 'salinity range present in this file' is shown below it. A text input field at the bottom says 'Ask about temperature, salinity, regions, or water masses...' with a right arrow button.

## Feature = 3

Multiple - Exports = ASCII , NETCDF

```
=====
ARGO FLOAT PROFILE EXPORT - REAL DATA
=====
Generated: 2025-09-28 00:51:00
Query: "salinity range present in this file "
Total Profiles: 1
Source: Uploaded files - 20250903_prof.nc
=====
```

#### Profile 1 - REAL MEASURED DATA

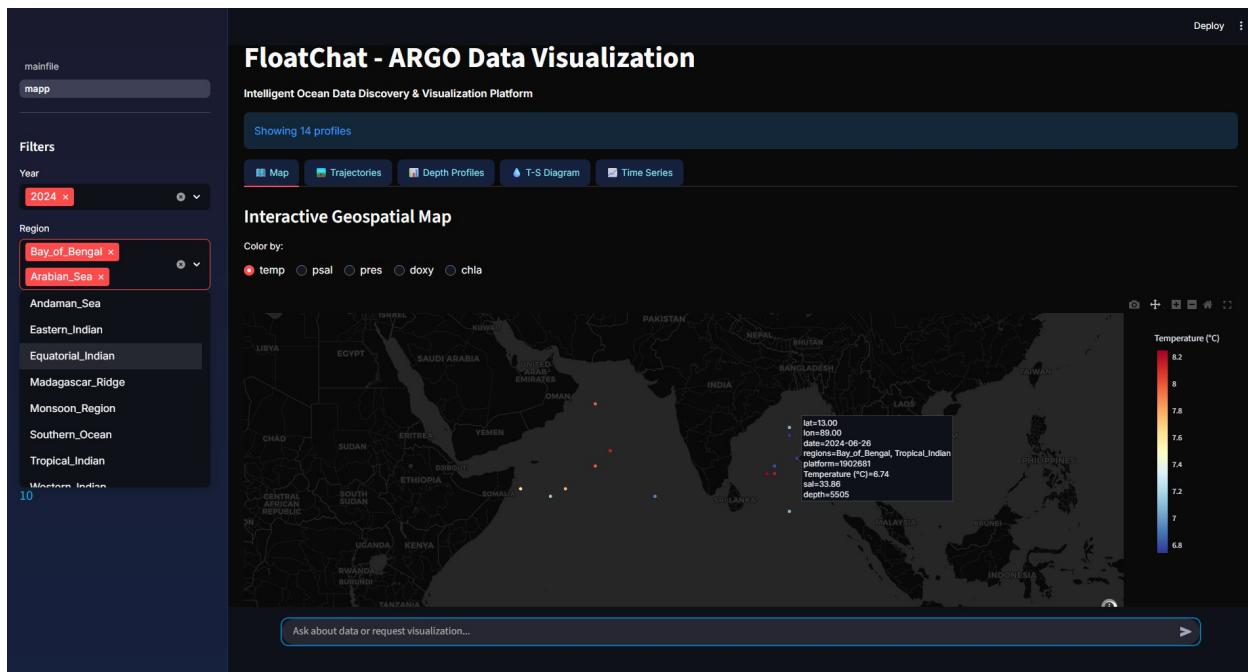
```
-----
Source File: 20250903_prof.nc
Upload Time: 2025-09-28T00:48:28
Date: 2025-09-28 (Year: 2025, Month: 9)
Location: -42.6927°S, 126.0382°E
Region: Southern_Ocean
Ocean Basin: Southern_Ocean
Temperature (REAL):
  Min: -1.806°C
  Max: 30.425°C
  Mean: 7.405°C
  Std Dev: 5.864°C
Salinity (REAL):
  Min: 31.493 PSU
  Max: 37.493 PSU
  Mean: 34.775 PSU
  Std Dev: 0.438 PSU
Depth Range (REAL): 0 - 5054.3m
Quality Score: 7.50/10
-----
```

```
=====
NOTE: All values are REAL measurements from ARGO floats
Data format complies with ARGO standards
=====
```

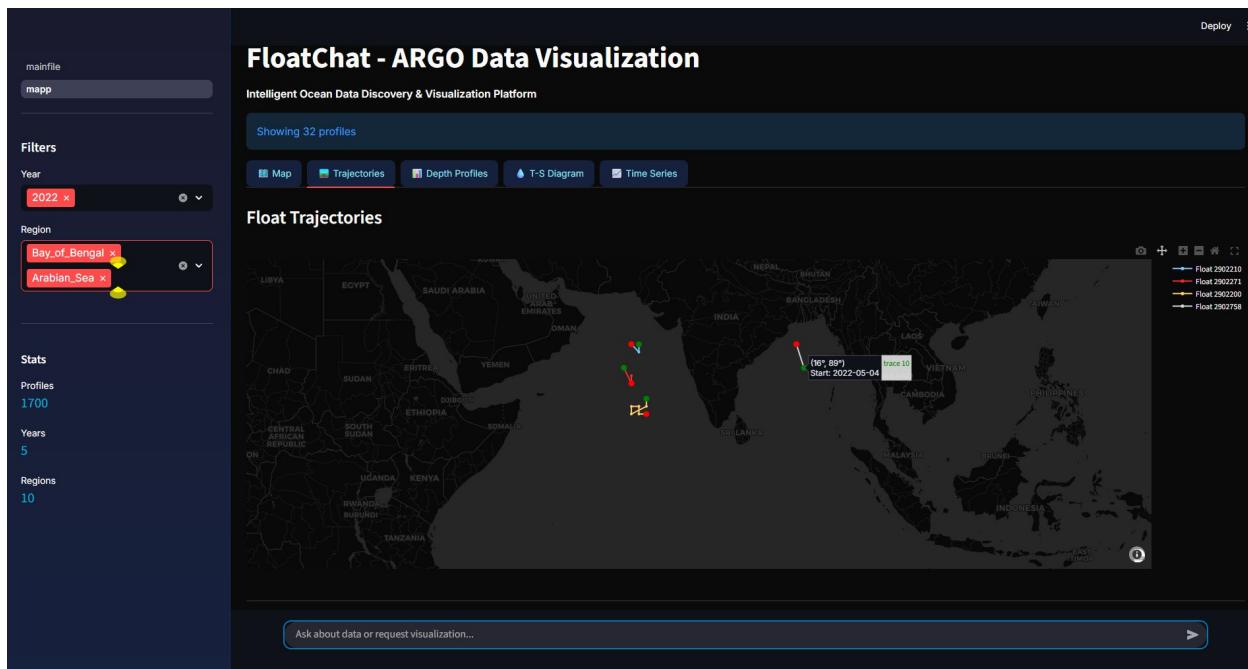
## Feature = 4

Mapping  
Visualization  
Charts  
Trajectory  
Depth  
Time - Series

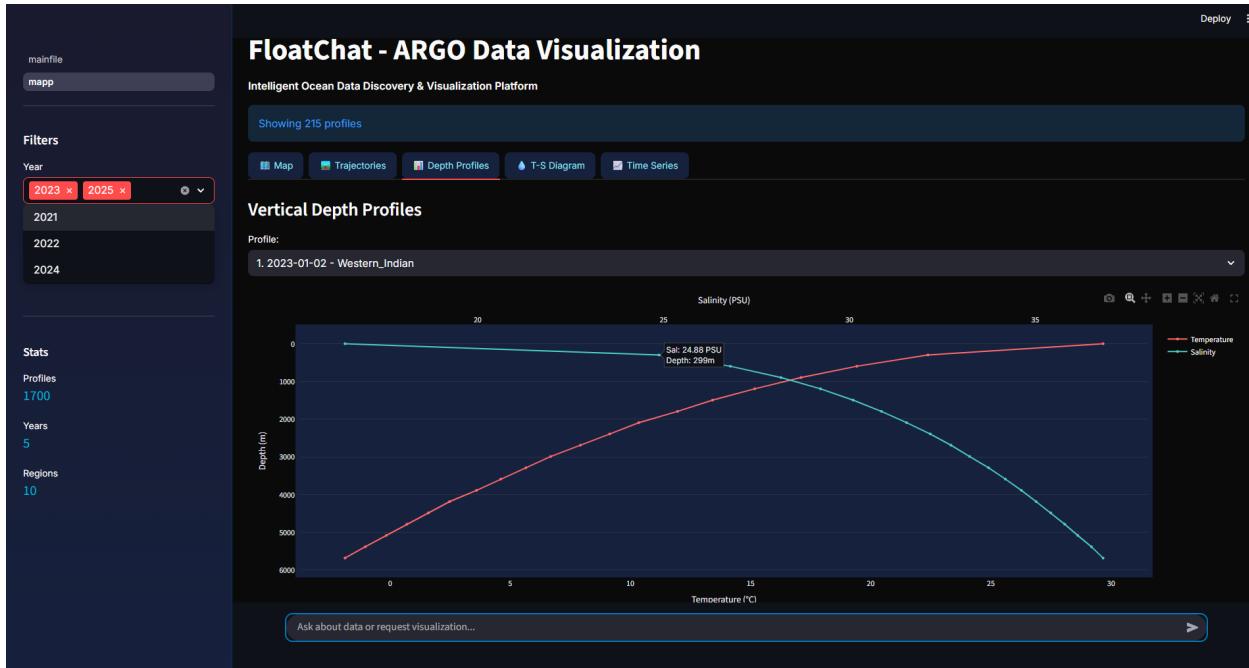
## 1 = MAPPING VISUALIZATION with filter of YEAR and REGION



## 2 = FLOAT Trajectory VISUALIZATION with filter of YEAR and REGION



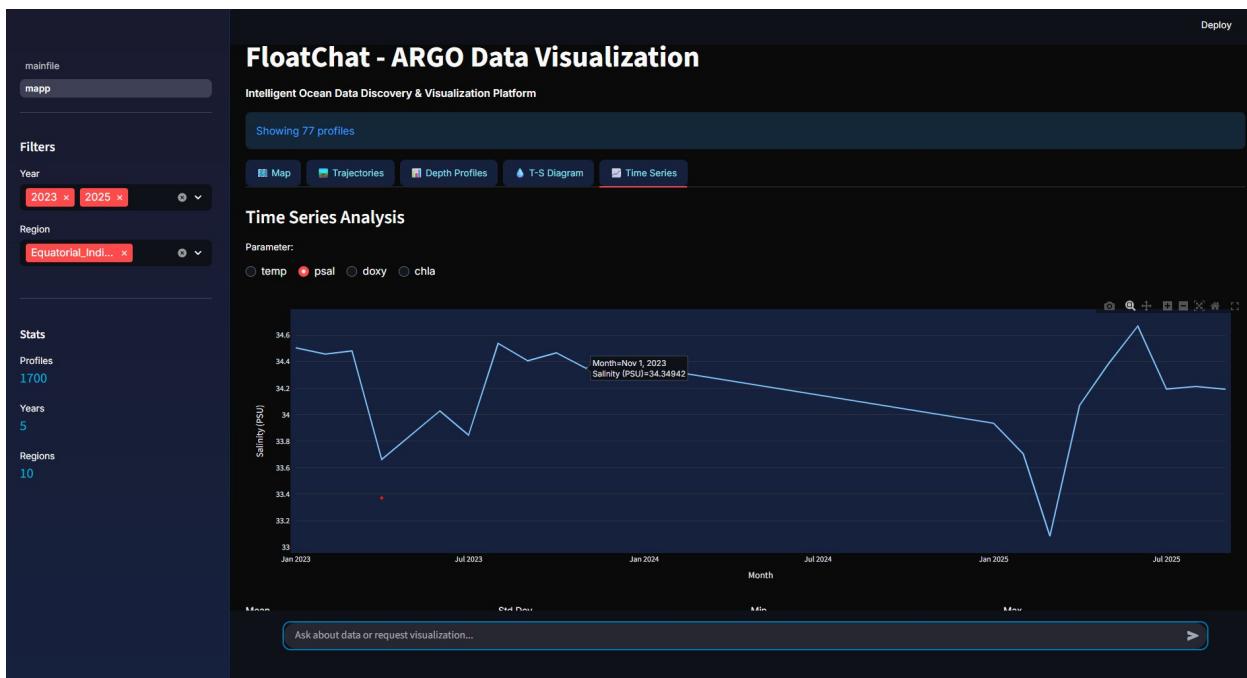
### 3 = Vertical DEPTH Profile VISUALIZATION with filter of YEAR



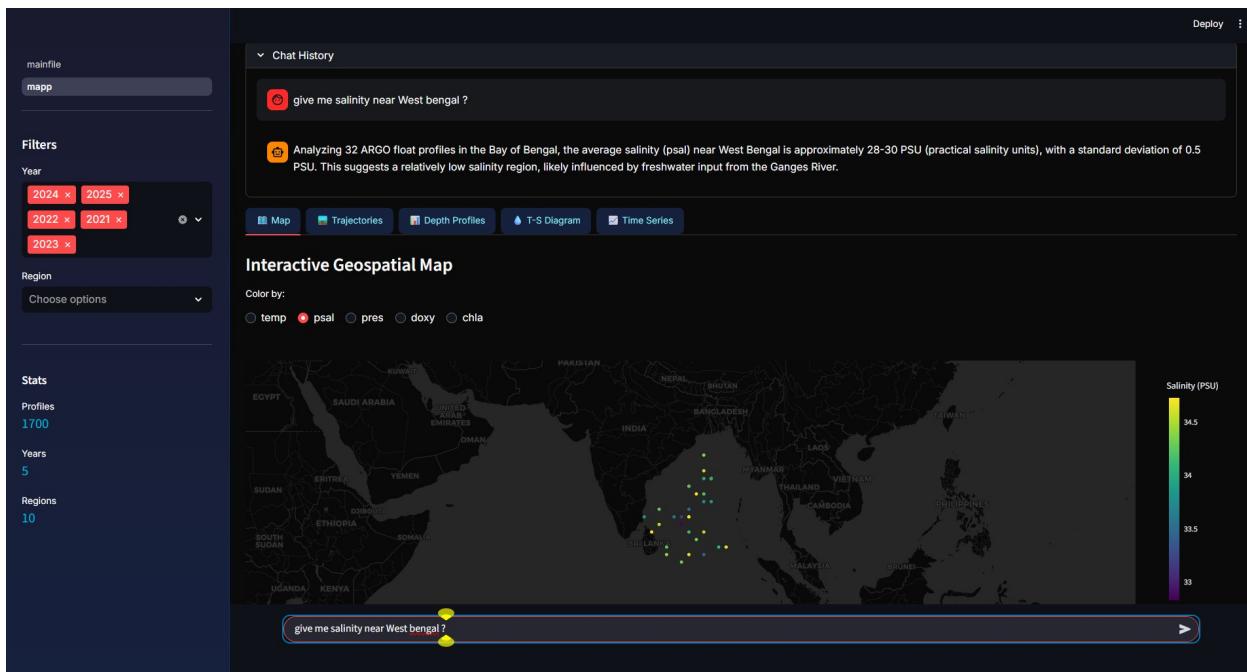
### 4 = DIAGRAM VISUALIZATION with filter of YEAR and REGION



## 5 = TIME - SERIES VISUALIZATION with filter of YEAR and REGION



## 6 = MAPPING VISUALIZATION == Based on User Query



## 7 = Based on Selected Filter of Year and Region = Exports CSV files with all details

```

File Edit Selection View Go Run Terminal Help < > Q: FloatChat ARGO
mapp.py 4, U argo_data_20250928_010048.csv argo_data_20250927_101157.csv argo_data_20250927_094747.csv O chat_history_20250927_094824.json O argi > BLACKBOX < ...
FLOATCHAT ARGO
└── mapp.py
    ├── .env
    ├── .env.example
    ├── .vscode
    ├── MINIO
    ├── pycache_
    ├── daily_dataset
    ├── data
    └── Dataset
        ├── 2021
        ├── 2022
        ├── 2023
        ├── 2024
        ├── 2025
        ├── Logs
        ├── Models
        ├── Processed
        └── Scripts
            └── DatasetJson
                ├── 2021
                ├── 2022
                ├── 2023
                ├── 2024
                ├── 2025
                ├── exports
                ├── frontend
                ├── logs
                ├── metadata
                ├── models
                ├── node_modules
                └── pages
                    └── mapp.py 4, U
            └── VectorIndex
                └── .dockerignore
        └── .env
        └── .env.example
    └── OUTLINE
    └── TIMELINE
PROBLEMS: 10 TERMINAL OUTPUT DEBUG CONSOLE PORTS CODE REFERENCE LOG
Processing: 20210831_prof.nc
Enhanced JSON saved: 20210831_prof.json ...
Local URL: http://localhost:8503
Network URL: http://10.192.21.208:8503

```

```

1 date,latitude,longitude,region,temperature,Salinity,Max Depth
2 2023-01-06,4.0,91.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Eastern_Indian",7.4968976974487305,34.50251388549805,2035.0
3 2023-02-15,8.0,63.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.88970191955664,34.60889447021484,2233.1000
4 2023-02-20,-4.0,52.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",7.159158229827881,34.4412727355957,5570,2001953125
5 2023-02-27,2.0,65.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.4587681532959,34.3192677294922,5467,10809785625
6 2023-03-09,4.0,89.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.098996619251709,34.418399810791016,5402,2001953125
7 2023-03-30,9.0,64.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.698903560638428,34.54103088378906,4484.29980
8 2023-04-16,-5.0,81.0,"Equatorial_Indian, Tropical_Indian",7.1002092361450195,34.603172302246094,5697,2998046875
9 2023-04-17,1.0,57.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.659725841522217,32.71965026855469,4793,7001953125
10 2023-06-08,8.0,65.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",8.267956733703613,34.803260803222656,5405,7001
11 2023-06-13,7.0,68.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",8.56340026855469,4653,2001953125
12 2023-06-15,1.0,57.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.252749443954194,33.7535285949707,4627,5
13 2023-06-24,7.0,69.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.758261680603027,34.142948150634766,4707,2001953125
14 2023-06-25,-9.0,66.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",7.422669410705566,33.871376037597656,4611,2001953125
15 2023-07-07,1.0,78.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.71180534362793,33.93423980443436,5002,2001953125
16 2023-07-08,4.0,87.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.3232598304748535,33.91437530517578,5403,10009765625
17 2023-07-17,2.0,64.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.636142253875732,33.490196228027344,4949,10009765625
18 2023-07-27,5.0,61.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",7.6415839195251465,34.04200744628906,4943,2998046875
19 2023-08-06,4.0,64.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.40838537979126,34.25251770019531,3993.0
20 2023-08-11,3.0,65.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.426608562469482,34.82176971435547,3626,10009765625
21 2023-09-05,4.0,64.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.227376937866211,34.188369750997656,5681,2001953125
22 2023-09-14,-9.0,49.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",8.202950477600098,34.49274826049895,4954,89990234375
23 2023-09-16,3.0,69.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.711376190185547,34.48566436767578,2036.0
24 2023-09-26,8.0,69.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.615789664187012,34.45553588671875,2946.8000
25 2023-10-06,7.0,69.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.464356067727051,34.530798736572266,4868,89990234375
26 2023-10-13,-9.0,49.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",6.747960090637209,34.48023986816496,4403,10009765625
27 2023-10-16,7.0,69.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.326345443725586,33.92900085449219,5681.0
28 2023-10-19,-7.0,85.0,"Equatorial_Indian, Tropical_Indian",7.099613609313965,34.75212860107422,3776,30004882125
29 2023-10-25,5.0,64.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.589738845825195,34.7269401550293,5004,39990234375
30 2023-10-26,8.0,69.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.46295976363873935,34.34183128727539,5685.5
31 2023-10-31,-9.0,44.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",8.076212882995605,34.7191095214844,4756,7998046875
32 2023-11-05,8.0,69.0,"Arabian_Sea, Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",7.369945526123047,34.54052734375,5683.60009765
33 2023-11-06,4.0,88.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.88614471435469,33.94632339477539,5333,39990234375
34 2023-11-14,4.0,64.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Western_Indian",6.814496040344238,34.59968185424885,4493,2998046875
35 2023-11-15,3.0,90.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region, Eastern_Indian",8.295949935913086,34.12075424194336,5683.0
36 2023-11-20,1.0,77.0,"Equatorial_Indian, Tropical_Indian, Monsoon_Region",7.464356067727051,34.530798736572266,4868,89990234375
37 2023-12-22,-9.0,46.0,"Equatorial_Indian, Tropical_Indian, Western_Indian",7.7530101371276514,34.0010096247656,4019,89990234375

```