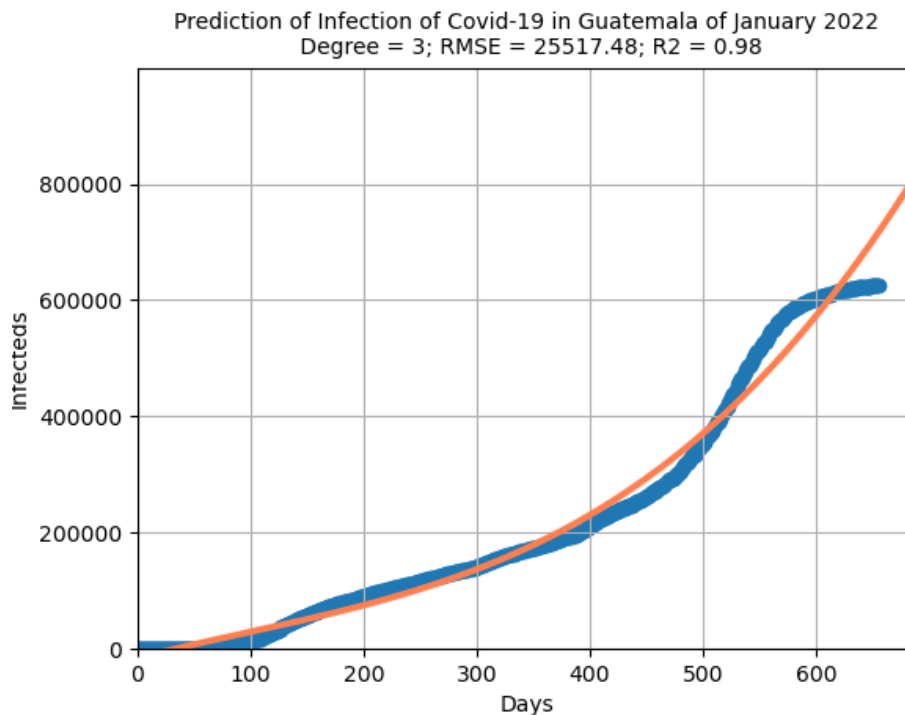




Proyecto 1 Ejercicio 2: Predicción COVID-19 enero 2022

GRAFICA



CÓDIGO

Repositorio: [monica-261/IA_Clase at Proyecto1Ejercicio2 \(github.com\)](https://github.com/monica-261/IA_Clase_at_Proyecto1Ejercicio2)

```
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import PolynomialFeatures
from sklearn.metrics import mean_squared_error, r2_score
import matplotlib.pyplot as plt
import numpy as np

x =
np.asarray([0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,2
6,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,5
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201213062

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y =
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23731,623795,624171,624544,624866,625029,625127,625166,625257,625854)][: ,np.newax
is]
plt.scatter(x,y)
```



```
poly_degree = 3
polynomial_features = PolynomialFeatures(degree = poly_degree)
x_transform = polynomial_features.fit_transform(x)

model = LinearRegression().fit(x_transform, y)
y_new = model.predict(x_transform)

rmse = np.sqrt(mean_squared_error(y, y_new))
r2 = r2_score(y, y_new)
print('RMSE: ', rmse)
print('R2: ', r2)

x_new_min = 0.0
x_new_max = 689.0

x_new = np.linspace(x_new_min, x_new_max, 690)
x_new = x_new[:, np.newaxis]

x_new_transform = polynomial_features.fit_transform(x_new)
y_new = model.predict(x_new_transform)

plt.plot(x_new, y_new, color='coral', linewidth=3)
plt.grid()
plt.xlim(x_new_min, x_new_max)
plt.ylim(0, 999999)
title = 'Degree = {}; RMSE = {}; R2 = {}'.format(poly_degree, round(rmse, 2),
round(r2, 2))
plt.title("Prediction of Infection of Covid-19 in Guatemala of January 2022\n " +
title,
fontsize=10)
plt.xlabel('Days')
plt.ylabel('Infecteds')
plt.show()
```