Assignment Code: D-AG-008

Supervised Learning: Regression Models and Performance Metrics | **Solution**

Instructions: Carefully read each question. Use Google Docs, Microsoft Word, or a similar tool to create a document where you type out each question along with its answer. Save the document as a PDF, and then upload it to the LMS. Please do not zip or archive the files before uploading them. Each question carries 20 marks.

Total Marks: 200

Question 1 : What is Simple Linear Regression (SLR)? Explain its purpose.

Answer:

Question 2: What are the key assumptions of Simple Linear Regression?

Answer:

Question 3: Write the mathematical equation for a simple linear regression model and explain each term.

Answer:

Question 4: Provide a real-world example where simple linear regression can be applied.

Answer:

Question 5: What is the method of least squares in linear regression?

Answer:

Question 6: What is Logistic Regression? How does it differ from Linear Regression?

Answer:

Question 7: Name and briefly describe three common evaluation metrics for regression models.

Answer:

Question 8: What is the purpose of the R-squared metric in regression analysis?

Answer:

Question 9: Write Python code to fit a simple linear regression model using scikit-learn and print the slope and intercept.
(Include your Python code and output in the code box below.)

Answer:

Question 10: How do you interpret the coefficients in a simple linear regression model?

Answer: