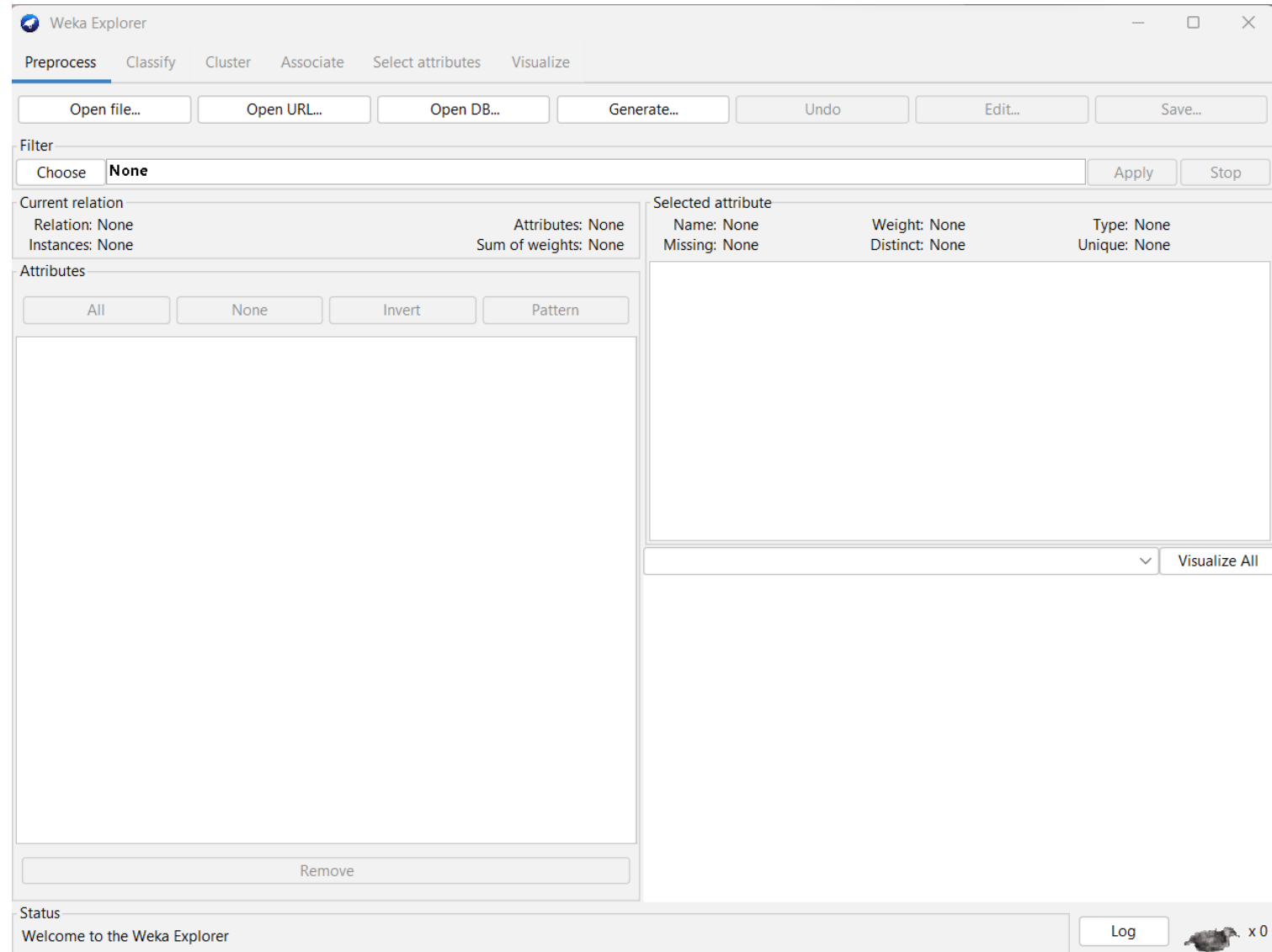
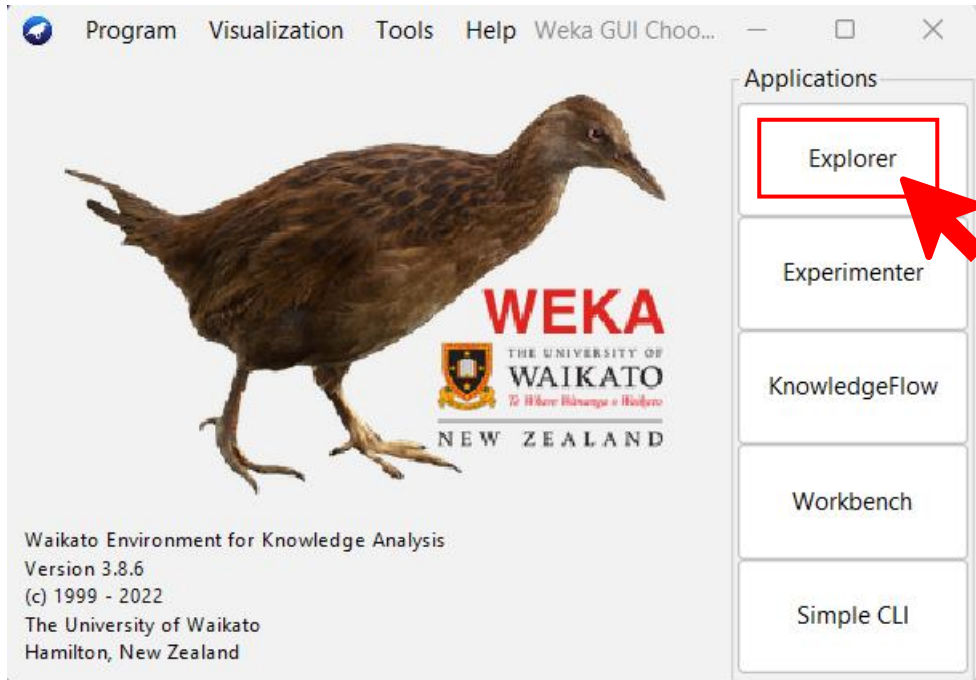


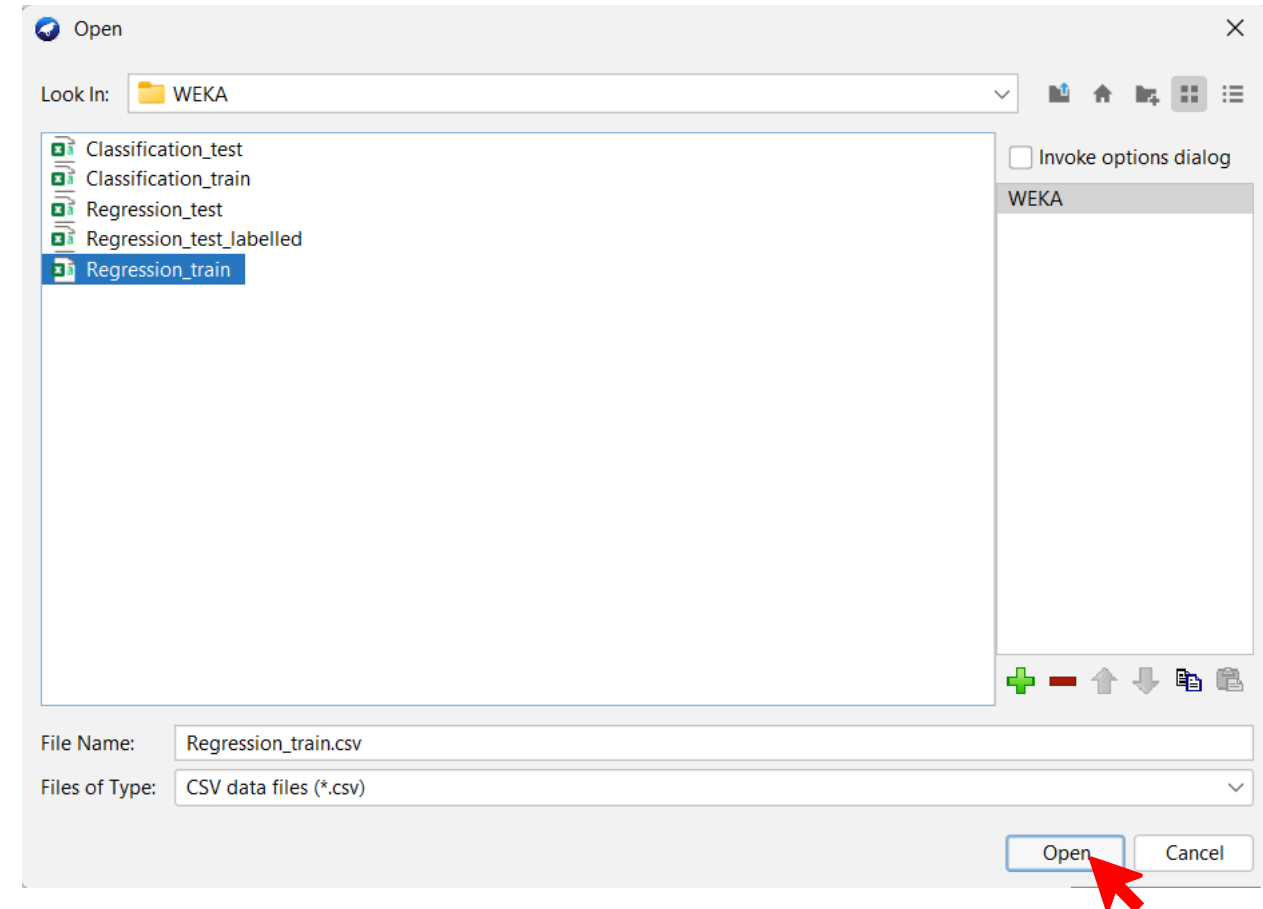
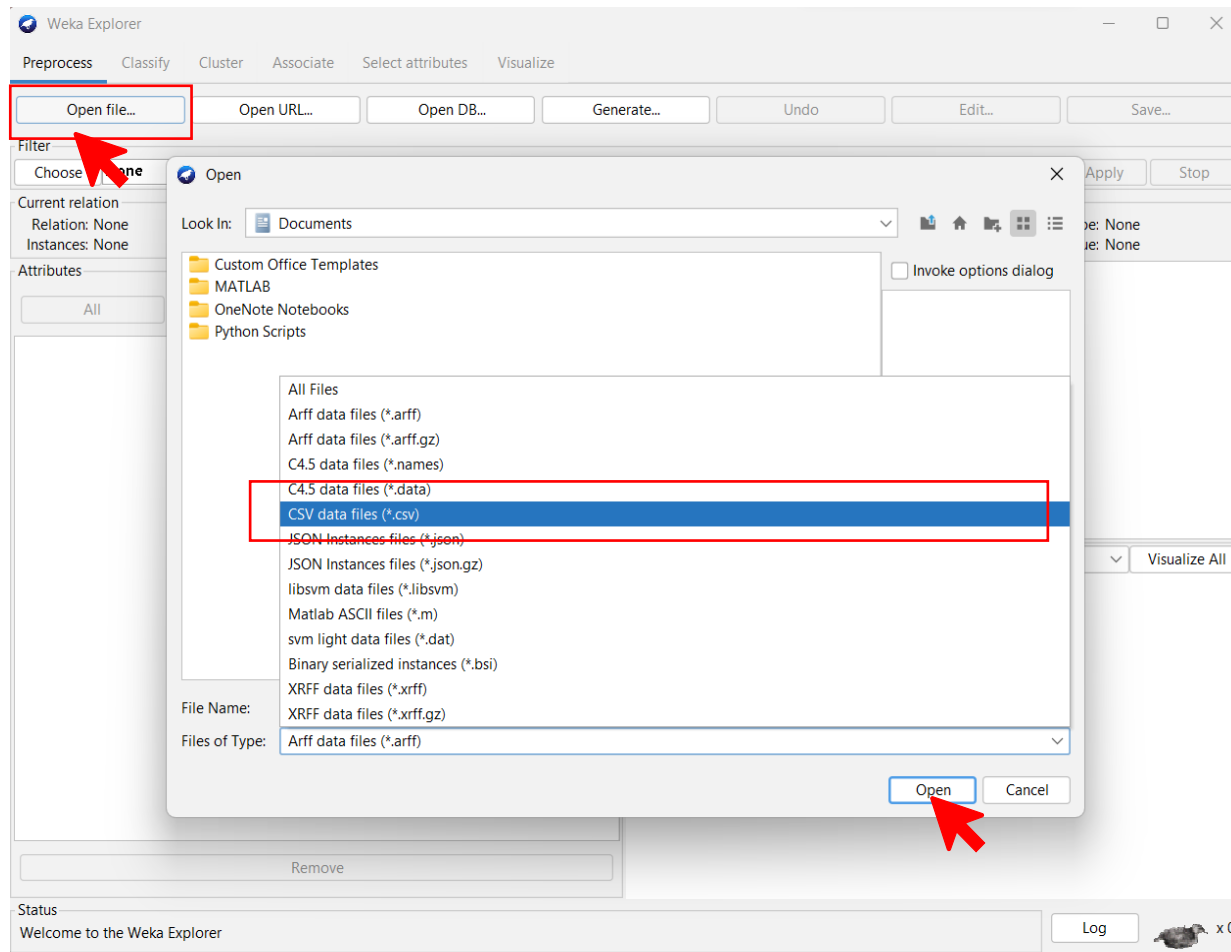
Regression using WEKA

Age prediction using Linear Regression

WEKA GUI



Loading Data



Dataset for Regression

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Open file... Open URL... Open DB... Generate... Undo **Edit...** Save...

Filter: Choose **None** Apply Stop

Current relation
Relation: Regression_train
Instances: 208 Attributes: 14
Sum of weights: 208

Selected attribute
Name: RPA2_3 Missing: 0 (0%) Distinct: 202 Type: Numeric
Unique: 196 (94%)

Attributes
All None Invert Pattern

| No. | Name |
|-----|-----------------------------------|
| 1 | <input type="checkbox"/> RPA2_3 |
| 2 | <input type="checkbox"/> ZYG11A_4 |
| 3 | <input type="checkbox"/> F5_2 |

Statistic Value

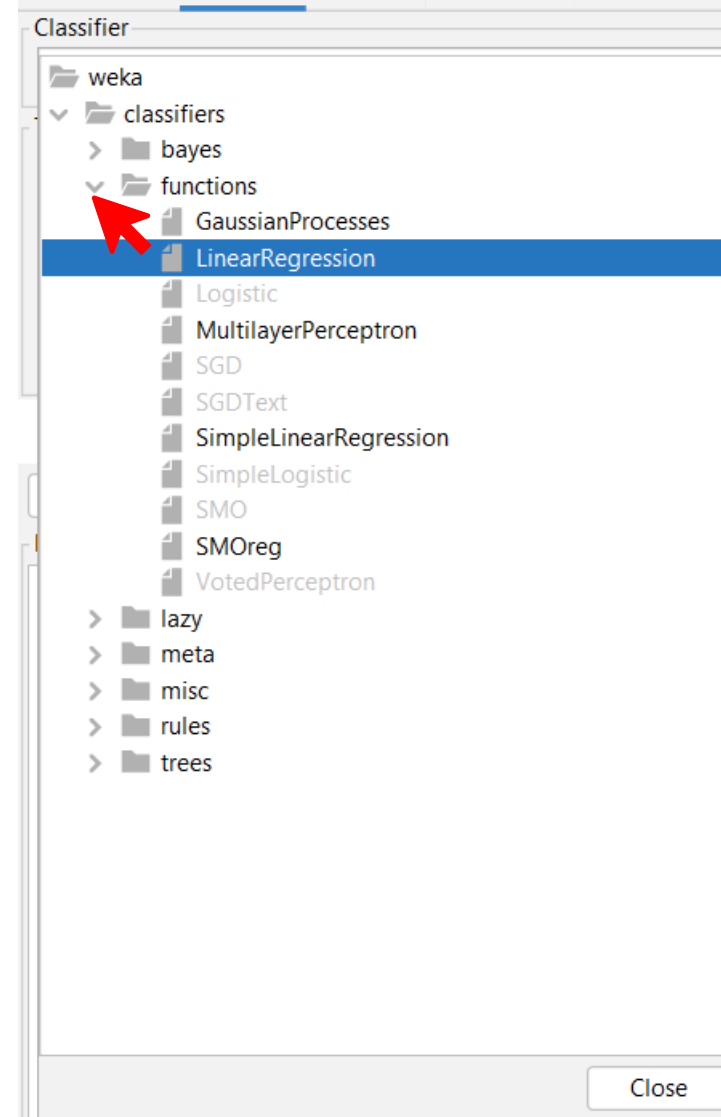
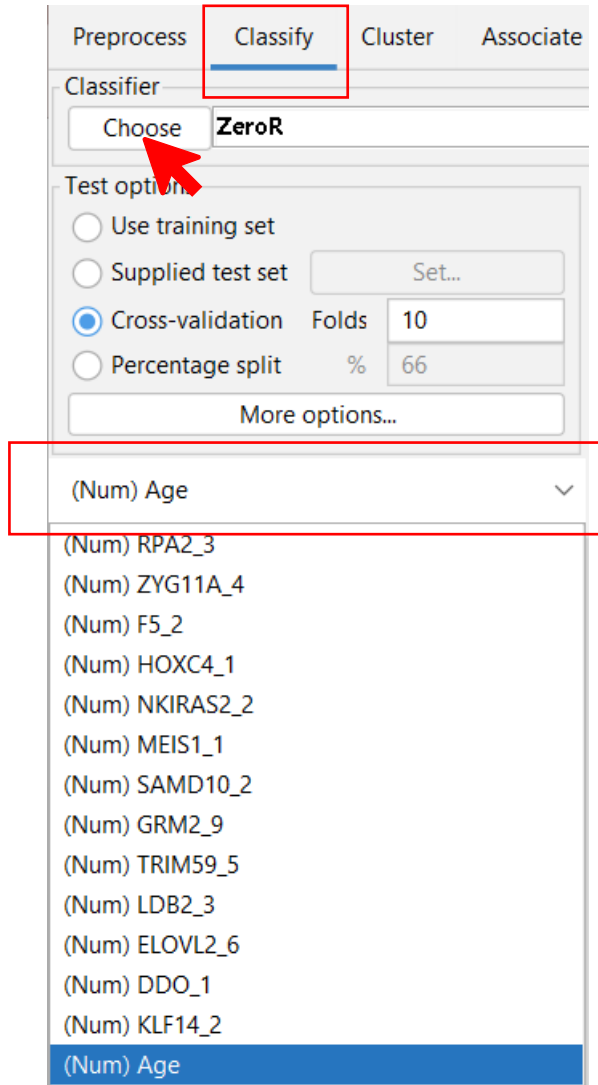
| | |
|---------|-------|
| Minimum | 43.78 |
| Maximum | 83.19 |
| Mean | 63.09 |
| StdDev | 7.595 |

Viewer

Relation: Regression_train

| No. | 1: RPA2_3 Numeric | 2: ZYG11A_4 Numeric | 3: F5_2 Numeric | 4: HOXC4_1 Numeric | 5: NKIRAS2_2 Numeric | 6: MEIS1_1 Numeric | 7: SAMD10_2 Numeric | 8: GRM2_9 Numeric | 9: TRIM59_5 Numeric | 10: LDB2_3 Numeric | 11: ELOVL2_6 Numeric | 12: DDO_1 Numeric | 13: KLF14_2 Numeric | 14: Age Numeric |
|-----|----------------------|------------------------|--------------------|-----------------------|-------------------------|-----------------------|------------------------|----------------------|------------------------|-----------------------|-------------------------|----------------------|------------------------|---------------------------|
| 1 | 52.36 | 11.95 | 47.48 | 36.08 | 35.1 | 70.16 | 43.46 | 23.31 | 33.64 | 74.44 | 36.12 | 70.65 | 2.46 | 20.0 |
| 2 | 59.44 | 21.49 | 41.19 | 39.51 | 30.15 | 58.9 | 27.73 | 53.05 | 35.94 | 66.46 | 45.35 | 54.23 | 1.77 | 29.0 |
| 3 | 67.84 | 17.43 | 38.29 | 47.76 | 21.82 | 43.83 | 23.28 | 37.69 | 47.76 | 54.0 | 59.2 | 42.77 | 2.0 | 49.0 |
| 4 | 67.68 | 19.64 | 30.53 | 43.83 | 22.08 | 31.06 | 30.25 | 44.54 | 53.88 | 31.94 | 64.33 | 14.77 | 5.44 | 67.0 |
| 5 | 70.51 | 30.56 | 31.76 | 69.47 | 20.55 | 21.64 | 26.18 | 68.05 | 51.74 | 48.22 | 71.09 | 53.04 | 4.48 | 65.0 |
| 6 | 52.83 | 8.29 | 46.59 | 41.11 | 29.41 | 65.85 | 39.35 | 13.57 | 25.26 | 75.5 | 32.16 | 66.18 | 0.98 | 20.0 |
| 7 | 69.02 | 12.35 | 43.93 | 39.04 | 29.26 | 52.02 | 39.52 | 45.83 | 39.29 | 68.59 | 45.11 | 57.02 | 2.12 | 31.0 |
| 8 | 57.20 | 10.72 | 24.07 | 42.04 | 20.55 | 45.60 | 20.70 | 40.00 | 42.1 | 45.02 | 52.05 | 50.22 | 2.20 | 27.0 |

Choosing Algorithm



5-fold cross-validation

Classifier

Choose **LinearRegression** -S 0 -R 1.0E-8 -n

Test options

☐ Use training set

☐ Supplied test set Set...

☒ Cross-validation Folds **5**

☐ Percentage split % 66

More options...

(Num) Age

Start Stop

Result list (right-click for options)

=== Cross-validation ===


=== Summary ===

| | |
|-----------------------------|-----------|
| Correlation coefficient | 0.963 |
| Mean absolute error | 3.2693 |
| Root mean squared error | 4.051 |
| Relative absolute error | 25.0606 % |
| Root relative squared error | 26.9052 % |
| Total Number of Instances | 208 |

Model testing


Test options

☐ Use training set

☒ Supplied test set 

☐ Cross-validation Folds

☐ Percentage split %

(Num) Age 



Result list (right-click for options)

16:31:20 - functions.LinearRegression

Test Instances

Relation: None
Instances: None

Attributes: None
Sum of weights: None

Class  No class 

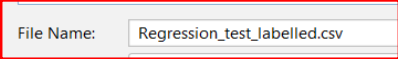
Open

Look In:


☒ Classification_test
☒ Classification_train
☒ Regression_test
☒ Regression_test_labelled
☒ Regression_train

☐ Invoke options dialog

WEKA

File Name: 


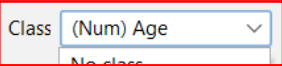
Files of Type:



Test Instances

Relation: Regression_test_labelled
Instances: ?

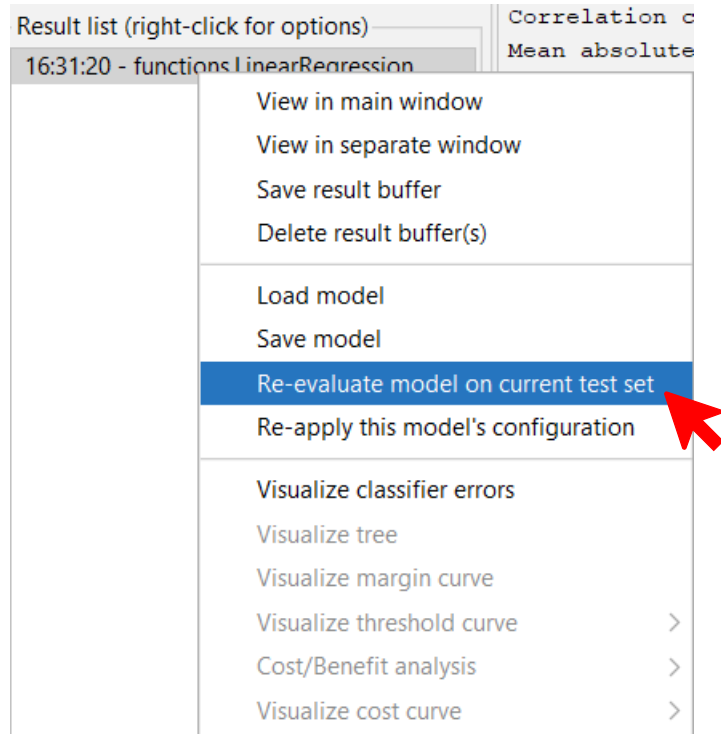
Attributes: 14
Sum of weights: ?

Class  (Num) Age 

No class
(Num) RPA2_3
(Num) ZYG11A_4
(Num) F5_2
(Num) HOXC4_1
(Num) NKIRAS2_2
(Num) MEIS1_1
(Num) SAMD10_2
(Num) GRM2_9
(Num) TRIM59_5
(Num) LDB2_3
(Num) ELOVL2_6
(Num) DDO_1
(Num) KLF14_2
(Num) Age

Test Performance

Right click on functions.LinearRegression



```
=== Re-evaluation on test set ===
```

```
User supplied test set
```

```
Relation:      Regression_test_labelled
```

```
Instances:     unknown (yet). Reading incrementally
```

```
Attributes:    14
```

```
=== Summary ===
```

```
Correlation coefficient      0.9611
```

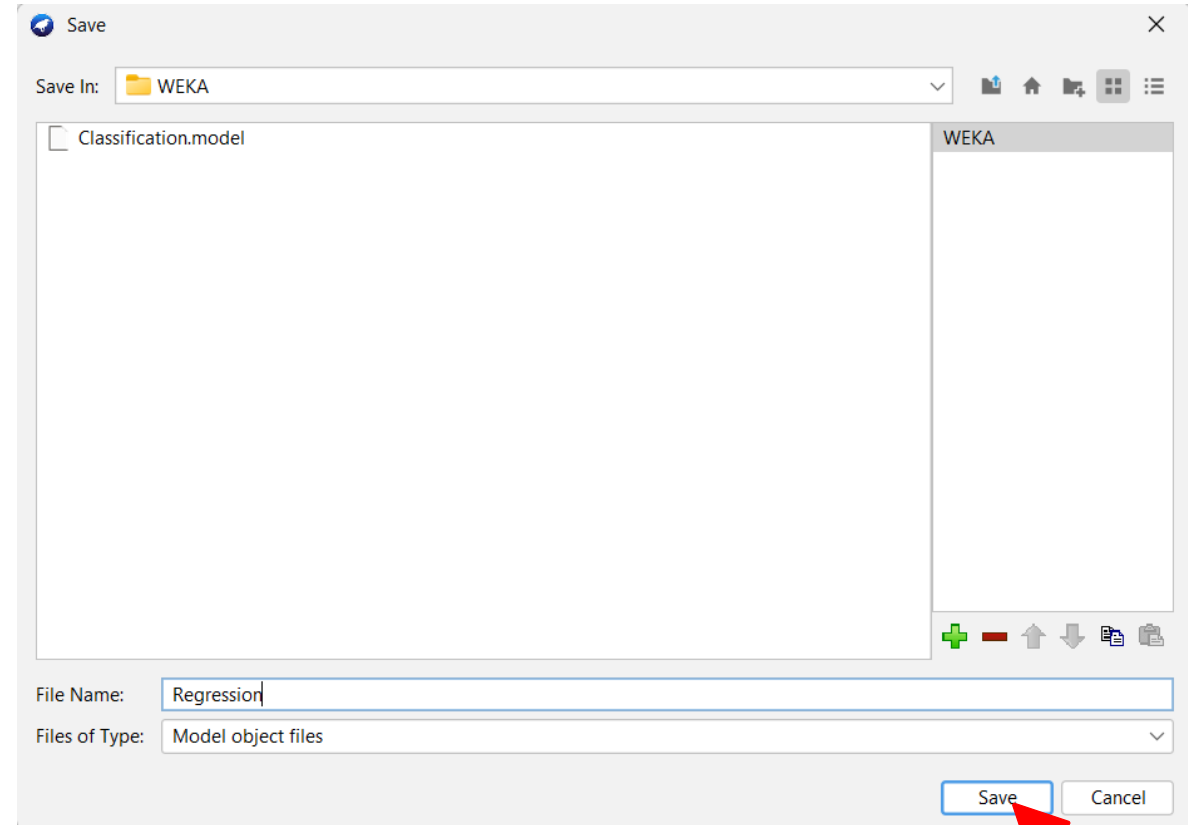
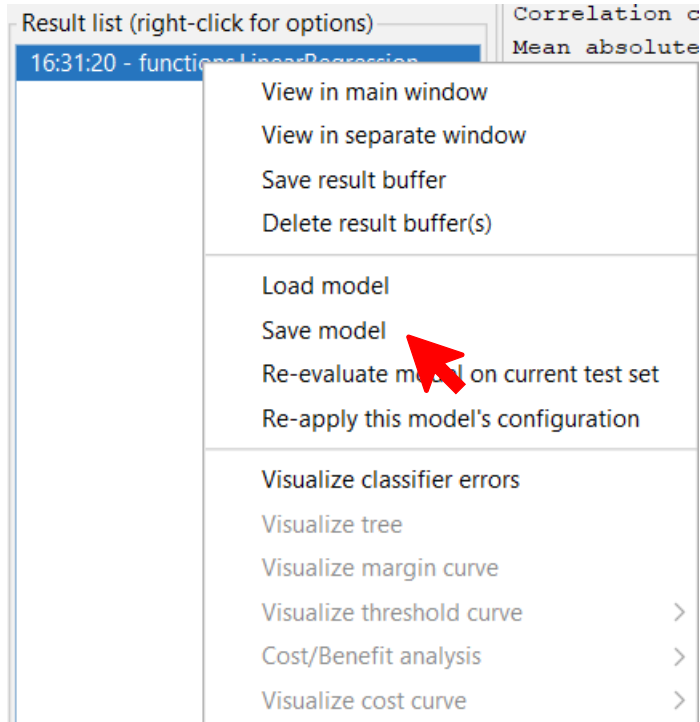
```
Mean absolute error         3.2766
```

```
Root mean squared error     4.1203
```

```
Total Number of Instances   104
```

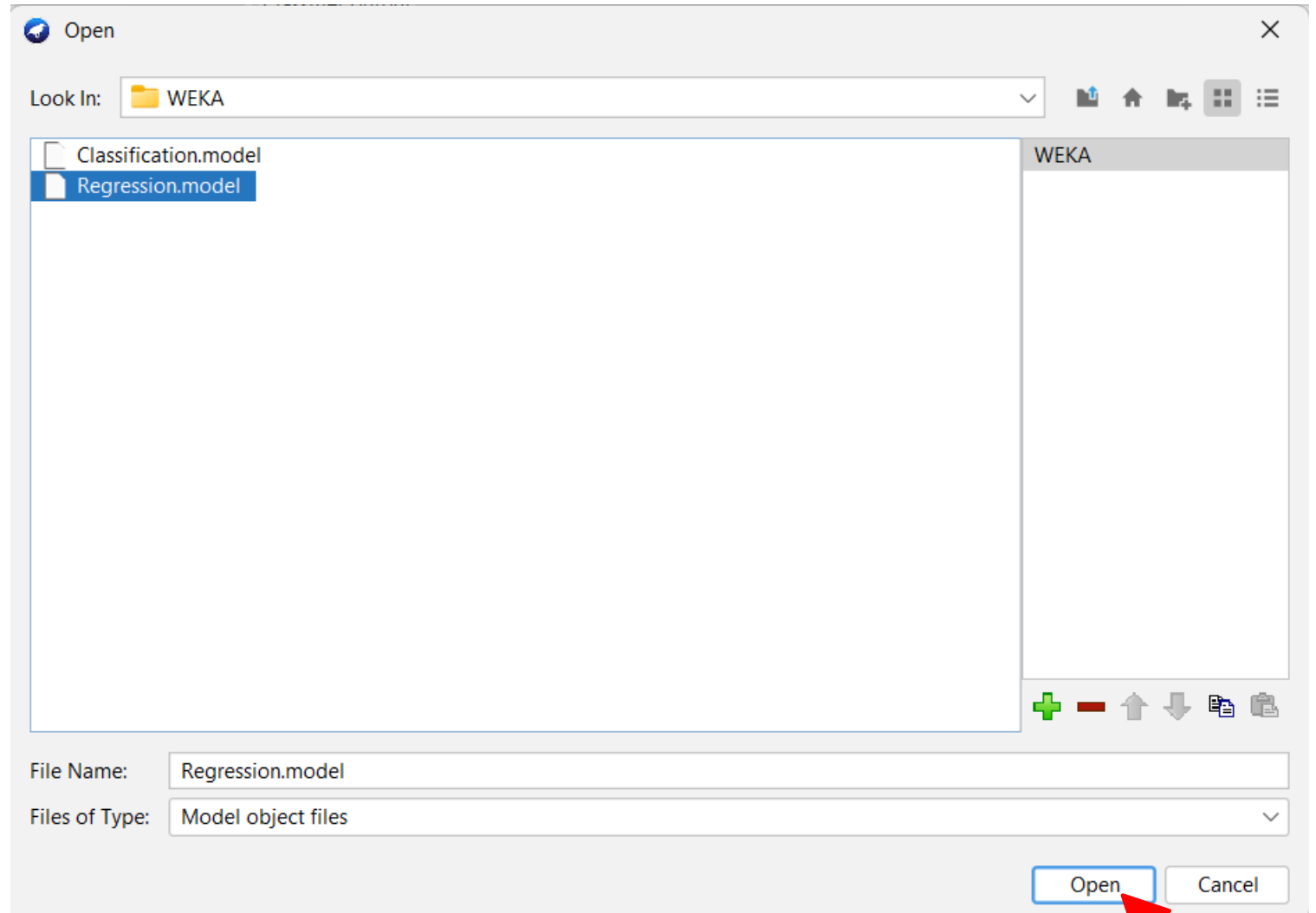
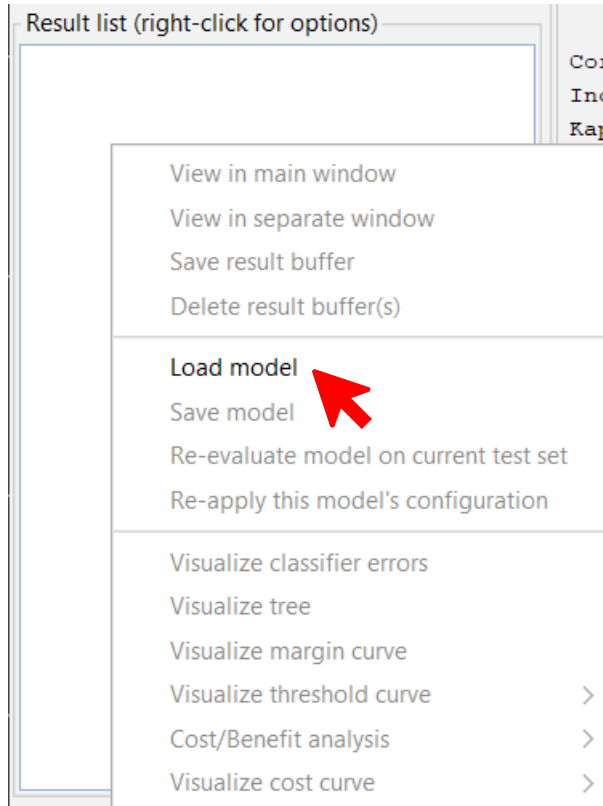

Saving Model

Right click on functions.LinearRegression

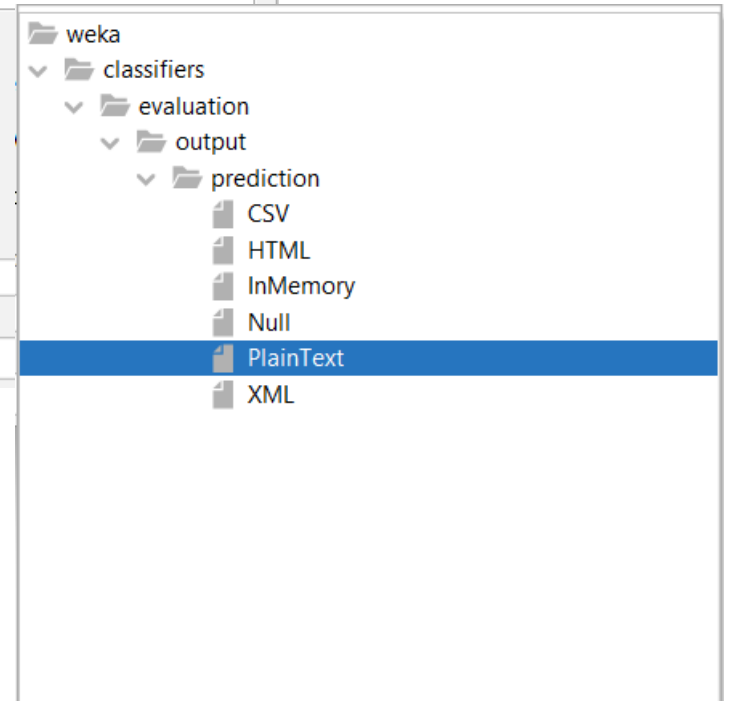
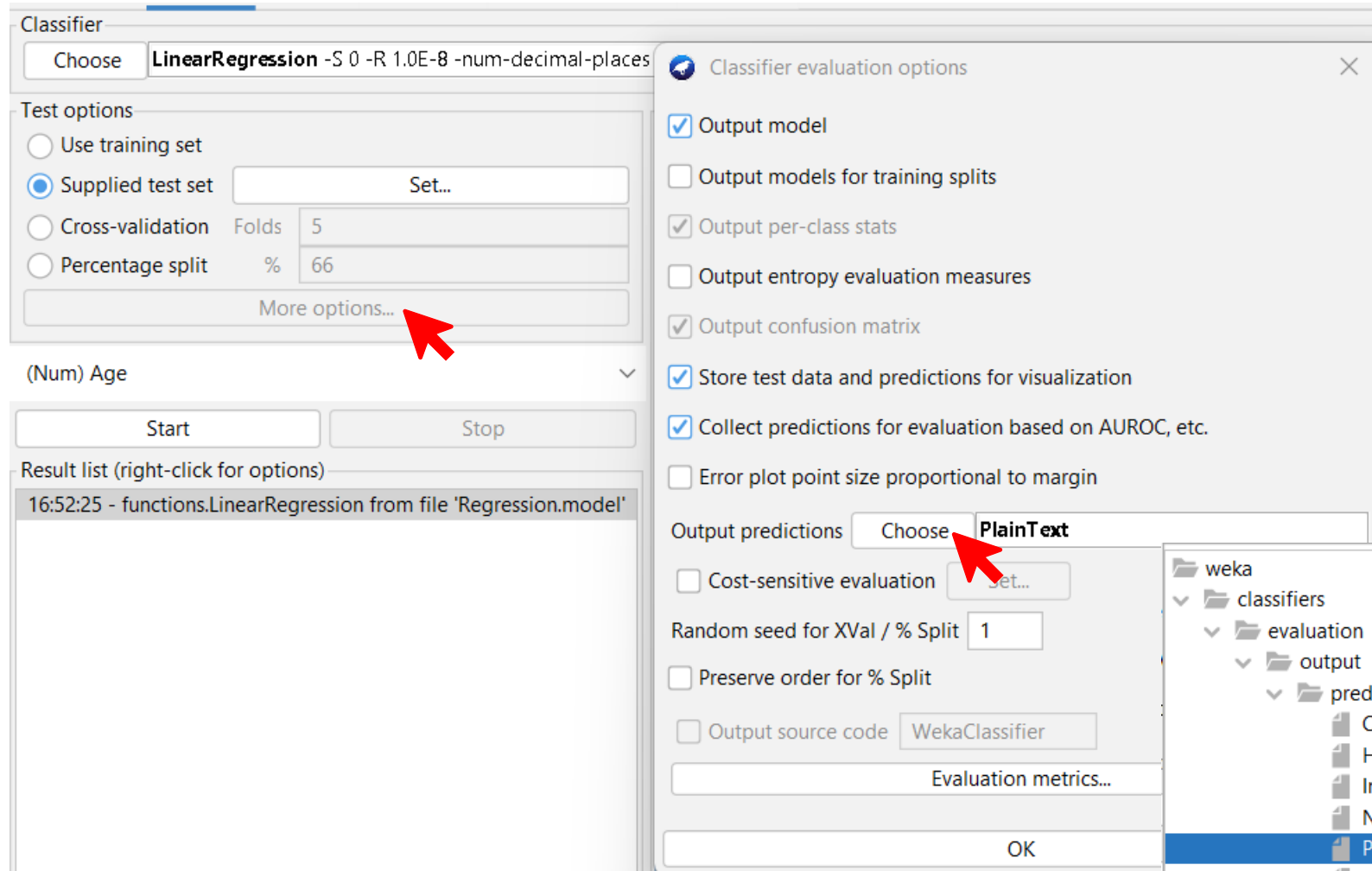


Loading Model

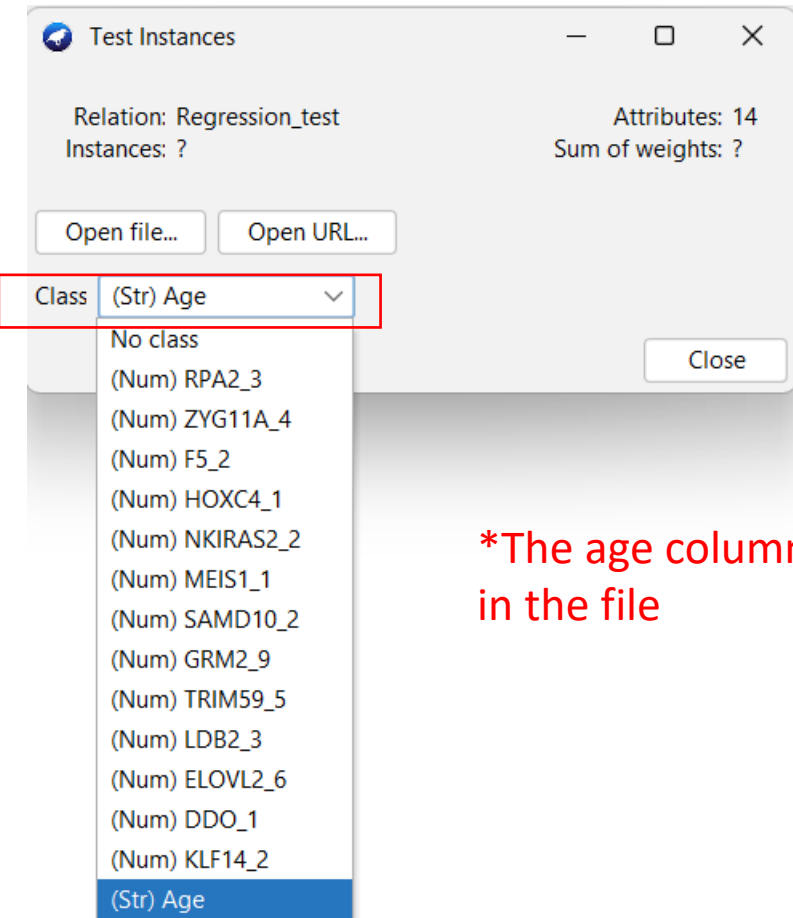
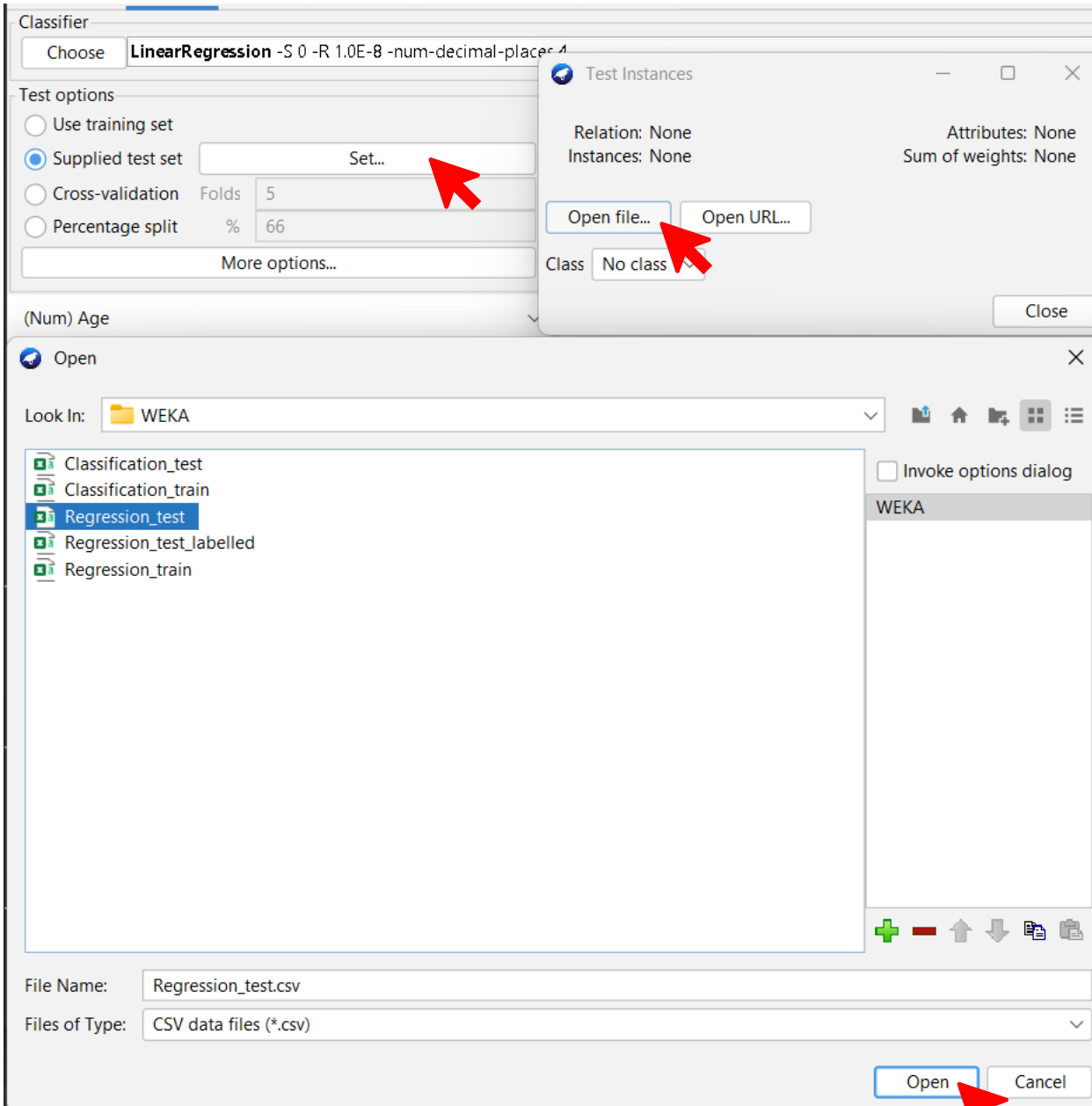
Right click



Prediction



Prediction



*The age column is empty in the file

Prediction output

Right click on functions.LinearRegression

Result list (right-click for options)

16:31:20 - functions.LinearRegression

- View in main window
- View in separate window
- Save result buffer
- Delete result buffer(s)
- Load model
- Save model
- Re-evaluate model on current test set
- Re-apply this model's configuration
- Visualize classifier errors
- Visualize tree
- Visualize margin curve
- Visualize threshold curve >
- Cost/Benefit analysis >
- Visualize cost curve >

ClassifierPanel

?

Data used to train model and test set are not compatible. Would you like to automatically wrap the classifier in an "InputMappedClassifier" before proceeding?.

☐ Do not show this message again

Yes No

=== Re-evaluation on test set ===

User supplied test set

Relation: Regression_test

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Predictions on user test set ===

| inst# | actual | predicted | error |
|-------|--------|-----------|-------|
| 1 | ? | 47.208 | ? |
| 2 | ? | 46.447 | ? |
| 3 | ? | 29.664 | ? |
| 4 | ? | 38.542 | ? |
| 5 | ? | 27.669 | ? |
| 6 | ? | 48.523 | ? |
| 7 | ? | 32.913 | ? |
| 8 | ? | 58.877 | ? |
| 9 | ? | 60.137 | ? |
| 10 | ? | 35.307 | ? |
| 11 | ? | 39.457 | ? |
| 12 | ? | 58.953 | ? |
| 13 | ? | 55.161 | ? |
| 14 | ? | 57.353 | ? |
| 15 | ? | 20.332 | ? |