

MKT Galaxy is a company from the Packed Consumer Goods industry and sells several products across the galaxy. Their main clients are on Earth and Mars, where they sell their main products, which are: Eddie, Infinite Improbability Drive, Deep Thought, Towel, Vogon Poetry, and Marwin.

MKT is facing a sales and operation(S&OP) problem, their clients are spread across the galaxy, and they all have different time notions. This creates a problem as MKT cannot understand the sales of their products pattern and struggle to predict their demands. They need to better understand their pattern of sales to be able to plan their operations and the purchase of commodities they use in their products.

To do that, they summon you to deep dive into their last 12 years of sales data and bring some insights on the matter. Their objective is to understand MKT sales per product and planet, capturing its seasonality, trend, and possible correlations. They do know one thing, it does not matter the planet you are, the concept of an Earth week is the best way to evaluate dates across the galaxy and that they need to follow the Earth Year's and advise you to use the Year – Week Number time convention, e.g.: 2019-01, 2019-02, ..., 2019-51, 2019-52.

Their data is structure as follows:

- Date: Datetime value type informing the date of sale.
- Price: Integer value type informing the amount paid in each sale.
- Planet: String value type informing the planet they sold to.
- Geocode: Integer type informing the ZIP CODE(CEP) of the client.
- Product: String value informing the product that was bought.

Then they ask you two things:

1. A computer code that calculates a couple of things.
2. An analysis using the computer code of your choice.

The things they want to do calculate are:

- 1) Total Sales per year.
- 2) Total Sales per product and planet.
- 3) Time series of total sales by planet and product in a year-week base (52 weeks in a year).
- 4) Total Sales of Deep Thought on Mars from 2015-20 to 2018-22.

They also ask you to return in 6 days with a report, in your preferred format, explaining what you have learned from their data that might help the company to have less uncertainty over its demand and sales. They ask you to deliver the computer code used in your analysis.

They insist that if you have any doubts, concerns or troubles get in touch with one of their Hitchhiker's and beforehand offer you some advice, which they call "Tips and Hits from The Hitchhiker's Guide to Data Science".