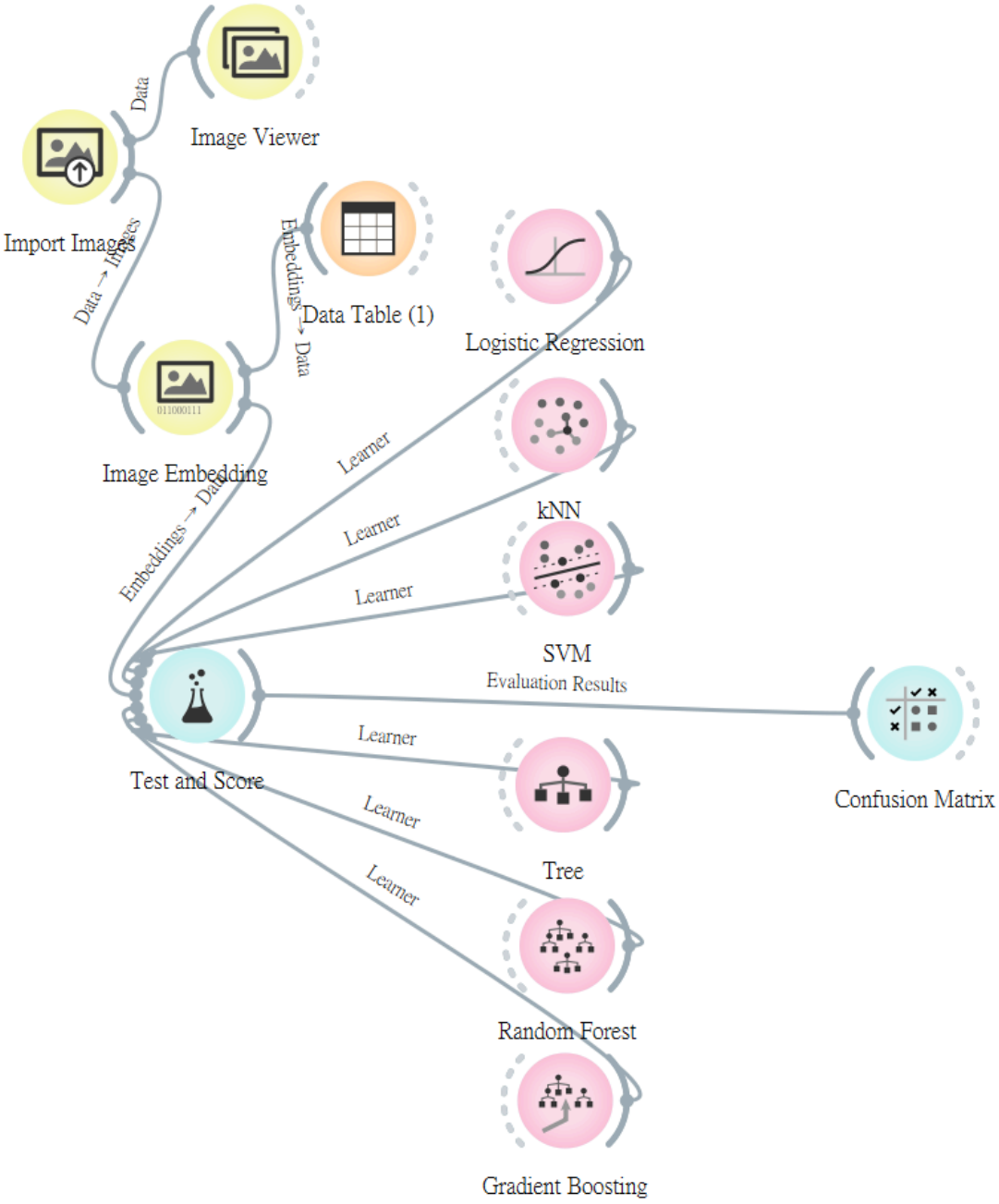
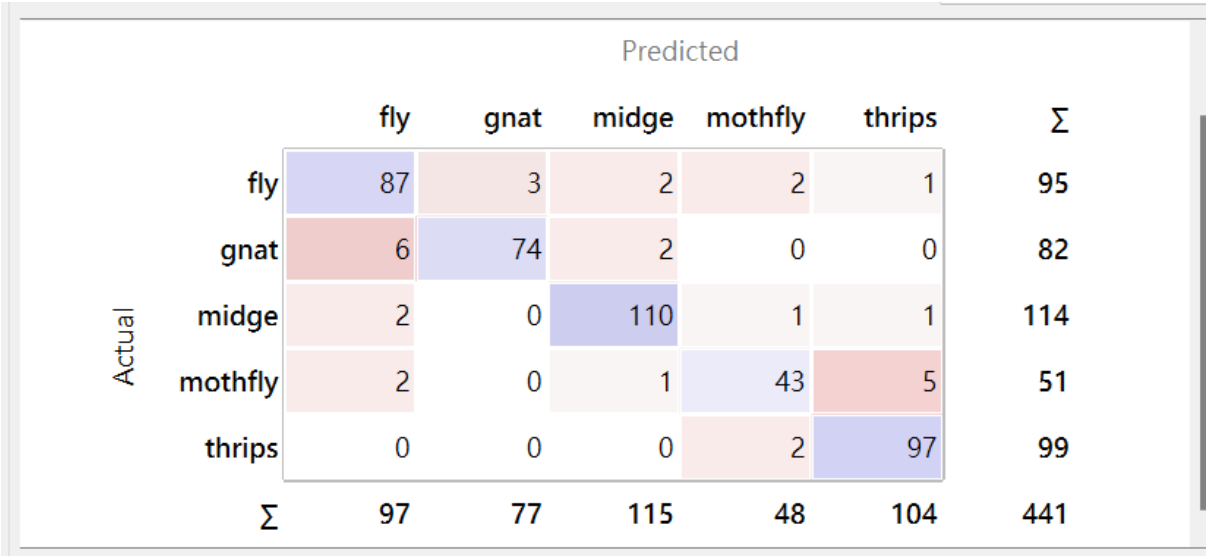


Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Prec	Recall	MCC
Logistic Regression	0.995	0.932	0.932	0.932	0.932	0.914
kNN	0.981	0.875	0.875	0.884	0.875	0.844
SVM	0.995	0.918	0.919	0.921	0.918	0.897
Tree	0.874	0.787	0.786	0.789	0.787	0.729
Random Forest	0.976	0.862	0.861	0.863	0.862	0.825
Gradient Boosting	0.984	0.905	0.904	0.904	0.905	0.879

logistic regression



Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	87	3	2	2	1	95
gnat	6	74	2	0	0	82
midge	2	0	110	1	1	114
mothfly	2	0	1	43	5	51
thrips	0	0	0	2	97	99
Σ	97	77	115	48	104	441

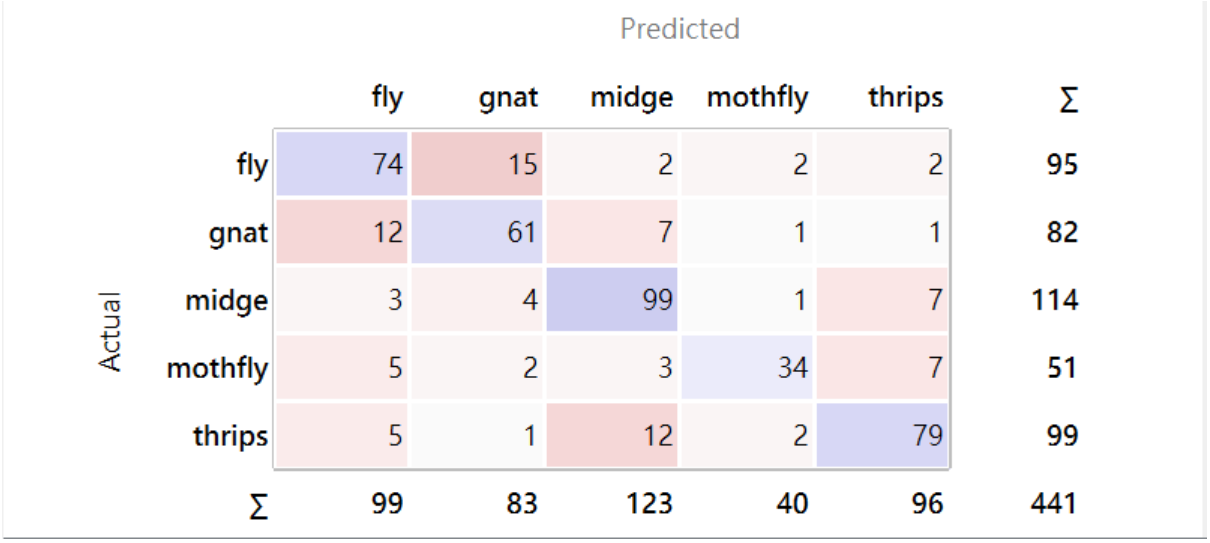
KNN

Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	72	18	2	2	1	95
gnat	1	76	4	1	0	82
midge	1	1	111	1	0	114
mothfly	1	0	3	44	3	51
thrips	1	1	10	4	83	99
Σ	76	96	130	52	87	441

SVM

Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	90	3	1	1	0	95
gnat	9	72	1	0	0	82
midge	2	0	108	1	3	114
mothfly	3	0	1	43	4	51
thrips	2	0	2	3	92	99
Σ	106	75	113	48	99	441

tree

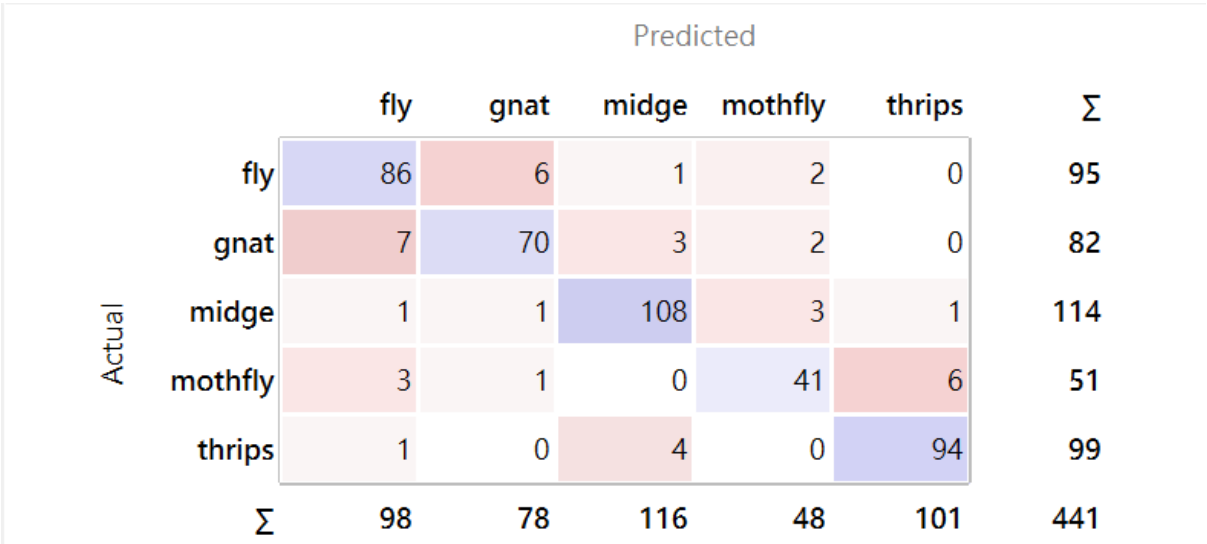


Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	74	15	2	2	2	95
gnat	12	61	7	1	1	82
midge	3	4	99	1	7	114
mothfly	5	2	3	34	7	51
thrips	5	1	12	2	79	99
Σ	99	83	123	40	96	441

random forest

Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	82	8	3	2	0	95
gnat	12	69	1	0	0	82
midge	2	2	107	3	0	114
mothfly	6	3	2	35	5	51
thrips	2	1	6	3	87	99
Σ	104	83	119	43	92	441

gradient boosting



Actual \ Predicted	fly	gnat	midge	mothfly	thrips	Σ
fly	86	6	1	2	0	95
gnat	7	70	3	2	0	82
midge	1	1	108	3	1	114
mothfly	3	1	0	41	6	51
thrips	1	0	4	0	94	99
Σ	98	78	116	48	101	441

Q:Why linear regression can't use for classification? Please write down your explanation in PDF file.

A:The linear regression algorithm is designed for predicting continuous numerical values rather than for classification tasks. Therefore, using it for classification problems may lead to inaccurate results.