/*Practical No : 04,
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Prediction hypothesis using chi-square

```
import pandas as pd
from scipy.stats import chi2_contingency

# Sample data: replace with your own data
data = [[10, 20, 30],   # First row of observed values
        [15, 25, 35],   # Second row of observed values
        [20, 30, 40]]   # Third row of observed values

# Create a DataFrame
df = pd.DataFrame(data, columns=["Category A", "Category B", "Category C"])

# Perform Chi-Square test
chi2, p, dof, expected = chi2_contingency(df)

# Display results
print("Chi-Square Statistic:", chi2)
print("p-value:", p)
print("Degrees of Freedom:", dof)
print("Expected Frequencies:\n", expected)

# Conclusion based on p-value
alpha = 0.05
if p < alpha:
    print("Reject the null hypothesis (variables are related).")
else:
    print("Fail to reject the null hypothesis (variables are independent).")
```

OUTPUT :

```
Chi-Square Statistic: 0.7936507936507936
p-value: 0.9392972321151757
Degrees of Freedom: 4
Expected Frequencies:
 [[12. 20. 28.]
 [15. 25. 35.]
 [18. 30. 42.]]
Fail to reject the null hypothesis (variables are independent).
```