

# Research Assignment #2

## Hope to Skills

### Free Artificial Intelligence Advance Course

Instructor: Irfan Malik, Dr. Sheraz

#### Submission:

- Submit a **.pdf** file detailing all the information. No other format will be accepted
- Submission file should be named as **Research\_Assignment\_02StudentName.pdf**
- Deadline for this Assignment is **Friday 22-03-2024**.
- Strictly follow the submission deadline.
- Make Submission in the **Research Assignment 2** Google Form and press the submit button.
- Click [here](#) to submit the Assignment

#### Solve the Following Task

**Question 1:** Define Data Science. Explain important key points of data science. **(20 Marks)**

**Question 2:** What are the different types of Data? Provide real-world examples of each type of data. Structured, Unstructured, and Semi-structured data differ in terms of organization and analysis methods? **(20 Marks)**

**Question 3:** What is the importance of EDA in data? **(20 Marks)**

- Central Tendency (explore and define it)
- Dispersion (explore and define it)
- Proximity (explore and define it)

**Question 4:** What are the core points of Data Pre-Processing? and why it is necessary to Pre-Process data before model training. **(20 Marks)**

**Question 5:** Observe the attributes of the titanic dataset and mention some of the most important attributes. Mention your reason why they are important. **(20 Marks)**

Which attributes are not important and why?

Write some initial observations about the data. Is it a cleaned dataset? If not, then which EDA steps need to be performed to make it clean.

Mention the target variables.

Specify whether the problem is classification or regression?

**Dataset:** [Titanic Dataset](#)

**Notes for Students:**

- Each question is of 20 marks.
- Try to use the images for visual explanations.
- Your answers should demonstrate a thorough understanding of each topic.
- Any other file format except “**.pdf**” will not be accepted and will result in 0 marks.
- The submissions after the deadline will not be considered.