

ITEC3040A, S2021 *Assignment Two*

Due:16th July, Before Class

1. **(10 marks)** Use MatLAB to implement a KNN classifier. For $K=3$, use the classifier to determine¹

$\langle Outlook_{Rain}, Temperature_{Hot}, Humidity_{High}, Wind_{Weak}, PlayTennis = ? \rangle$

2. **(20 marks)** Progress of world record times in seconds for the 10k run for man (from 50s to 90s of 20th century) is shown in the following table.

X (year)	56	60	65	73	78	84	89	95	98
Y (time)	1773	1699	1660	1651	1642	1634	1628	1603	1583

- (a) **(5 marks)** Calculate the least squares regression line from the data.
- (b) **(5 marks)** Calculate the correlation “r” of the data.
- (c) **(10 marks)** Use MatLAB to make a scatter-plot of the data.

What to submit

- 1) **A PDF file, containing pages exactly in the following order,**

- (Page One) A cover page with print-out of
 - Your Name/ID, and
 - The statement: *I have read and understood the Academic Honesty Statement specified in the course outline, and I have adhered fully at all time to the academic honesty rules and policies laid by the instructor, the School of Information Technology and York University Senate’s Academic Integrity Policy.*
- For Question 1:
 - MatLAB Source code (print out).
 - Specific output for the instance given to the code as input.
- Answer to Question 2 a-b).
- For Question 2-c):
 - MatLAB Source code (print out).
 - the plot.

- 2) **A zipped file containing the MatLAB source code. When necessary, your source code would be tested for correctness/executabilities.**

¹Same training examples from Assignment One “PlayTennis” is used here.