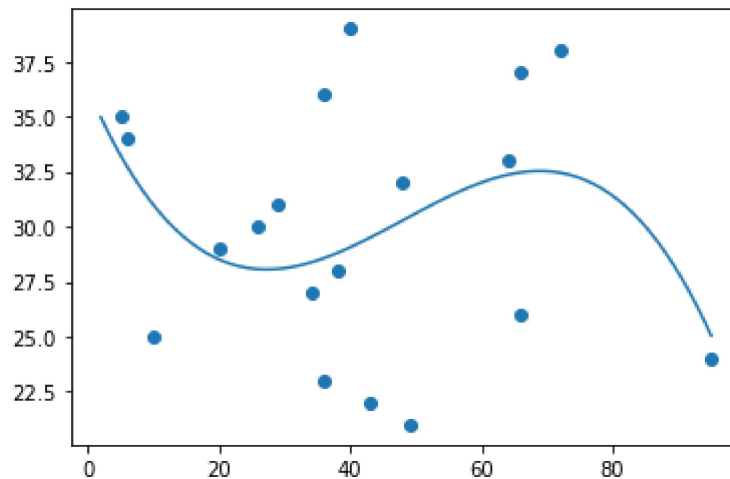# Submitted by:Musharaf Ahsan

In [ ]:
```python
# bad dit
import numpy
import matplotlib.pyplot as plt

x = [49,43,36,95,10,66,34,38,20,26,29,48,64,6,5,36,66,72,40]
y =[21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39]
model = numpy.poly1d(numpy.polyfit(x,y,3))

myline = numpy.linspace(2,95,100)

plt.scatter(x,y)
plt.plot(myline,model(myline))
plt.show()
```


In [ ]:
```python
import numpy
from sklearn.metrics import r2_score
x = [49,43,36,95,10,66,34,38,20,26,29,48,64,6,5,36,66,72,40]
y =[21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39]
model = numpy.poly1d(numpy.polyfit(x,y,3))

myline = numpy.linspace(2,95,100)

print(r2_score(y,model(x)))
```
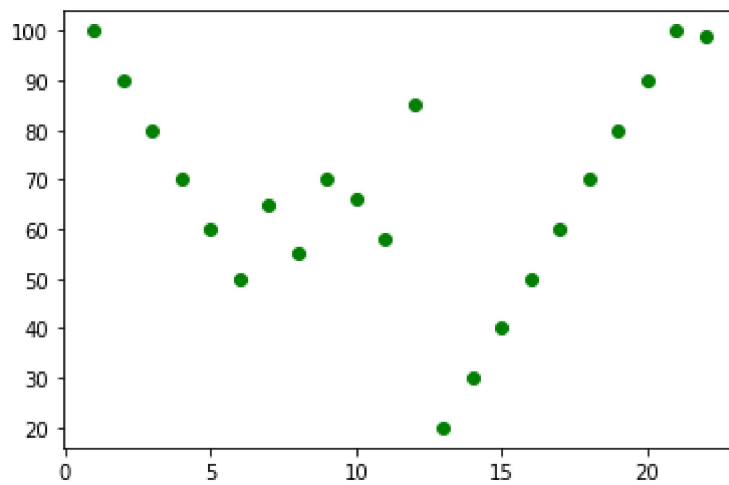
0.15155163913104597

In [ ]:
```python
# step 1 Data
import matplotlib.pyplot as plt

x= [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22]
y=[100,90,80,70,60,50,65,55,70,66,58,85,20,30,40,50,60,70,80,90,100,99]

plt.scatter(x,y,color = "green")
plt.show()
```
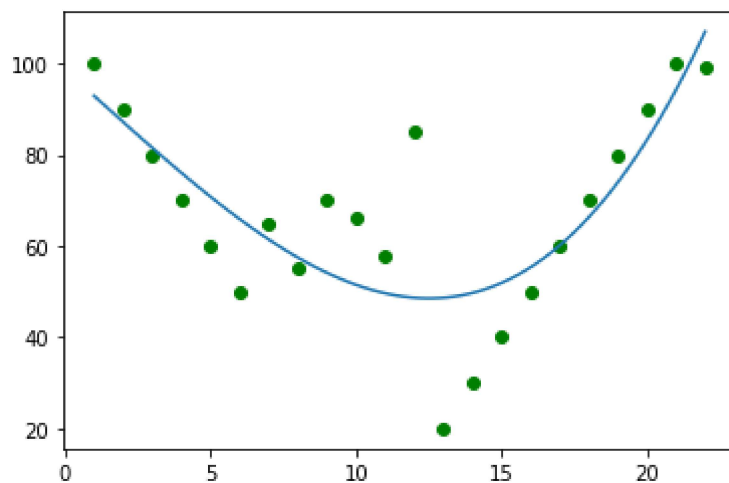
```
In [ ]:  import numpy
         import matplotlib.pyplot as plt
         x= [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22]
         y=[100,90,80,70,60,50,65,55,70,66,58,85,20,30,40,50,60,70,80,90,100,99]

         model = numpy.poly1d(numpy.polyfit(x,y,3))

         myline = numpy.linspace(1,22,100)

         plt.scatter(x,y, color = "green")
         plt.plot(myline,model(myline))
         plt.show()
```



```
In [ ]:  #step 3 Rsquared
         import numpy
         from sklearn.metrics import r2_score
         x = [49,43,36,95,10,66,34,38,20,26,29,48,64,6,5,36,66,72,40]
         y =[21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39]
         model = numpy.poly1d(numpy.polyfit(x,y,3))


         print(r2_score(y,model(x)))
```

         0.15155163913104597

```
In [ ]:  # prediction
         import numpy
```

```python
from sklearn.metrics import r2_score
x = [49,43,36,95,10,66,34,38,20,26,29,48,64,6,5,36,66,72,40]
y =[21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39]
mymodel = numpy.poly1d(numpy.polyfit(x,y,3))


speed = mymodel(18)
print(speed)
```

28.81560212206403

```python
from sklearn.metrics import r2_score
x = [49,43,36,95,10,66,34,38,20,26,29,48,64,6,5,36,66,72,40]
y =[21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39]
```