In [1]:
```
# SVR

# Importing the libraries
import os
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

In [2]:
```
os.chdir("D:/My ML Simulations/My_ML_Work/Part 2 - Regression/Section 6 - Polynomial Regression")
```

In [3]:
```
# Importing the dataset
dataset = pd.read_csv('Position_Salaries.csv')
X = dataset.iloc[:, 1:2].values
y = dataset.iloc[:, 2].values
```

In [4]:
```
# Splitting the dataset into the Training set and Test set
"""from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.2, random_state = 0)"""
```

Out[4]:
```
'from sklearn.model_selection import train_test_split\nX_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.
2, random_state = 0)'
```

In [27]:
```
# Feature Scaling
from sklearn.preprocessing import StandardScaler
sc_X = StandardScaler()
sc_y = StandardScaler()
X = sc_X.fit_transform(X)
y = sc_y.fit_transform(y.reshape(-1,1))
```

In [28]:
```
# Fitting SVR to the dataset
from sklearn.svm import SVR
regressor = SVR(kernel = 'rbf')
regressor.fit(X, y)
```

```
C:\Users\nilesh\Anaconda3\lib\site-packages\sklearn\utils\validation.py:724: DataConversionWarning: A column-vector y was passed
when a 1d array was expected. Please change the shape of y to (n_samples, ), for example using ravel().
  y = column_or_1d(y, warn=True)
```

Out[28]:
```
SVR(C=1.0, cache_size=200, coef0=0.0, degree=3, epsilon=0.1,
    gamma='auto_deprecated', kernel='rbf', max_iter=-1, shrinking=True,
    tol=0.001, verbose=False)
```

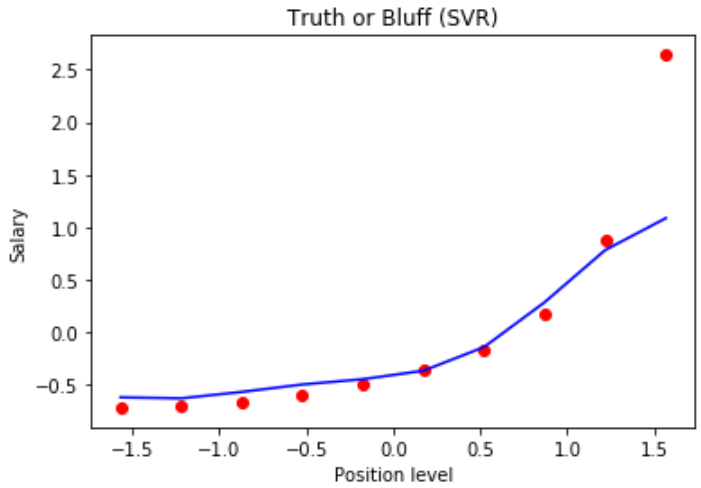
In [29]:
```
# Fitting SVR to the dataset
from sklearn.svm import SVR
regressor = SVR(kernel = 'rbf')
regressor.fit(X, y)
```

```
C:\Users\nilesh\Anaconda3\lib\site-packages\sklearn\utils\validation.py:724: DataConversionWarning: A column-vector y was passed
when a 1d array was expected. Please change the shape of y to (n_samples, ), for example using ravel().
  y = column_or_1d(y, warn=True)
```

Out[29]:
```
SVR(C=1.0, cache_size=200, coef0=0.0, degree=3, epsilon=0.1,
    gamma='auto_deprecated', kernel='rbf', max_iter=-1, shrinking=True,
    tol=0.001, verbose=False)
```

In [30]:
```
# Predicting a new result
y_pred = regressor.predict([[6.5]])
y_pred = sc_y.inverse_transform(y_pred)
```

In [31]:
```
# Visualising the SVR results
plt.scatter(X, y, color = 'red')
plt.plot(X, regressor.predict(X), color = 'blue')
plt.title('Truth or Bluff (SVR)')
plt.xlabel('Position level')
plt.ylabel('Salary')
plt.show()
```



In [32]:
```
# Visualising the SVR results (for higher resolution and smoother curve)
X_grid = np.arange(min(X), max(X), 0.01) # choice of 0.01 instead of 0.1 step because the data is feature scaled
X_grid = X_grid.reshape((len(X_grid), 1))
plt.scatter(X, y, color = 'red')
plt.plot(X_grid, regressor.predict(X_grid), color = 'blue')
plt.title('Truth or Bluff (SVR)')
plt.xlabel('Position level')
plt.ylabel('Salary')
plt.show()
```