전산물리학 기말고사

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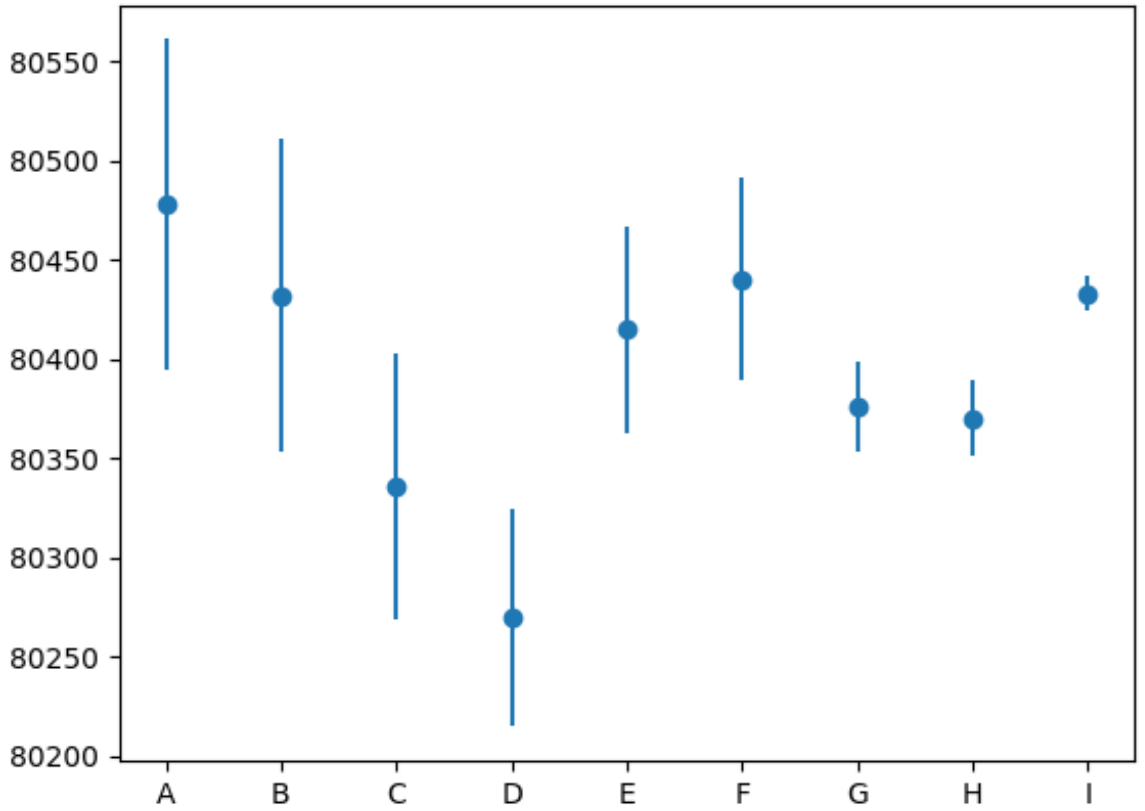
이선민

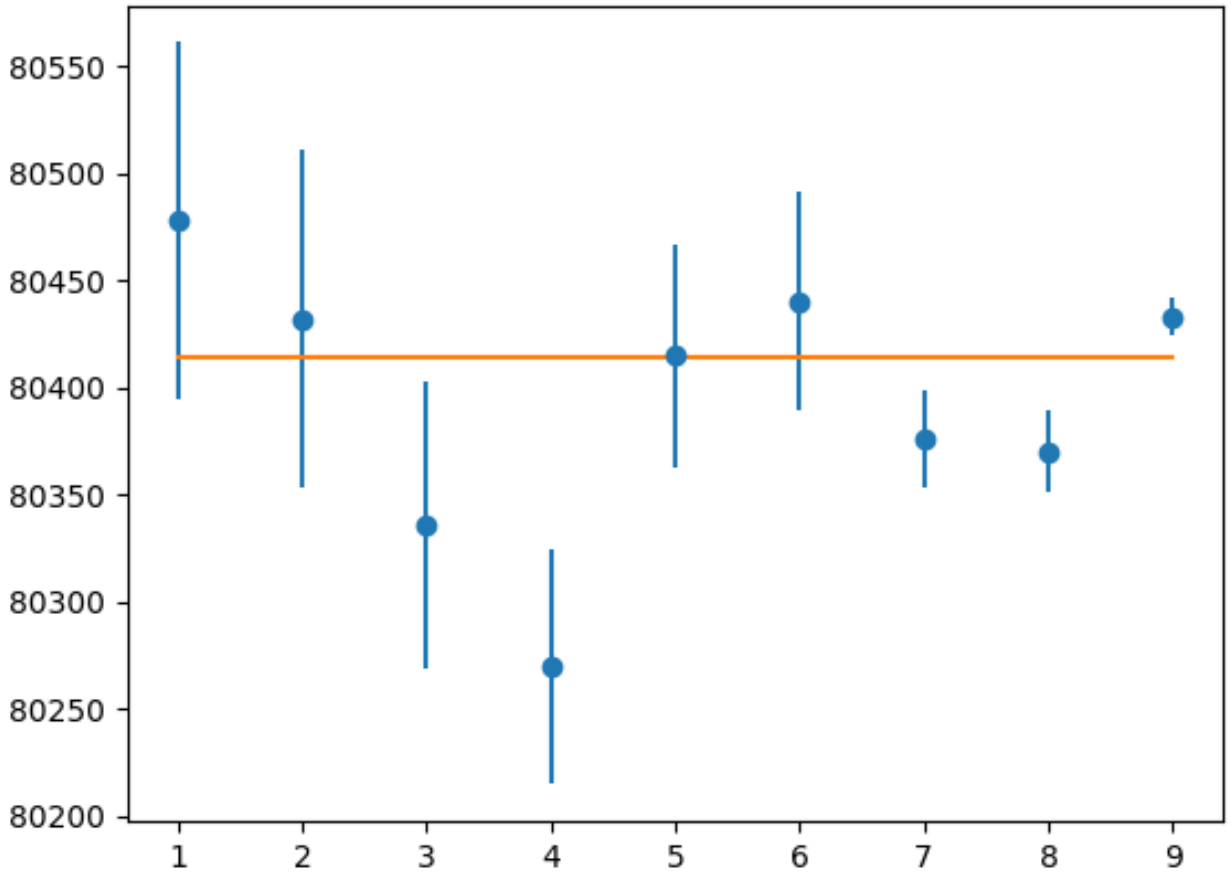
문제 1-1



문제 1-2

- raw counts: [940152, 1036581, 1437708, 2130007, 2391483, 2487733, 12212289, 17892900, 79869969]

문제 1-3



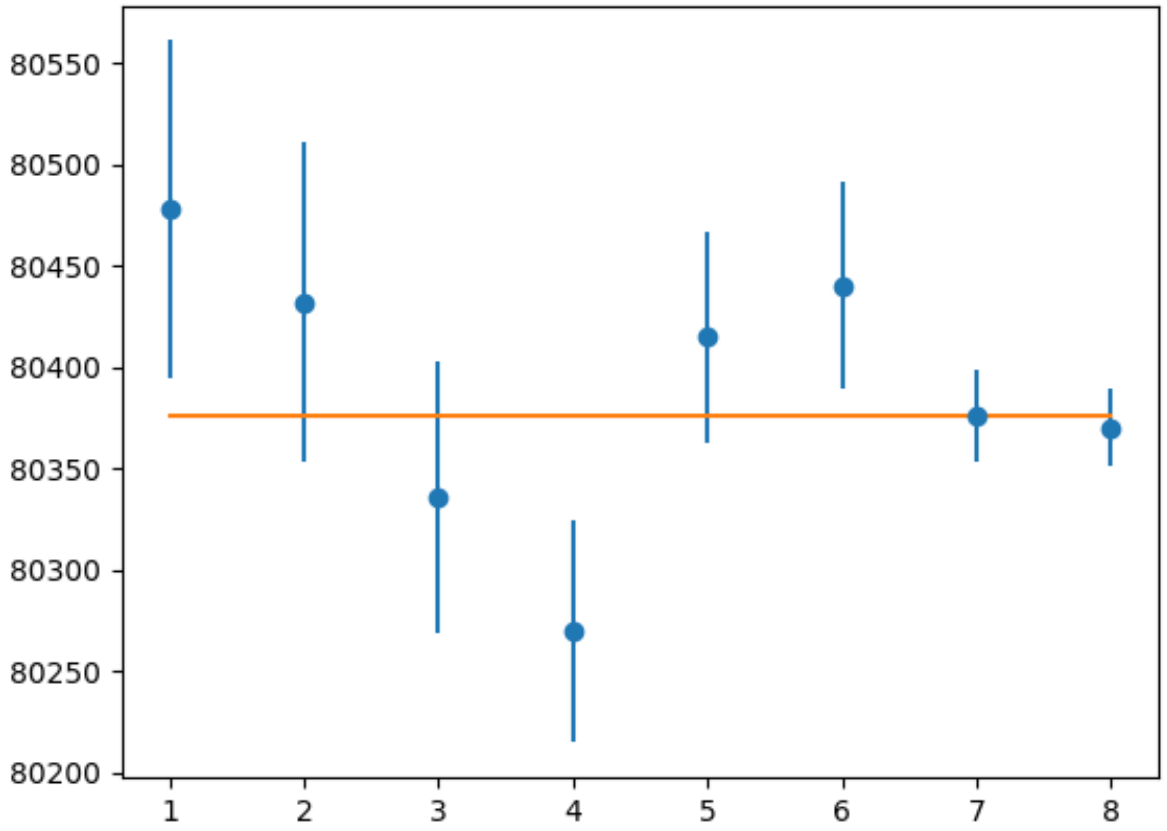
문제 1-4

- P-value = (0.005573665076474262, 9.44470427460916 8e-09)
- Error = [7.32858479]
- Chisquare = 21.666158868075645

문제 1-5

- P-value = (0.005573665076474262, 9.447047274609168e-09)
- Since the p value is less than or equal to 0.05, the result of fitting with a constant model is not valid for describing the data.

문제 1-7



P-value = (0.305248908801085, 1.0915714800716985e-09)
Error = [12.62543013]
Chisquare = 8.31972948911153

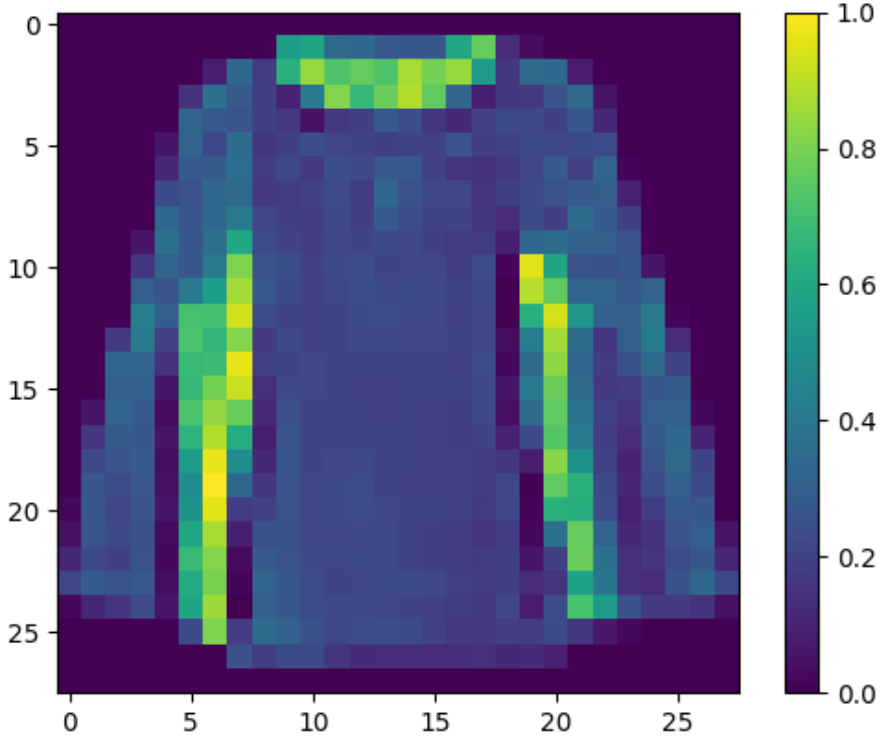
문제 1-8

- If the last value is subtracted and fitted, the p value is more than 0.05, indicating that it is more effective to explain the data.
- Since the p value is 0.3, the probability that the chi square value is greater than 8.3197 is 3/10. Therefore, this is a better model than the previous model.

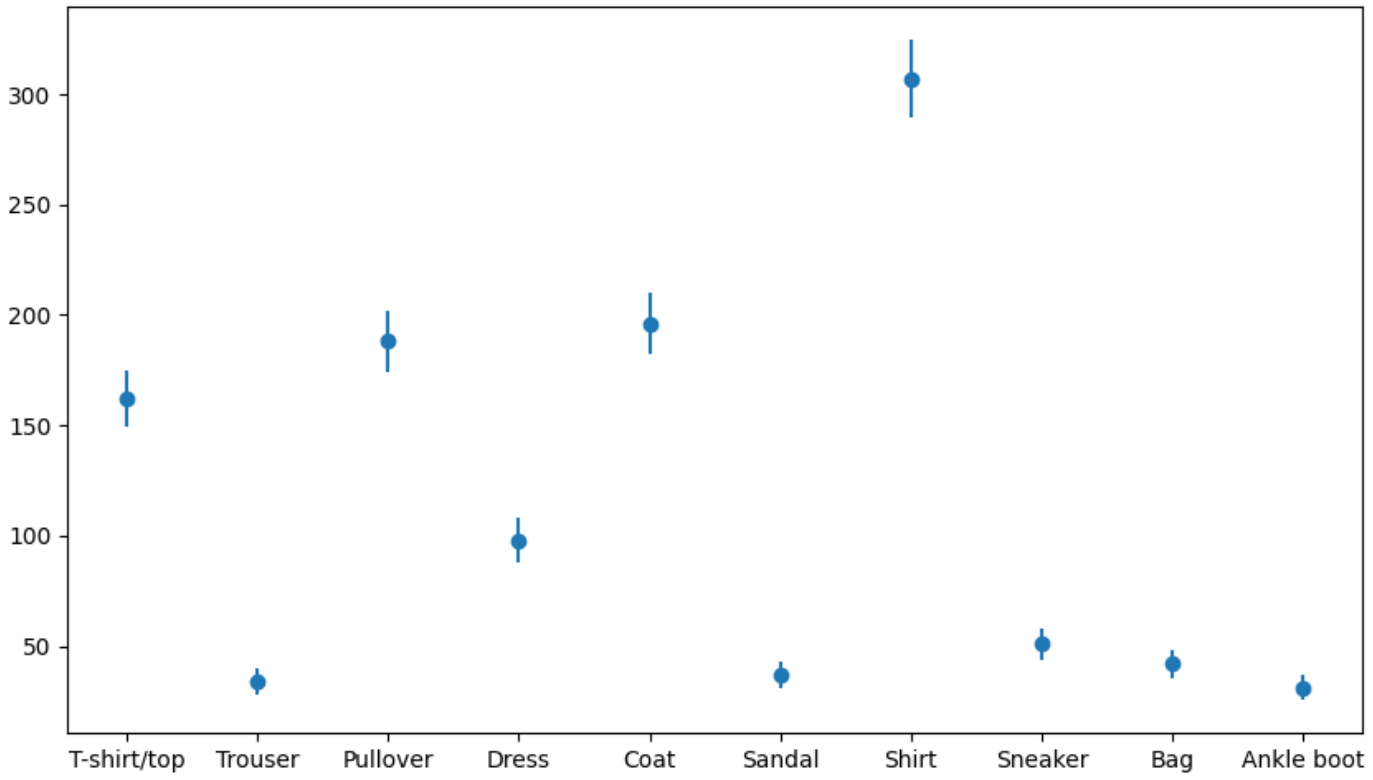
문제 2- 1,2

I use DNN algorithm to train the MNIST fashion data.

Test accuracy: 0.8821000456809998



문제 2-3


300
250
200
150
100
50
T-shirt/top
Trouser
Pullover
Dress
Coat
Sandal
Shirt
Sneaker
Bag
Ankle boot

문제 2-4

- Shirt classes are classified incorrectly compared to other classes.
- The reason is probably that there are many incorrectly classified because it is not well distinguished from top clothes such as dress or T-shirt.
- Based on the data provided, the algorithm worked best in the three classes, Ankleboot, Trouser, and Sandal, and worst in the shirt class.