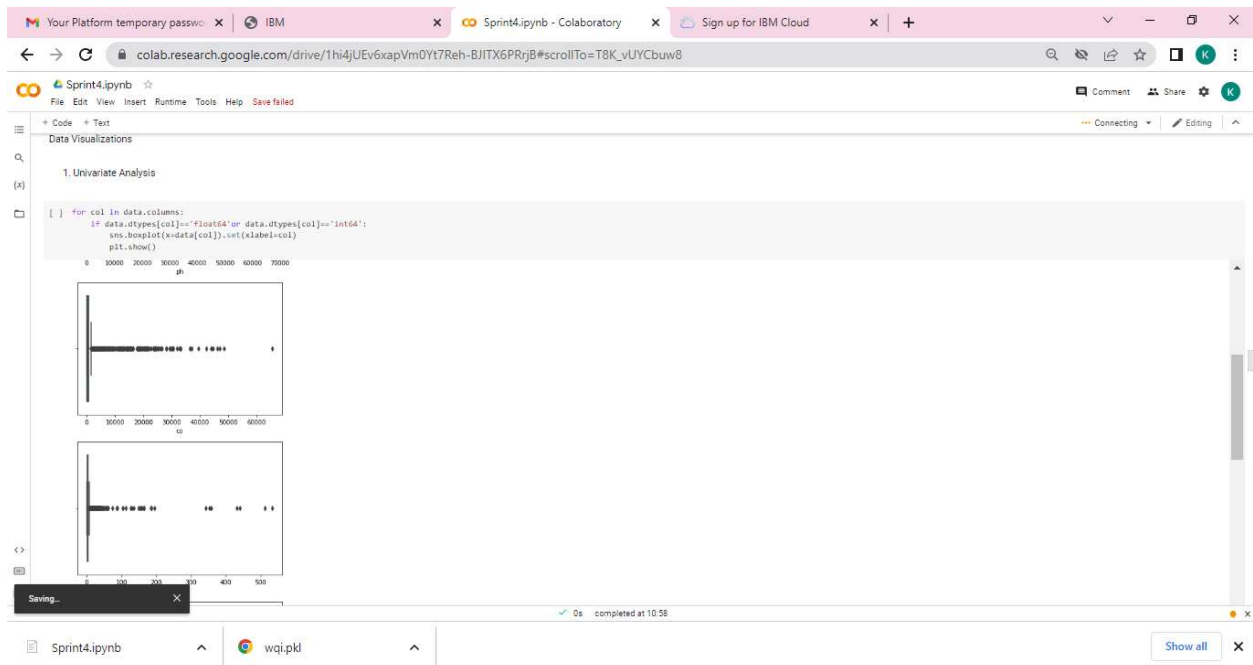
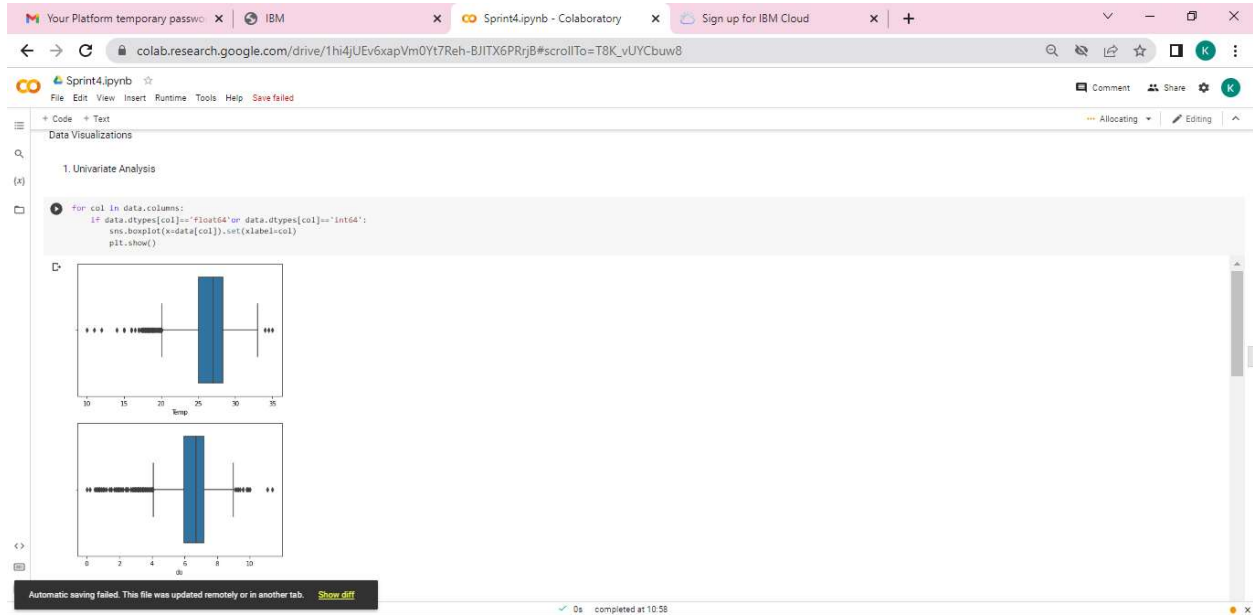


PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT-4

WATER QUALITY ANALYSIS



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Sprint4.ipynb

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```
[ ]: datacorr()
```

	Temp	do	ph	co	bod	na	tc	year	npH	ndo	...	nbdo	nec	nna	wph	wdo	wbdo	wec	wna	wco	wql
Temp	1.000000	0.025902	0.017280	0.143678	-0.047410	-0.213082	0.008795	-0.000676	-0.084201	0.080078	...	0.170811	0.069943	-0.008795	-0.084201	0.080078	0.170811	0.069943	-0.008795	0.048281	0.081038
do	0.025902	1.000000	0.034824	-0.185884	-0.248431	-0.190797	-0.142653	-0.068800	-0.049083	0.890874	...	0.417248	0.372838	0.055910	-0.049083	0.890874	0.417248	0.372838	0.055910	0.323873	0.878768
ph	0.017280	0.034824	1.000000	-0.017843	0.041405	-0.008808	-0.002123	-0.128234	-0.133485	0.017902	...	-0.019300	0.087374	0.002727	-0.133485	0.017902	-0.019300	0.087374	0.002727	-0.017097	-0.059481
co	0.143678	-0.185884	-0.017843	1.000000	0.015144	0.058888	0.003415	0.028950	0.113803	-0.132168	...	-0.159303	-0.361918	-0.051481	0.113803	-0.132168	-0.159303	-0.361918	-0.051481	-0.087263	-0.104916
bod	-0.047410	-0.248431	0.041405	0.015144	1.000000	0.128073	0.184393	-0.058320	0.028978	-0.247493	...	-0.588824	-0.178144	-0.015837	0.028978	-0.247493	-0.588824	-0.178144	-0.015837	-0.134900	-0.349332
na	-0.213082	-0.190797	-0.008808	0.058888	0.128073	1.000000	-0.008882	0.018801	0.108203	-0.208086	...	-0.303398	-0.163845	-0.728791	0.108203	-0.208086	-0.303398	-0.163845	-0.728791	-0.230604	-0.285051
tc	0.008795	-0.142653	-0.002123	0.003415	0.015144	-0.008882	1.000000	0.038141	0.020591	-0.137865	...	-0.142457	-0.044916	0.000000	0.020591	-0.137865	-0.142457	-0.044916	0.000000	-0.071757	-0.133948
year	-0.000676	-0.068800	-0.128234	0.028950	-0.058320	0.018801	0.038141	1.000000	0.358773	-0.052041	...	0.051207	-0.030894	0.013075	0.358773	-0.052041	0.051207	-0.030894	0.013075	0.882248	0.180829
npH	-0.084201	-0.049083	-0.133485	0.113803	0.028978	0.108203	0.020591	0.358773	1.000000	-0.048204	...	-0.145889	-0.287915	-0.027917	1.000000	-0.048204	-0.145889	-0.287915	-0.027917	-0.061882	0.304588
ndo	0.080078	0.890874	0.017902	-0.132168	-0.247493	-0.208086	-0.137865	-0.052041	-0.048204	1.000000	...	0.381218	0.323158	0.048198	0.000000	0.381218	0.323158	0.048198	0.000000	0.270282	0.887827
nco	0.048281	0.323873	-0.017097	-0.087263	-0.134900	-0.230604	-0.071757	0.882248	-0.061882	0.270282	...	0.379149	0.288459	0.073058	-0.061882	0.270282	0.379149	0.288459	0.073058	1.000000	0.728725
nbdo	0.170811	0.417248	-0.019300	-0.159303	-0.588824	-0.303398	-0.142457	0.051207	-0.145889	0.381218	...	1.000000	0.436228	0.044889	0.381218	1.000000	0.436228	0.044889	0.379149	0.818169	
nec	0.069943	0.372838	0.087374	-0.361918	-0.178144	-0.193845	-0.044916	-0.030894	-0.287915	0.323158	...	0.436228	1.000000	0.057844	-0.287915	0.323158	0.436228	1.000000	0.057844	0.288459	0.332984
nna	-0.008795	0.055910	0.002727	-0.051481	-0.015837	-0.728791	0.000000	0.013075	-0.027917	0.048198	...	0.044889	0.057844	1.000000	-0.027917	0.048198	0.044889	0.057844	1.000000	0.073058	0.088247
wph	-0.084201	-0.049083	-0.133485	0.113803	0.028978	0.108203	0.020591	0.358773	1.000000	-0.048204	...	-0.145889	-0.287915	-0.027917	1.000000	-0.048204	-0.145889	-0.287915	-0.027917	-0.061882	0.304588
wdo	0.080078	0.890874	0.017902	-0.132168	-0.247493	-0.208086	-0.137865	-0.052041	-0.048204	1.000000	...	0.381218	0.323158	0.048198	0.000000	0.381218	0.323158	0.048198	0.000000	0.270282	0.887827
wbdo	0.170811	0.417248	-0.019300	-0.159303	-0.588824	-0.303398	-0.142457	0.051207	-0.145889	0.381218	...	1.000000	0.436228	0.044889	0.381218	1.000000	0.436228	0.044889	0.379149	0.818169	
wec	0.069943	0.372838	0.087374	-0.361918	-0.178144	-0.193845	-0.044916	-0.030894	-0.287915	0.323158	...	0.436228	1.000000	0.057844	-0.287915	0.323158	0.436228	1.000000	0.057844	0.288459	0.332984
wna	-0.008795	0.055910	0.002727	-0.051481	-0.015837	-0.728791	0.000000	0.013075	-0.027917	0.048198	...	0.044889	0.057844	1.000000	-0.027917	0.048198	0.044889	0.057844	1.000000	0.073058	0.088247
wco	0.048281	0.323873	-0.017097	-0.087263	-0.134900	-0.230604	-0.071757	0.882248	-0.061882	0.270282	...	0.379149	0.288459	0.073058	-0.061882	0.270282	0.379149	0.288459	0.073058	1.000000	0.728725
wql	0.081038	0.878768	-0.059481	-0.104916	-0.349332	-0.285051	-0.133948	0.180829	0.304588	0.887827	...	0.818169	0.332984	0.088247	0.304588	0.887827	0.818169	0.332984	0.088247	0.728725	1.000000

21 rows x 21 columns

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```
[ ]: sns.heatmap(datacorr(),annot=True)
```

Removing Unnecessary Columns in the Dataset which is used to calculate the Water Quality Index (WQI)

```
[ ]: data.drop(['Temp','station','location','state','nbdo','nec','nna','wph','wdo','wbdo','wec','wna','wco','npH','ndo'],axis = 1,inplace=True)
```

```
data.head()
```

	do	ph	co	bod	na	tc	year	wql
0	6.7	7.5	203.0	8.940049	0.1	27.0	2014	84.48
1	5.7	7.2	189.0	2.000000	0.2	8381.0	2014	78.68
2	6.3	6.9	179.0	1.700000	0.1	5330.0	2014	79.28
3	5.8	6.9	64.0	3.800000	0.5	8443.0	2014	86.34
4	5.8	7.3	83.0	1.600000	0.4	5800.0	2014	77.14

1 datacorr()

Saving...

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