Day 23

DIY

Q1. Problem Statement: Statistical Hypothesis Testing

A company claims that its employees earn approximately 5LPA on average. A random sample of 50 employees was taken, and it turned out to have a mean of 2 LPA. Perform hypothesis testing for the given claim having a population mean of 5 LPA with a standard deviation of 3.

H0:u (Null hypothesis) = Employees are earning on an average around 5LPA

H1:u (Alternate hypothesis) = Employees are not earning 5LPA on an average

Sample Input:

```
total_mean = 5
sample_mean = 2
standard_deviation = 3
sample_size = 50
```

Sample Output:

```
we are rejecting null hypothesis and accepting alternate hypothesis
```

Q2. Problem Statement: Statistical Hypothesis Testing

A Tyre manufacturing company claims that their original Tyres run for about 50,000 km before replacing them. A random sample of 100 tyres was taken, and it turned out that the average life of the sample was about 48,000 Km. To find out whether the company said the truth or lie, based on standard deviations as 1500.

H0:u = Tyres run for about 50,000 km before having to replace them (Null hypothesis)

H1: u = Tyres can't run for about 50,000 km before having to replace them(Alternate hypothesis)

Sample Input:

```
total_mean = 50000
sample_mean = 48000
standard_deviation = 1500
sample_size = 100
```

Sample Output:

```
we are rejecting null hypothesis and accepting alternate hypothesis
```