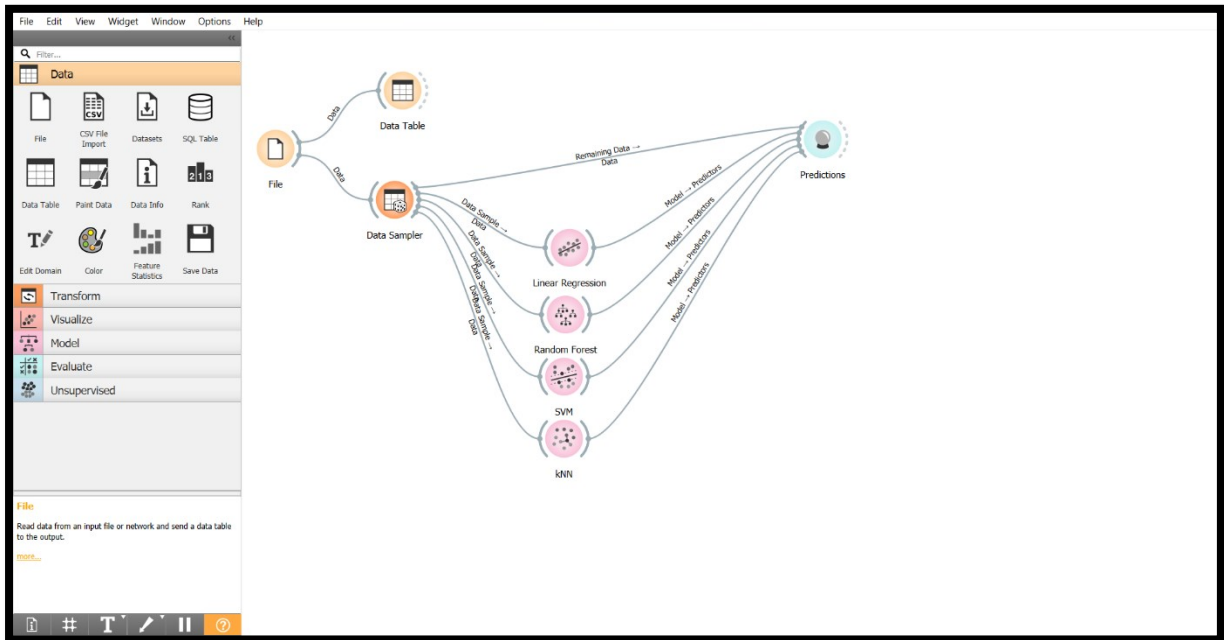


## Using Orange as a Software to find Out which algorithm will be best for the prediction of the PH



The screenshot shows the Orange3 interface with the 'File - Orange' dialog box open. The dialog box displays the source file 'Task3/gf.csv' and the file type 'Automatically detect type'. The 'Info' section shows 47217 instances, 9 features (no missing values), and 0 meta attributes. The 'Columns' section lists the following features:

Name	Type	Role	Values
1 Temperature (C)	numeric	feature	
2 Turbidity(NTU)	numeric	feature	
3 Dissolved ...	numeric	feature	
4 PH	numeric	target	
5 Ammonia(g/ml)	numeric	feature	
6 Nitrate(g/ml)	numeric	feature	
7 Population	numeric	feature	

testing for the task 4.ows - Orange

File Edit View Widget Window Options Help

Filter...

Data

File CSV File Import Datasets SQL Table

Data Table Paint Data Data Info Rank

Edit Domain Color Feature Statistics Save Data

Transform

Visualize

Model

Evaluate

Unsupervised

Data Table

View the dataset in a spreadsheet.

100%

472/17 instances (no missing data)  
8 features  
Numeric outcome  
No meta attributes.

Variables

☒ Show variable labels (if present)

☐ Visualize numeric values

☒ Color by instance classes

Selection

☒ Select full rows

Restore Original Order

☒ Send Automatically

473k | 473k

	pH	Temperature (C)	Turbidity(NTU)	dissolved Oxygen(g/m	Ammonia(g/m)	N
1	8.43365	24.8750	100.0000	4.505	0.45842	
2	8.43816	24.9375	100.0000	6.601	0.45842	
3	8.42457	24.8750	100.0000	15.797	0.45842	
4	8.43365	24.9375	100.0000	5.046	0.45842	
5	8.40541	24.9375	100.0000	38.407	0.45842	
6	8.43093	24.9375	100.0000	3.863	0.45842	
7	8.43816	24.8750	100.0000	2.831	0.45842	
8	8.42911	24.9375	100.0000	5.012	0.45842	
9	8.42911	24.9375	100.0000	2.916	0.45842	
10	8.43365	24.8750	100.0000	17.005	0.45842	
11	8.48358	24.8750	100.0000	6.964	0.45842	
12	8.42911	24.9375	100.0000	3.465	0.45842	
13	8.42911	24.9375	100.0000	4.319	0.45842	
14	8.43365	24.8750	100.0000	24.266	0.45842	
15	8.42911	24.9375	100.0000	25.204	0.45842	
16	8.42911	24.8750	100.0000	22.618	0.45842	
17	8.42911	24.8750	100.0000	2.484	0.45842	
18	8.43365	24.8750	100.0000	31.899	0.45842	
19	8.43365	24.8750	100.0000	23.928	0.45842	
20	8.44726	24.8750	100.0000	4.124	0.45842	

testing for the task 4.ows - Orange

File Edit View Widget Window Options Help

Filter...

Data

File CSV File Import Datasets SQL Table

Data Table Paint Data Data Info Rank

Edit Domain Color Feature Statistics Save Data

Transform

Visualize

Model

Evaluate

Unsupervised

Data Sampler

Randomly draw a subset of data points from the input dataset.

100%

File

Data Table

Data Sampler

Data Sample...

File View Window Help

Sampling Type

☒ Fixed proportion of data

80 %

☐ Fixed sample size

Instances: 1

☐ Sample with replacement

☐ Cross validation

Number of subsets: 10

Unused subset: 1

☐ Bootstrap

Options

☒ Replicable (deterministic) sampling

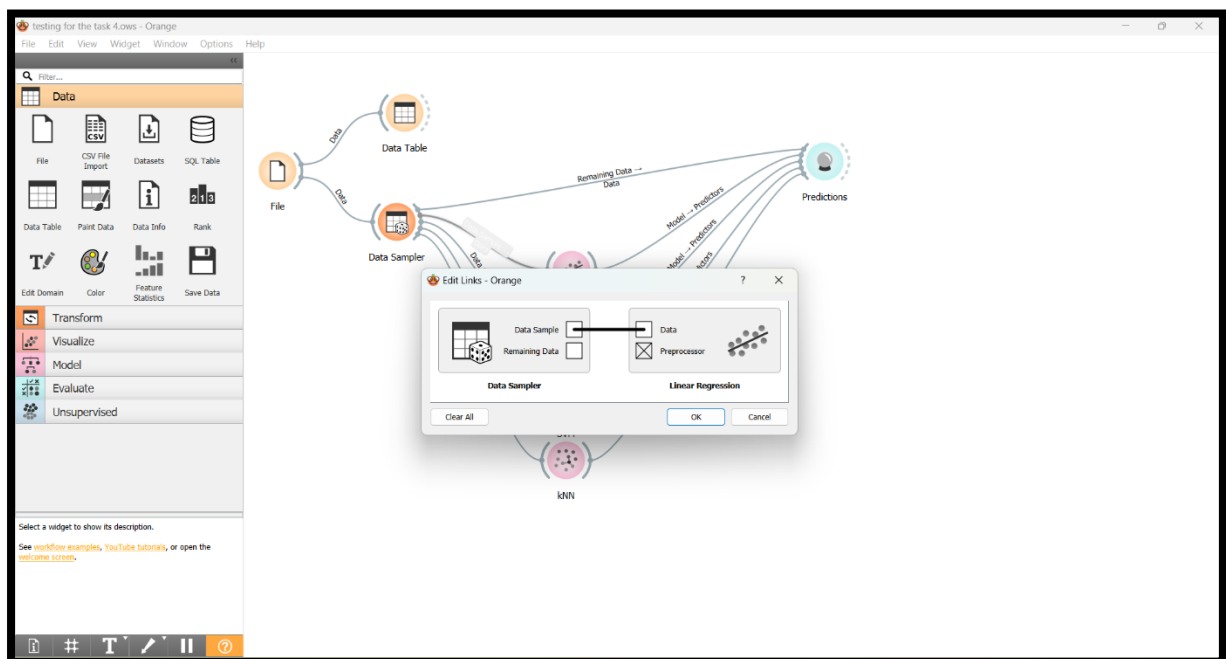
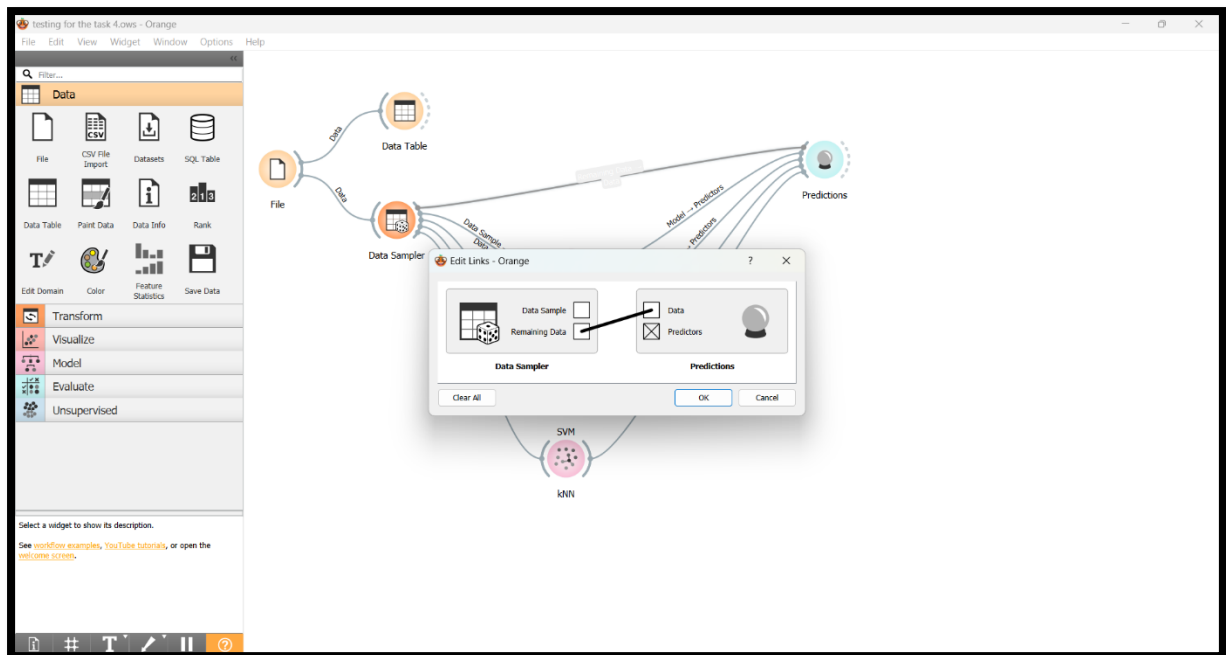
☐ Stratify sample (when possible)

Sample Data

473k | 378k

1kNN

Predictions





Predictions - Orange

File View Window Help

Shown regression error: Difference

	Linear Regression	error	Random Forest	error	SVM	error	kNN	error	PH	Temperature (C)	Turbidity(NTU)	solvent Oxygen(g/	Ammonia(g/ml)	Nitrate(g/ml)	Population	Fish_Length(cm)	Fish_Weight(g)
1	7.27556	0.82566	6.44511	-0.00...	6.22620	-0.22...	6.49257	0.04267	6.44990	24.0000	99.0000	10.058	0.36686	0.778.00000	75	17.6	51.72
2	4.88915	0.36398	4.36457	-0.16...	4.56545	0.04028	4.44346	-0.08...	4.52517	23.9375	100.0000	5.080	0.00016	0.411.00000	50	29.21	208.35
3	7.73811	0.42117	7.29269	-0.02...	6.90324	-0.41...	7.28698	-0.02...	7.31694	26.4375	27.0000	4.447	6.29023	0.123.00000	50	6.74	3.2
4	6.90925	-0.22...	7.13830	0.00748	5.86987	-1.26...	7.12083	-0.00...	7.13082	23.6250	86.0000	7.257	0.22657	0.1009.00000	50	21.52	88.4
5	6.37520	-0.51...	6.88481	-0.00...	5.23679	-1.64...	6.83212	-0.05...	6.88569	24.2500	97.0000	8.984	0.00043	0.1513.00000	75	23.42	118.66
6	6.09515	-0.81...	6.91556	0.00717	5.21095	-1.89...	6.92382	0.01543	6.90839	24.5000	100.0000	0.473	0.204702	0.982.00000	50	24.51	123.6
7	6.92251	-0.17...	7.09677	0.00227	5.88582	-1.20...	7.09722	0.00272	7.09450	24.5625	90.0000	4.496	0.32218	0.1098.00000	50	20.97	65.48
8	7.79853	0.50883	7.29464	0.00494	6.65666	-0.63...	7.28788	-0.00...	7.28970	24.7500	86.0000	8.748	0.3019634	0.106.00000	50	9.08	6.86
9	6.52647	-1.15...	7.68577	0.00568	5.38210	-2.29...	7.66829	-0.01...	7.68009	24.7500	94.0000	5.570	0.00017	0.1829.00000	75	21.83	109.52
10	7.23524	-0.21...	7.43548	-0.01...	6.19467	-1.25...	7.40682	-0.04...	7.44858	23.8750	100.0000	5.080	0.469.06256	0.563.00000	50	17.7	44.6
11	7.80955	-0.59...	8.39015	-0.01...	6.95607	-1.44...	8.39461	-0.00...	8.40187	26.6875	100.0000	8.429	0.45842	0.187.00000	50	7.5	3.85
12	7.79756	0.49424	7.29355	-0.00...	6.70679	-0.59...	6.53797	-0.76...	7.30332	24.1250	92.0000	26.320	65.39067	0.101.00000	50	11.42	10.52
13	0.80905	0.72772	7.85728	0.49495	6.72047	-0.64...	8.44908	1.08675	7.36233	23.9375	84.0000	16.006	0.23477	0.835.00000	75	7.72	5.1
14	7.37914	0.08490	7.07227	-0.22...	6.29295	-1.00...	7.16714	-0.12...	7.29424	22.9375	87.0000	9.211	0.2537.13477	0.457.00000	50	15.87	38.5
15	6.82895	-0.24...	7.07389	-0.00...	5.86116	-1.21...	7.12174	0.04539	7.07635	24.1875	100.0000	2.806	1.65009	0.747.00000	50	21.33	70.6
16	7.38274	0.07034	7.31457	0.00217	6.31499	-0.99...	7.33147	0.01907	7.31240	23.6875	99.0000	6.614	0.9447200.00000	0.368.00000	50	15.43	34.94
17	6.91794	-0.18...	7.09847	-0.00...	5.89345	-1.20...	7.09995	0.00091	7.09904	24.1250	90.0000	8.942	0.68218	0.961.00000	50	21.12	67
18	7.17798	-0.14...	7.29070	-0.03...	6.03923	-1.28...	7.29424	-0.03...	7.32602	23.8125	100.0000	5.080	0.25499	0.903.00000	50	20.02	48.76
19	7.83766	0.28467	7.56602	0.01303	6.67901	-0.87...	7.57659	0.02360	7.55299	24.3125	100.0000	3.972	0.33.36246	0.254.00000	75	10.06	12.3
20	7.20517	-0.10...	7.31905	0.00665	6.93585	-0.37...	7.32239	0.00999	7.31240	24.4375	8.0000	38.669	8.71086	0.455.00000	50	17.51	45
21	7.23465	-0.07...	7.30400	-0.00...	6.15021	-1.16...	7.30695	-0.00...	7.31240	22.4375	100.0000	5.080	0.355850	0.765.00000	50	19.73	48.24
22	7.62554	-0.14...	7.76431	-0.00...	6.70969	-1.05...	7.81628	0.04994	7.76634	25.5000	100.0000	2.923	0.57060.38281	0.133.00000	50	11.91	13.1
23	4.26229	3.91797	0.26568	-0.07...	3.70826	3.36394	0.25444	-0.08...	0.34432	25.5000	100.0000	3.200	0.386902	0.983.00000	50	30.63	254.9
24	4.05048	4.02392	0.03483	0.00827	3.61651	3.58995	0.03110	0.00454	0.02656	24.6250	100.0000	3.200	0.347394	0.1014.00000	50	31.35	273.72

Show performance scores

Model	MSE	RMSE	MAE	MAPE	R2
Linear Regression	1.201	1.096	0.597	2.642	0.551
Random Forest	0.016	0.125	0.028	0.045	0.994
SVM	1.973	1.405	1.190	2.956	0.263
kNN	0.112	0.334	0.083	0.199	0.958

94.5k | 94.5k | 94.5k | 94.5k

