# Gemstone Price Prediction

## Company information

Gem Stone Company is a leading producer and supplier of semi- precious stones especially zirconia stone . Since it became a prominent player in the industry, it has gained the trust of customers.

## Problem statement

Using regression techniques, we help provide information to predict the highest and lowest prices based on the quality, clarity and color of zircon stone.

## Questions

1. How can you distinguish between gemstones with higher profit and gemstones with l ower profit and predict their price?
2. Determine the expected price for each gemstone according to its specifications ?

## Data Description

| Variable Name | Description |
|---|---|
| Carat | Carat weight of the cubic zirconia. |
| Cut | Describe the cut quality of the cubic zirconia. Quality is increasing order Fair, Good, Very Good, Premium, Ideal. |
| Color | Color of the cubic zirconia. With D being the best and J the worst. |
| Clarity | cubic zirconia Clarity refers to the absence of the Inclusions and Blemishes. (In order from Best to Worst, FL = flawless, I3= level 3 inclusions) FL, IF, VVS1, VVS2, VS1, VS2, SI1, SI2, I1, I2, I3 |
| Depth | The Height of a cubic zirconia, measured from the Culet to the table, divided by its average Girdle Diameter. |
| Table | The Width of the cubic zirconia's Table expressed as a Percentage of its Average Diameter. |
| Price | the Price of the cubic zirconia. |
| X | Length of the cubic zirconia in mm. |
| Y | Width of the cubic zirconia in mm. |
| Z | Height of the cubic zirconia in mm. |

## Tools

- **Technologies**: Python, Jupiter notebook .
- **Libraries:** NumPy, Pandas, Matplotlib, Seaborn,Sklearn.