```
 1 C:\Users\DELL\anaconda3\python.exe E:/Golder_Folder/
   PycharmProjects2/MichaelProject/main_indian.py
 2 _____Indian
   Data_____
 3 Index            0
 4 District         0
 5 Village          0
 6 pH               0
 7 EC               0
 8 TDS              0
 9 TH               0
10 Alkalinity       0
11 Calcium          0
12 Magnesium        0
13 Sodium           0
14 Potassium        0
15 Bicarbonate      0
16 Chloride         0
17 Sulphate         0
18 Fluoride         0
19 is_drinkable     0
20 WQI              0
21 WQC              0
22 dtype: int64
23 <class 'pandas.core.frame.DataFrame'>
24 RangeIndex: 1241 entries, 0 to 1240
25 Data columns (total 19 columns):
26  #   Column        Non-Null Count   Dtype
27 ---  ------        --------------   -----
28  0   Index         1241 non-null    int64
29  1   District      1241 non-null    object
30  2   Village       1241 non-null    object
31  3   pH            1241 non-null    float64
32  4   EC            1241 non-null    float64
33  5   TDS           1241 non-null    int64
34  6   TH            1241 non-null    int64
35  7   Alkalinity    1241 non-null    int64
36  8   Calcium       1241 non-null    int64
37  9   Magnesium     1241 non-null    int64
38  10  Sodium        1241 non-null    int64
39  11  Potassium     1241 non-null    float64
```

```
40  12  Bicarbonate   1241 non-null   int64
41  13  Chloride      1241 non-null   int64
42  14  Sulphate      1241 non-null   int64
43  15  Fluoride      1241 non-null   float64
44  16  is_drinkable  1241 non-null   int64
45  17  WQI           1241 non-null   float64
46  18  WQC           1241 non-null   object
47 dtypes: float64(5), int64(11), object(3)
48 memory usage: 184.3+ KB
49 Model Name: RF, Fold Number: 0
50 Elapsed time:  0.17421913146972656
51 Model Name: XGB, Fold Number: 0
52 Elapsed time:  0.07443976402282715
53 Model Name: LGBM, Fold Number: 0
54 Elapsed time:  0.06399822235107422
55 Model Name: AILGBM, Fold Number: 0
56 Elapsed time:  0.052094459533691406
57 Model Name: RF, Fold Number: 1
58 Elapsed time:  0.17580842971801758
59 Model Name: XGB, Fold Number: 1
60 Elapsed time:  0.058737754821777344
61 Model Name: LGBM, Fold Number: 1
62 Elapsed time:  0.0895223617553711
63 Model Name: AILGBM, Fold Number: 1
64 Elapsed time:  0.057161808013916016
65 Model Name: RF, Fold Number: 2
66 Elapsed time:  0.1781775951385498
67 Model Name: XGB, Fold Number: 2
68 Elapsed time:  0.06475830078125
69 Model Name: LGBM, Fold Number: 2
70 Elapsed time:  0.06452322006225586
71 Model Name: AILGBM, Fold Number: 2
72 Elapsed time:  0.048996448516845 7
73 Model Name: RF, Fold Number: 3
74 Elapsed time:  0.17777681350708008
75 Model Name: XGB, Fold Number: 3
76 Elapsed time:  0.05300736427307129
77 Model Name: LGBM, Fold Number: 3
78 Elapsed time:  0.06751012802124023
79 Model Name: AILGBM, Fold Number: 3
80 Elapsed time:  0.049520254135131836
```

```
 81 Model Name: RF, Fold Number: 4
 82 Elapsed time:  0.17968630790710045
 83 Model Name: XGB, Fold Number: 4
 84 Elapsed time:  0.054515838623046875
 85 Model Name: LGBM, Fold Number: 4
 86 Elapsed time:  0.07662153244018555
 87 Model Name: AILGBM, Fold Number: 4
 88 Elapsed time:  0.05099821090698242
 89 Accuracy of Meta model: 1.0
 90 Elapsed time for Meta Prediction: 0.
    003999471664428711 for fold 0:
 91 Accuracy of Meta model: 0.9736842105263158
 92 Elapsed time for Meta Prediction: 0.
    033525705337524414 for fold 1:
 93 Accuracy of Meta model: 1.0
 94 Elapsed time for Meta Prediction: 0.
    054000139236450195 for fold 2:
 95 Accuracy of Meta model: 1.0
 96 Elapsed time for Meta Prediction: 0.
    04951930046081543 for fold 3:
 97 Accuracy of Meta model: 1.0
 98 Elapsed time for Meta Prediction: 0.
    04499959945678711 for fold 4:
 99 Ensemble accuracy: 1.0
100 Elapsed time for RF model: 0.17579221725463867
101 Random Forest Individual Performance: 0.
    9967845659163987
102 Elapsed time for XGB model: 0.05851411819458008
103 XGBoost Individual Performance: 0.9935691318327974
104 Elapsed time for LightGBM model: 0.06708455085754395
105 LightGBM Individual Performance: 1.0
106 Elapsed time for AILGBM model: 0.07051372528076172
107 AI-LightGBM Individual Performance: 1.0
108
109 Process finished with exit code 0
110
```