

# Pre-Internship Assignment Pack – Data Science Track

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## 1. Overview

This document provides a full set of engaging and preparatory assignments for students joining the Data Science internship program.

It includes aptitude tests, reasoning problems, fun activities, and dataset suggestions to build a strong foundational mindset.

## 2. Pre-Internship Aptitude & Logic Assignment

Topics Covered:

- Aptitude (Quantitative Ability)
- Logical Reasoning
- Basic Programming Logic (Pseudocode-based)
- Data Interpretation

Aptitude Questions:

Q1. A train 360 m long is running at 45 km/h. In what time will it pass a bridge 140 m long?

Ans:40 seconds

Q2. The ratio of ages of two persons is 4:5 and their sum is 72. What are their ages?

Ans:32 and 40 years

Q3. A shopkeeper buys 80 articles for ₹2400 and sells them at 16% profit. What is the selling price of one article?

Ans:35

Logical Reasoning Questions:

Q1. Find the next number in the sequence: 2, 6, 12, 20, ?

Ans:30

Q2. If 'MANGO' is written as 'NZOHF', how is 'APPLE' written?

Ans:BOQMF

Q3. Statements: All engineers are hardworking. Some hardworking people are teachers.  
Conclusions?

Ans: both engineers and teachers are hardworking.

Programming Logic:

Q1. Write pseudocode to calculate factorial of a number.

Ans:

Start

Input number n

If  $n < 0$  Then

Print "Factorial is not defined for negative numbers"

Else

Set result = 1

For i = 1 to n

result = result  $\times$  i

End For

Print "Factorial of", n, "is", result

End If

End

Q2. Write pseudocode to print even numbers from 1 to 20.

Ans:

Start

For number = 1 to 20

```
If number mod 2 == 0 Then  
    Print number  
End If  
End For  
End
```

Q3. Trace logic to sum even numbers between 1 and 5.

Ans:Start

```
Set sum = 0  
For i = 1 to 5  
    If i modulus 2 == 0 Then  
        sum = sum + i  
    End If  
End For  
Print "Sum of even numbers is", sum  
End
```

Data Interpretation:

Table with student enrollments from 2020–2023 in AI, ML, DS.

- Calculate total DS students
- Find highest growth course
- Average AI enrollment

### 3. Engaging Assignments

#### 1. Mini Data Hunt

Explore datasets like Titanic or IPL stats. Find youngest person, most frequent category, highest value.

## 2. Meme Logic Challenge

Analyze funny logic memes. Identify what's wrong, and suggest corrections.

## 3. Dataset Storytelling

Use a dataset to create a 150-word news-style story. Merge facts and narrative.

## 4. Pair Programming Logic Puzzle

Partner up to solve basic logic tasks like printing primes, finding second-largest number, etc.

## 5. Chart the Weird Challenge

Use weird/fun datasets (UFOs, baby names). Create chart + caption.

## 4. Suggested Public Datasets

1. Titanic Dataset – Survival analysis dataset.
2. Netflix Movies & TV Shows – Great for content trends.
3. IPL Match Data – Match scores and player stats.
4. UFO Sightings – Good for 'Chart the Weird'.
5. Baby Names – Trend analysis over decades.
6. Reddit/Twitter Sentiment – Social sentiment for meme challenges.
7. World Bank Indicators – Use for storytelling.
8. UCI ML Repository – Use for logic-based or supervised learning.

Explore these datasets from sources such as Kaggle, Data.gov, or UCI ML Repository.