FUTURE UNIVERSITY IN EGYPT
FACULTY OF COMPUTERS AND INFORMATION TECHNOLOGY

Course Name: Artificial Intelligence
Course Code: [redacted]

AI Project

[redacted]

Machine learning (ML):

a. *Dataset*
You need to download the "Breast Cancer Dataset" to be trained on the supervised and the unsupervised techniques. You also should apply a preprocessing technique like "scaling" on the dataset before feeding it to the supervised or the unsupervised models.

b. *Supervised Implementation*
Implement a supervised ML algorithm using Multiple Linear Regression. A cross-validation technique must be implemented in each model. You must run each model a different number of times by using the cross validation mentioned before, at least k = 3.

c. *Unsupervised Implementation*
Implement a k-means model.

d. *Performance Measurements*
For supervised models, you should measure your model's performance based on accuracy, loss, precision, recall, roc (auc), confusion matrix, and f-score.
For unsupervised models, you should measure your model's performance based on Sum of Squared Errors and Silhouette Coefficient.

2. General step must be taken into consideration for all models:

FUTURE UNIVERSITY IN EGYPT
FACULTY OF COMPUTERS AND INFORMATION TECHNOLOGY

Course Name: Artificial Intelligence
Course Code: [redacted]

AI Project

- Research

  Your research must be prepared and contains the following:
  - A description for all techniques and steps in each section.
  - A comparison table that contains all the results from each model.
  - You must add a chart that represents the results for each model as shown in the following example figure.