

PNT2022TMID21280_Efficient Water Quality Analysis & Prediction using Machine Learning.

Water Quality Index(Wqi) Calculation:

```
In [18]: data['npH']=data.ph.apply(lambda x:(100 if(8.5>=x>=7)
                                         else(80 if(8.6>=x>=8.5) or (6.9>=x>=6.8)
                                         else(60 if(8.8>=x>=8.6) or (6.8>=x>=6.7)
                                         else(40 if(9>=x>=8.8) or (6.7>=x>=6.5)
                                         else 0))))))
```

```
In [19]: data['ndo']=data.do.apply(lambda x:(100 if(x>=6)
                                         else(80 if(6>=x>=5.1)
                                         else(60 if(5>=x>=4.1)
                                         else(40 if(4>=x>=3)
                                         else 0))))))
```

```
In [20]: data['nco']=data.tc.apply(lambda x:(100 if(5>=x>=0)
                                         else(80 if(50>=x>=5)
                                         else(60 if(500>=x>=50)
                                         else(40 if(10000>=x>=500)
                                         else 0))))))
```

```
In [21]: data['nbdo']=data.bod.apply(lambda x:(100 if(3>=x>=0)
                                         else(80 if(6>=x>=3)
                                         else(60 if(80>=x>=6)
                                         else(40 if(125>=x>=80)
                                         else 0))))))
```