In [1]:
```
#Experiment No.5
```

In [2]:
```
# Aim:To perform and analysis of Z Test parametric Test.

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#Subject:ET-II
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```

In [3]:
```
ages=[10,20,35,50,28,40,55,18,16,55,30,25,43,18,30,28,14,24,16,17,32,35,26,27,65,18,43,23,21,20,19,70]
```

In [4]:
```
len(ages)
```

Out[4]:
```
32
```

In [5]:
```
import numpy as np
```

In [6]:
```
ages_mean=np.mean(ages)
print(ages_mean)
```

```
30.34375
```

In [7]:
```
## Lets take sample

sample_size=31
age_sample=np.random.choice(ages,sample_size)
```

In [8]:
```
age_sample
```

Out[8]:
```
array([65, 25, 18, 35, 28, 43, 32, 18, 70, 24, 70, 27, 40, 20, 16, 50, 18,
       50, 20, 50, 25, 35, 14, 28, 65, 17, 40, 43, 26, 16, 21])
```

In [9]:
```
from statsmodels.stats import weightstats as stests
```

In [10]:
```
# Perform one-sample z-test
ztest, p_value = stests.ztest(age_sample)
```

In [11]:
```
# Print the results
print("ztest", ztest)
print("P-value:", p_value)
```

```
ztest 11.105660136420541
P-value: 1.1774404743634912e-28
```

In [12]:
```
if p_value < 0.05:    # alpha value is 0.05 or 5%    (Level of significance)
    print(" we are rejecting null hypothesis")
else:
    print("we are accepting null hypothesis")
```

```
 we are rejecting null hypothesis
```

In [ ]:
```

```