Week 7 : Assignment 7

The due date for submitting this assignment has passed.

Due on 2024-09-11, 23:59 IST.

Assignment submitted on 2024-09-09, 10:54 IST

1) Which among the following is not a type of cross-validation technique? ***1 point***

- ○ LOOCV
- ○ k-fold croos validation
- ○ Validation set approach
- ◉ Bias variance trade off

Yes, the answer is correct.
Score: 1

Accepted Answers:
Bias variance trade off

2) Which among the following is a classification problem? ***1 point***

- ☐ Predicting the average rainfall in a given month.
- ☑ Predicting whether a patient is diagnosed with a disease or not.
- ☐ Predicting the price of a house.
- ☑ Predicting whether it will rain or not tomorrow.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Predicting whether a patient is diagnosed with a disease or not.
Predicting whether it will rain or not tomorrow.

Consider the following confusion matrix for the classication of Hatchback and SUV:

		True	
		Hatchback	SUV
Prediction	Hatchback	55	5
	SUV	0	40

3) Find the accuracy of the model. ***1 point***

- (●) 0.95
- ( ) 0.55
- ( ) 0.45
- ( ) 0.88

Yes, the answer is correct.
Score: 1

Accepted Answers:
0.95

4) Find the sensitivity of the model. ***1 point***

- ( ) 0.95
- ( ) 0.55
- (●) 1
- ( ) 0.88

Yes, the answer is correct.
Score: 1

Accepted Answers:
1

5) Under the 'family' parameter of glm() function, which one of the following distributions correspond to logistic regression for a variable with binary output? ***1 point***

- (●) Binomial
- ( ) Gaussian
- ( ) Gamma
- ( ) Poisson

Yes, the answer is correct.
Score: 1

Accepted Answers:
Binomial

Use the following information to answer Q6, Q7, Q8, Q9, and Q10:

Load the dataset **iris.csv** (https://drive.google.com/file/d/1SqGPxYa8xCDbC5ZsLN0tCzUceoVmR_6e/view?usp=sharing) as a dataframe irisdata, with the first column as index headers, first row as column headers, dependent variable as factor variable, and answer the following questions.

The iris dataset contains four Sepal and Petal features (Sepal Length, Sepal Width, Petal Length, Petal Width, all in cm) of 50 equal samples of 3 different species of the iris flower (Setosa, Versicolor, and Virginica).

6) What is the dimension of the dataframe? ***1 point***

- (150, 5)
- (150, 4)
- (50, 5)
- None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
(150, 5)

7) What can you comment on the distribution of the independent variables in the dataframe? ***1 point***

- The variables Sepal Length and Sepal Width are not normally distributed
- All the variables are normally distributed
- The variable Petal Length alone is normally distributed
- None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
All the variables are normally distributed

8) How many rows in the dataset contain missing values? ***1 point***

- 10
- 5
- 25
- 0

Yes, the answer is correct.
Score: 1
Accepted Answers:
0

9) Which of the following code blocks can be used to summarize the data (finding the mean of the columns PetalLength and PetalWidth), similar to the one given below. ***1 point***

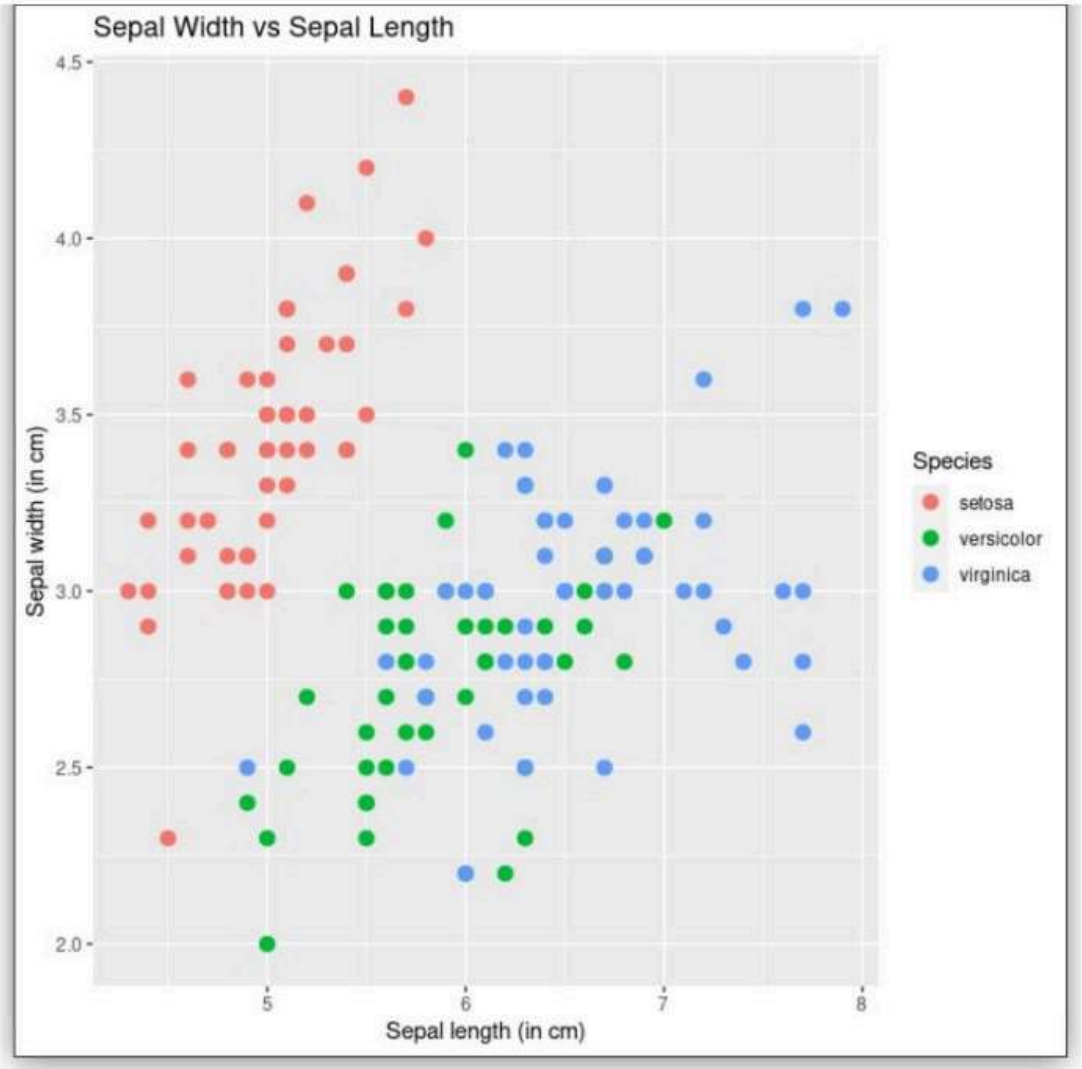
```
PetalLength  PetalWidth
   3.758000    1.199333
```

- lapply(irisdata[, 3:4], mean)
- sapply(irisdata[, 3:4], 2, mean)
- apply(irisdata[, 3:4], 2, mean)
- apply(irisdata[, 3:4], 1, mean)

Yes, the answer is correct.
Score: 1

Accepted Answers:
lapply(irisdata[, 3:4], mean)
apply(irisdata[, 3:4], 2, mean)

10) What can be interpreted from the plot shown below? ***1 point***



- [ ] Sepal widths of Versicolor flowers are lesser than 3 cm.
- [x] Sepal lengths of Setosa flowers are lesser than 6 cm.
- [ ] Sepal lengths of Virginica flowers are greater than 6 cm.
- [x] Sepals of Setosa flowers are relatively more wider than Versicolor flowers.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Sepal lengths of Setosa flowers are lesser than 6 cm.
Sepals of Setosa flowers are relatively more wider than Versicolor flowers.