TEAM ID	PNT2022TMID16214
PROJECT NAME	Efficient Water Quality Analysis and Prediction using Machine Learning

Water Quality Index calculation:

Water Quality Index (WQI) Calculation

a)calculation of pH

In [346]:
```
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)))))
```

b)calculation of dissolved oxygen

In [347]:
```
data['ndo']=data.co.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)))))
```

c)calculation of total coliform

In [348]:
```
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)))))
```


d)calculation of B.D.O

In [349]:
```
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)))))
```