

**NOMBRE: ALEX BENAVIDEZ**

**CARRERA: INGENIERIA EN SISTEMAS**

**MATERIA: SIMULACION**

**PROFESOR: DEIGO QUISI**

In [28]:



```
1 %matplotlib inline
2 from pylab import *
3 import numpy as np
4 import pandas as pd
5 import sympy as sp
```

**NUMERO DE CASOS NUMERO DE MUERTES EN ECUADOR**

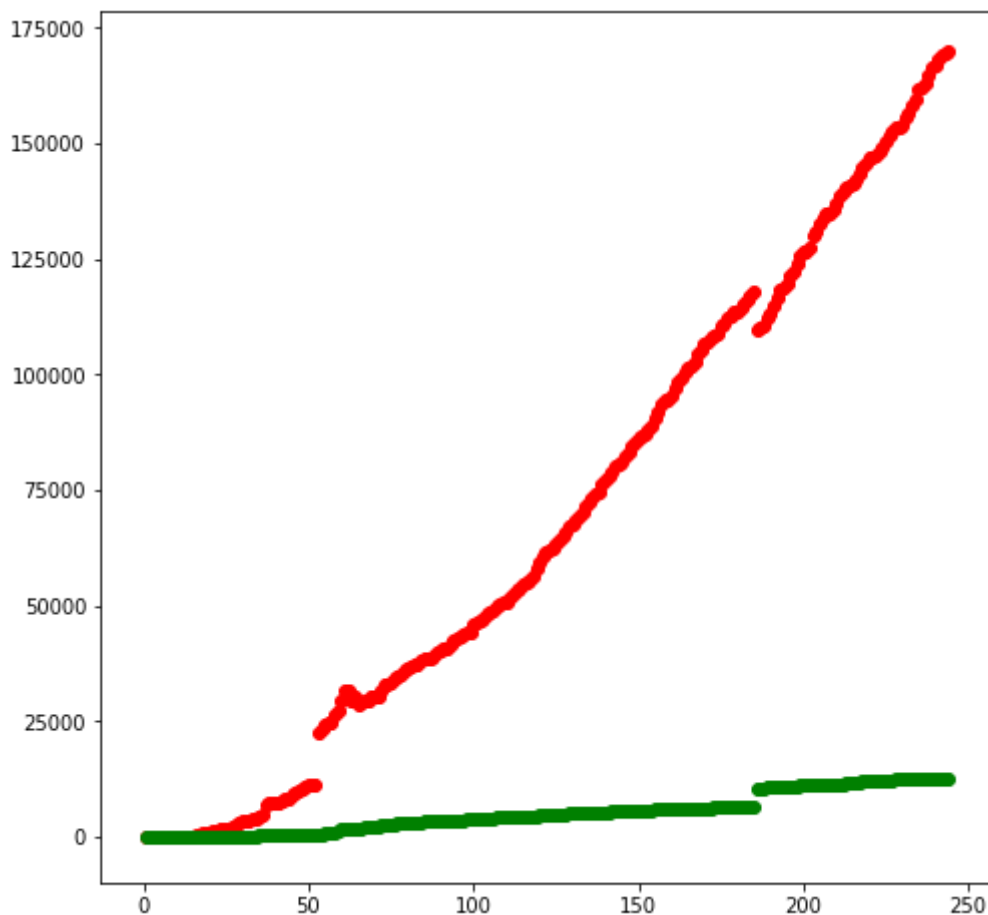
In [29]:

```

1 df = pd.read_csv('covidDatos.csv').fillna(0) # poniendo datos nan a cero
2 df= df.loc[(df['location'] == 'Ecuador') & (df['total_cases'] != 0)] # filtrando por p
3 df=df[['date', 'total_cases', 'total_deaths']]
4 x=np.arange(1,len(ndf1)+1,1, dtype='float')
5 y=np.array(ndf1.values[:,1], dtype='float')
6 y1=np.array(ndf1.values[:,2],dtype='float')
7
8 print(fun1)
9 plt.figure(figsize=(8, 8))
10 plt.scatter(x, y, color='red')
11 plt.scatter(x,y1, color='green')
12 plt.show()

```

$$-3.285e-06 x^4 + 0.001898 x^3 - 0.2134 x^2 + 46.31 x - 740.8$$

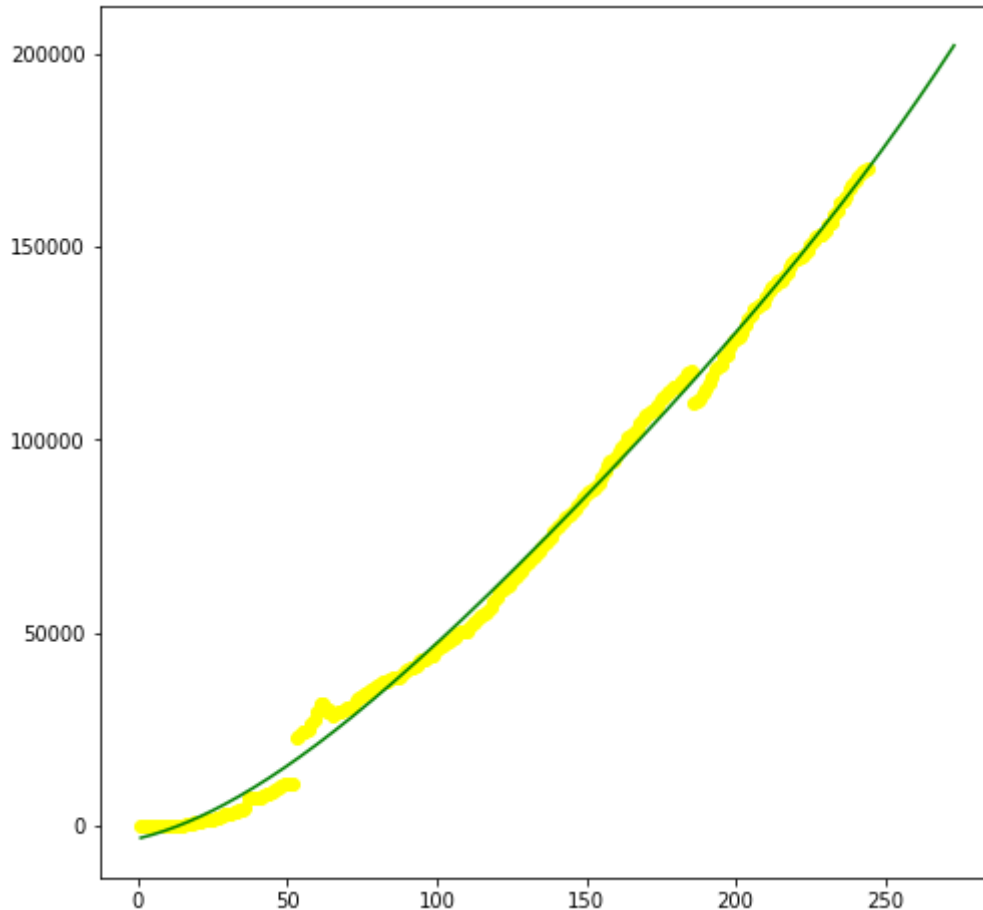


## REGRESION POLINOMIAL NUMERO DE CASOS EN ECUADOR

In [39]:

```
1 funcion = np.poly1d(np.polyfit(x, y, 4))
2 print(pfuncion)
3 plt.figure(figsize=(8, 8))
4 plt.scatter(x, y, color = "yellow")
5 x1=np.arange(1,len(df)+30,1, dtype='float')
6 plt.plot(x1, funcion(x1), color='green')
7 plt.show()
```

2.806e-05 x<sup>4</sup> - 0.01701 x<sup>3</sup> + 4.631 x<sup>2</sup> + 185 x - 3223



## REGRESION POLINOMIAL NUMERO DE MUERTES EN ECUADOR POR COVID-19

In [42]:

```
1 funcion = np.poly1d(np.polyfit(x, y1, 4))
2 print(funcion)
3 plt.figure(figsize=(8, 8))
4 plt.scatter(x, y1, color = "yellow")
5 #plt.scatter(x, funcion(x), color='green')
6 plt.plot(x, funcion(x), color='green')
7 plt.show()
```

$$-3.285e-06 x^4 + 0.001898 x^3 - 0.2134 x^2 + 46.31 x - 740.8$$

