

**Q5. 5. In January 2005, a company that monitors Internet traffic (WebSideStory) reported that its sampling revealed that the Mozilla Firefox browser launched in 2004 had grabbed a 4.6% share of the market.**

- I. If the sample were based on 2,000 users, could Microsoft conclude that Mozilla has a less than 5% share of the market?
- II. WebSideStory claims that its sample includes all the daily Internet users. If that's the case, then can Microsoft conclude that Mozilla has a less than 5% share of the market?

**I. If the sample were based on 2,000 users, could Microsoft conclude that Mozilla has a less than 5% share of the market?**

In [1]:

```
import numpy as np
from scipy import stats
from scipy.stats import norm
```

In [2]:

```
# Apply One-Sample One-Tail z-test
z_scores=(0.046-0.05)/(np.sqrt((0.05*(1-0.05))/2000))
z_scores
```

Out[2]:

-0.820782681668124

In [3]:

```
# Find Probability assuming null hyposthesis, so as significance level is 5% i.e alpha = 0.
p_value=1-stats.norm.cdf(abs(z_scores))
p_value
```

Out[3]:

0.20588503245107104

In [6]:

```
if p_value > 0.05:
    print("Reject the Null Hypothesis")
```

Reject the Null Hypothesis

**If the sample were based on 2,000 users, could Microsoft conclude that Mozilla has a less than 5% share of the market?**

**Answer: NO. We conclude that Mozilla has more than or equal to 5% share of the market.**

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**II. WebSideStory claims that its sample includes all the daily Internet users. If that's the case, then can Microsoft conclude that Mozilla has a less than 5% share of the market?**

**Answer:**

We are given that WebSideStory claims that its sample includes all the daily Internet users. This means that the 4.6% share of the market represents the whole population.

Hence, we can conclude that Mozilla has a less than 5% share of the market.

In [ ]: