```
pip install word2number
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting word2number
  Downloading word2number-1.1.zip (9.7 kB)
  Preparing metadata (setup.py) ... done
Building wheels for collected packages: word2number
  Building wheel for word2number (setup.py) ... done
  Created wheel for word2number: filename=word2number-1.1-py3-none-any.whl size=5582 sha256=efc5a1a6785f06d75411e6c81e51191dff5f7fe473d5052eda80697a4
  Stored in directory: /root/.cache/pip/wheels/a0/4a/5b/d2f2df5c344ddbecb8bea759872c207ea91d93f57fb54e816e
Successfully built word2number
Installing collected packages: word2number
Successfully installed word2number-1.1
```

```
import pandas as pd
import numpy as np
from sklearn import linear_model
from word2number import w2n
import math
```

```
df= pd.read_csv("https://raw.githubusercontent.com/Rhevathi/DATA-SCIENCE/master/ML/2_linear_reg_multivariate/Exercise/hiring.csv")
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 8 entries, 0 to 7
Data columns (total 4 columns):
 #   Column                      Non-Null Count  Dtype  
---  ------                      --------------  -----  
 0   experience                  6 non-null      object 
 1   test_score(out of 10)       7 non-null      float64
 2   interview_score(out of 10)  8 non-null      int64  
 3   salary($)                   8 non-null      int64  
dtypes: float64(1), int64(2), object(1)
memory usage: 384.0+ bytes
```

```
df.isnull().sum()
```

```
experience                  2
test_score(out of 10)       1
interview_score(out of 10)  0
salary($)                   0
dtype: int64
```

```
df.experience = df.experience.fillna('zero')
df
```

	experience	test_score(out of 10)	interview_score(out of 10)	salary($)
0	zero	8.0	9	50000
1	zero	8.0	6	45000
2	five	6.0	7	60000
3	two	10.0	10	65000
4	seven	9.0	6	70000
5	three	7.0	10	62000
6	ten	NaN	7	72000
7	eleven	7.0	8	80000

```
df.experience = df.experience.apply(w2n.word_to_num)
df
```

	experience	test_score(out of 10)	interview_score(out of 10)	salary($)
0	0	8.0	9	50000
1	0	8.0	6	45000
2	5	6.0	7	60000
3	2	10.0	10	65000
4	7	9.0	6	70000
5	3	7.0	10	62000
6	10	NaN	7	72000
7	11	7.0	8	80000

```
mean_test_score = math.floor(df['test_score(out of 10)'].mean())
mean_test_score
```

```
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```

```
df['test_score(out of 10)'] = df['test_score(out of 10)'].fillna(mean_test_score)
df
```

	experience	test_score(out of 10)	interview_score(out of 10)	salary($)
0	0	8.0	9	50000
1	0	8.0	6	45000
2	5	6.0	7	60000
3	2	10.0	10	65000
4	7	9.0	6	70000
5	3	7.0	10	62000
6	10	7.0	7	72000
7	11	7.0	8	80000

```
reg = linear_model.LinearRegression()
reg.fit(df[['experience', 'test_score(out of 10)', 'interview_score(out of 10)']], df['salary($)'])
```

```
LinearRegression()
```

```
reg.predict([[2, 9, 6]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
  warnings.warn(
array([53713.86677124])
```

```
reg.predict([[12, 10, 10]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
  warnings.warn(
array([93747.79628651])
```

```
import pickle


with open ('reg_pickle','wb') as f:
  pickle.dump(reg,f)


with open('reg_pickle','rb') as f:
  sreg=pickle.load(f)


sreg.predict([[2,9,6]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
  warnings.warn(
array([53713.86677124])
```

```
sreg.predict([[12,10,10]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
  warnings.warn(
array([93747.79628651])
```

```
import joblib


joblib.dump(reg,'reg_joblib')
```

```
['reg_joblib']
```

```
sj=joblib.load('reg_joblib')


sj.predict([[2,9,6]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
  warnings.warn(
array([53713.86677124])
```

```
sj.predict([[12,10,10]])
```

```
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with fe
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