Name: Vinayak V Thayil Roll No:AM.EN.U4CSE21161

```
import numpy as np
import pandas as pd
# Set a random seed for reproducibility
np.random.seed(42)
# Generate random data for three features: Age, Income, and Score
num_samples = 100 # Number of data points
age = np.random.randint(18, 65, size=num_samples)
income = np.random.normal(50000, 10000, size=num_samples)
score = np.random.uniform(0, 100, size=num_samples)
# Create a DataFrame to store the data
data = pd.DataFrame({
 'Age': age,
 'Income': income,
 'Score': score
})
# Print the first few rows of the dataset
print(data.head())
⊟
       Age
                  Income
        56 56363.051083 17.495493
     1
        46 40932.793314 98.216834
     2 32 54760.425874 51.663589
        60 63036.612684 26.082917
     3
        25 52115.870123 99.625370
import faker
import datetime
import random
np.random.seed(42)
def random_dates(start_date, end_date, n=10):
    date_list = [start_date + datetime.timedelta(days=random.randint(0, (end_date - start_date).days)) for _ in range(n)]
    return date_list
fake = Faker()
num_records = 100
employee_ids = list(range(1, num_records + 1))
employee_names = [fake.name() for _ in range(num_records)]
departments = ['Sales', 'Marketing', 'Engineering', 'Finance', 'HR']
employee_departments = [random.choice(departments) for _ in range(num_records)]
employee_salaries = [random.randint(50000, 100000) if random.random() > 0.2 else np.nan for _ in range(num_records)]
start_date = datetime.date(2010, 1, 1)
end_date = datetime.date(2023, 1, 1)
employee_joining_dates = random_dates(start_date, end_date, num_records)
data = {
    'Employee ID': employee_ids,
    'Employee Name': employee_names,
    'Department': employee_departments,
    'Salary': employee_salaries,
    'Joining Date': employee_joining_dates
employee_df = pd.DataFrame(data)
print(employee_df.head())
        Employee ID
                    Employee Name Department Salary Joining Date
                    Carlos Bentley Marketing 82418.0 2022-07-16
                1
                       Brian Morse Marketing 82785.0
                                                         2017-12-13
     1
                 2
     2
                 3
                      James Jimenez
                                        Sales 79352.0
                                                         2011-06-15
     3
                          Amy Moss Marketing 60858.0
                                                        2020-01-02
                 5 David Martinez
                                           HR 84281.0 2022-02-28
missing_count = employee_df.isnull().sum()
missing_percentage = (missing_count / len(employee_df)) * 100
missing info = pd.DataFrame({
    'Missing Count': missing_count,
    'Missing Percentage': missing_percentage
})
print(missing_info)
                   Missing Count Missing Percentage
     Employee ID
                                                 0.0
     Employee Name
                                a
                                                  0.0
```

Department	0	0.0
Salary	20	20.0
Joining Date	0	0.0