

Extracting and Visualizing Stock Data

Description

Extracting essential data from a dataset and displaying it is a necessary part of data science; therefore individuals can make correct decisions based on the data. In this assignment, you will extract some stock data, you will then display this data in a graph.

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Estimated Time Needed: **30 min**

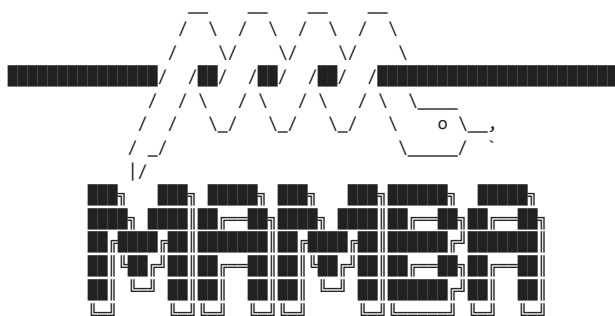
***Note*:-** If you are working in IBM Cloud Watson Studio, please replace the command for installing nbformat from `!pip install nbformat==4.2.0` to simply `!pip install nbformat`

```
In [1]: !pip install yfinance==0.1.67
!mamba install bs4==4.10.0 -y
!pip install nbformat==4.2.0
```

```

Collecting yfinance==0.1.67
  Downloading yfinance-0.1.67-py2.py3-none-any.whl (25 kB)
Requirement already satisfied: pandas>=0.24 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance==0.1.67) (1.3.5)
Requirement already satisfied: numpy>=1.15 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance==0.1.67) (1.21.6)
Requirement already satisfied: requests>=2.20 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance==0.1.67) (2.29.0)
Collecting multitasking>=0.0.7 (from yfinance==0.1.67)
  Downloading multitasking-0.0.11-py3-none-any.whl (8.5 kB)
Requirement already satisfied: lxml>=4.5.1 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance==0.1.67) (4.6.4)
Requirement already satisfied: python-dateutil>=2.7.3 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from pandas>=0.24->yfinance==0.1.67) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from pandas>=0.24->yfinance==0.1.67) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance==0.1.67) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance==0.1.67) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance==0.1.67) (1.26.15)
Requirement already satisfied: certifi>=2017.4.17 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance==0.1.67) (2023.5.7)
Requirement already satisfied: six>=1.5 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from python-dateutil>=2.7.3->pandas>=0.24->yfinance==0.1.67) (1.16.0)
Installing collected packages: multitasking, yfinance
Successfully installed multitasking-0.0.11 yfinance-0.1.67

```



mamba (1.4.2) supported by @QuantStack

GitHub: <https://github.com/mamba-org/mamba>
 Twitter: <https://twitter.com/QuantStack>

Looking for: ['bs4==4.10.0']

```

[+] 0.0s
[+] 0.1s
pkgs/main/linux-64 0.0 B / ???.?MB @ ???.?MB/s 0.1s
pkgs/main/noarch 0.0 B / ???.?MB @ ???.?MB/s 0.1s
pkgs/r/linux-64 0.0 B / ???.?MB @ ???.?MB/s 0.1s
pkgs/r/noarch 0.0 B / ???.?MB @ ???.?MB/s 0.1s
hange
pkgs/main/linux-64 No change
pkgs/r/noarch No change
pkgs/r/linux-64 No change

```

Pinned packages:
 - python 3.7.*

Transaction

Prefix: /home/jupyterlab/conda/envs/python

All requested packages already installed

Collecting nbformat==4.2.0

Downloading nbformat-4.2.0-py2.py3-none-any.whl (153 kB)
 153.3/153.3 kB 22.7 MB/s eta 0:00:00

```

Requirement already satisfied: ipython-genutils in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from nbformat==4.2.0) (0.2.0)
Requirement already satisfied: jsonschema!=2.5.0,>=2.4 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from nbformat==4.2.0) (4.17.3)
Requirement already satisfied: jupyter-core in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from nbformat==4.2.0) (4.12.0)
Requirement already satisfied: traitlets>=4.1 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from nbformat==4.2.0) (5.9.0)
Requirement already satisfied: attrs>=17.4.0 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (23.1.0)
Requirement already satisfied: importlib-metadata in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (4.11.4)
Requirement already satisfied: importlib-resources>=1.4.0 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (5.12.0)
Requirement already satisfied: pkgutil-resolve-name>=1.3.10 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (1.3.10)
Requirement already satisfied: pyparsing!=0.17.0,!0.17.1,!0.17.2,>=0.14.0 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (fr

```

```

om jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (0.19.3)
Requirement already satisfied: typing-extensions in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (4.5.0)
Requirement already satisfied: zipp>=3.1.0 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from importlib-resources>=1.4.0->jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (3.15.0)
Installing collected packages: nbformat
  Attempting uninstall: nbformat
    Found existing installation: nbformat 5.8.0
    Uninstalling nbformat-5.8.0:
      Successfully uninstalled nbformat-5.8.0
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
jupyter-server 1.24.0 requires nbformat>=5.2.0, but you have nbformat 4.2.0 which is incompatible.
nbclient 0.7.4 requires nbformat>=5.1, but you have nbformat 4.2.0 which is incompatible.
nbconvert 7.4.0 requires nbformat>=5.1, but you have nbformat 4.2.0 which is incompatible.
Successfully installed nbformat-4.2.0

```

```

In [ ]: import yfinance as yf
import pandas as pd
import requests
from bs4 import BeautifulSoup
import plotly.graph_objects as go
from plotly.subplots import make_subplots

```

Define Graphing Function

In this section, we define the function `make_graph`. You don't have to know how the function works, you should only care about the inputs. It takes a dataframe with stock data (dataframe must contain Date and Close columns), a dataframe with revenue data (dataframe must contain Date and Revenue columns), and the name of the stock.

```

In [3]: def make_graph(stock_data, revenue_data, stock):
fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price", "Historical Revenue"), vertical_spacing = .3
stock_data_specific = stock_data[stock_data.Date <= '2021-06-14']
revenue_data_specific = revenue_data[revenue_data.Date <= '2021-04-30']
fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data_specific.Date, infer_datetime_format=True), y=stock_data_specific.Close.astype("float"),
fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data_specific.Date, infer_datetime_format=True), y=revenue_data_specific.Revenue.astype("float"),
fig.update_xaxes(title_text="Date", row=1, col=1)
fig.update_xaxes(title_text="Date", row=2, col=1)
fig.update_yaxes(title_text="Price ($US)", row=1, col=1)
fig.update_yaxes(title_text="Revenue ($US Millions)", row=2, col=1)
fig.update_layout(showlegend=False,
height=900,
title=stock,
xaxis_rangeslider_visible=True)
fig.show()

```

Question 1: Use yfinance to Extract Stock Data

Using the `Ticker` function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is Tesla and its ticker symbol is `TSLA`.

```

In [5]: !pip install yfinance

```

```

Requirement already satisfied: yfinance in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (0.1.67)
Requirement already satisfied: pandas>=0.24 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance) (1.3.5)
Requirement already satisfied: numpy>=1.15 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance) (1.21.6)
Requirement already satisfied: requests>=2.20 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance) (2.29.0)
Requirement already satisfied: multitasking>=0.0.7 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance) (0.0.11)
Requirement already satisfied: lxml>=4.5.1 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from yfinance) (4.6.4)
Requirement already satisfied: python-dateutil>=2.7.3 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from pandas>=0.24->yfinance) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from pandas>=0.24->yfinance) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance) (1.26.15)
Requirement already satisfied: certifi>=2017.4.17 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from requests>=2.20->yfinance) (2023.5.7)
Requirement already satisfied: six>=1.5 in /home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from python-dateutil>=2.7.3->pandas>=0.24->yfinance) (1.16.0)

```

```

In [10]: def make_graph(stock_data, revenue_data, stock):
fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price", "Historical Revenue"), vertical_spacing = .3
fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_format=True), y=stock_data.Close.astype("float"), name="Share Price")
fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data.Date, infer_datetime_format=True), y=revenue_data.Revenue.astype("float"), name="Revenue")
fig.update_xaxes(title_text="Date", row=1, col=1)
fig.update_xaxes(title_text="Date", row=2, col=1)
fig.update_yaxes(title_text="Price ($US)", row=1, col=1)
fig.update_yaxes(title_text="Revenue ($US Millions)", row=2, col=1)
fig.update_layout(showlegend=False,
height=900,
title=stock,

```

```
xaxis_rangeslider_visible=True)
fig.show()
```

Using the ticker object and the function `history` extract stock information and save it in a dataframe named `tesla_data` . Set the `period` parameter to `max` so we get information for the maximum amount of time.

```
In [14]: import yfinance as yf
```

```
In [15]: tesla_ticker = yf.Ticker('TSLA')
```

```
In [16]: tesla_data = tesla_ticker.history(period="max")
```

Reset the index using the `reset_index(inplace=True)` function on the `tesla_data` DataFrame and display the first five rows of the `tesla_data` dataframe using the `head` function. Take a screenshot of the results and code from the beginning of Question 1 to the results below.

```
In [17]: tesla_data.reset_index(inplace=True)
```

```
In [19]: import requests
from bs4 import BeautifulSoup
```

Question 2: Use Webscraping to Extract Tesla Revenue Data

Use the `requests` library to download the webpage <https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/revenue.htm> Save the text of the response as a variable named `html_data` .

```
In [20]: url="https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/revenue.htm"
html_data=requests.get(url).text
```

Parse the html data using `beautiful_soup` .

```
In [22]: soup = BeautifulSoup(html_data, "html.parser")
print(soup.prettify())
```

```
<!DOCTYPE html>
<!--[if lt IE 7]>      <html class="no-js lt-ie9 lt-ie8 lt-ie7"> <![endif]-->
<!--[if IE 7]>         <html class="no-js lt-ie9 lt-ie8"> <![endif]-->
<!--[if IE 8]>         <html class="no-js lt-ie9"> <![endif]-->
<!--[if gt IE 8]><!--
<html class="no-js">
<!--<![endif]-->
<head>
  <meta charset="utf-8"/>
  <meta content="IE=edge,chrome=1" http-equiv="X-UA-Compatible"/>
  <link href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue" rel="canonical"/>
  <title>
    Tesla Revenue 2010-2022 | TSLA | MacroTrends
  </title>
  <meta content="Tesla annual/quarterly revenue history and growth rate from 2010 to 2022. Revenue can be defined as the amount of money a company
receives from its customers in exchange for the sales of goods or services. Revenue is the top line item on an income statement from which all co
sts and expenses are subtracted to arrive at net income.

      <ul style='margin-top:10px;'>
        <li>Tesla revenue for the quarter ending September 30, 2022 was <strong>$21.454B</strong>, a <
t;strong>55.95% increase</strong> year-over-year.</li>
        <li>Tesla revenue for the twelve months ending September 30, 2022 was <strong>$74.863B</strong>,
a <strong>59.8% increase</strong> year-over-year.</li>
        <li>Tesla annual revenue for 2021 was <strong>$53.823B</strong>, a <strong>70.67% increase
</strong> from 2020.</li>
        <li>Tesla annual revenue for 2020 was <strong>$31.536B</strong>, a <strong>28.31% increase
</strong> from 2019.</li>
        <li>Tesla annual revenue for 2019 was <strong>$24.578B</strong>, a <strong>14.52% increase
</strong> from 2018.</li>
      </ul><!-->
  <meta content="" name="robots">
  <link href="/assets/images/icons/FAVICON/macro-trends_favicon.ico" rel="shortcut icon" type="image/x-icon"/>
  <meta content="1228954C688F5907894001CD8E5E624B" name="msvalidate.01"/>
  <meta content="6MnD_3iDtAP1ZyoGK1YMyVIVck4r5Ws80I9xD3ue4_A" name="google-site-verification"/>
  <!-- Load in Roboto Font -->
  <link href="https://fonts.googleapis.com/css?family=Roboto:400,600,700" rel="stylesheet"/>
  <!-- Bootstrap -->
  <link href="//maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css" rel="stylesheet"/>
  <!--for Bootstrap CDN version-->
  <link href="//maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap-theme.min.css" rel="stylesheet"/>
  <!-- Font Awesome -->
  <link href="//stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" rel="stylesheet"/>
  <!--for Font Awesome CDN version-->
  <!-- JQuery, Bootstrap and Menu Javascript -->
  <script crossorigin="anonymous" integrity="sha256-ZosEbRlbnQzLpnKIkEdrPv7lOy9C27hHQ+Xp8a4MxAQ=" src="//code.jquery.com/jquery-1.12.4.min.js">
  </script>
  <script src="//maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js">
  </script>
  <!-- Modernizr for cross-browser support -->
  <script src="/assets/javascript/modernizr-2.6.2-respond-1.1.0.min.js" type="text/javascript">
  </script>
  <!-- Latest compiled and minified CSS -->
  <link href="//www.fuelcdn.com/fuelux/3.13.0/css/fuelux.min.css" rel="stylesheet"/>
  <!-- Latest compiled and minified JavaScript -->
  <script src="//www.fuelcdn.com/fuelux/3.13.0/js/fuelux.min.js">
  </script>
  <!-- Twitter Card data -->
  <meta content="summary_large_image" name="twitter:card"/>
  <meta content="@tmacrorends" name="twitter:site"/>
  <meta content="Tesla Revenue 2010-2022 | TSLA" name="twitter:title"/>
  <meta content="Tesla annual/quarterly revenue history and growth rate from 2010 to 2022. Revenue can be defined as the amount of money a compa
ny receives from its customers in exchange for the sales of goods or services. Revenue is the top line item on an income statement from which all
costs and expenses are subtracted to arrive at net income.

      <ul style='margin-top:10px;'>
        <li>Tesla revenue for the quarter ending September 30, 2022 was <strong>$21.454B</strong>, a <
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        <li>Tesla revenue for the twelve months ending September 30, 2022 was <strong>$74.863B</strong>,
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</strong> from 2020.</li>
        <li>Tesla annual revenue for 2020 was <strong>$31.536B</strong>, a <strong>28.31% increase
</strong> from 2019.</li>
        <li>Tesla annual revenue for 2019 was <strong>$24.578B</strong>, a <strong>14.52% increase
</strong> from 2018.</li>
      </ul><!-->
  <!-- Open Graph data -->
  <meta content="https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue" property="og:url">
  <meta content="Tesla Revenue 2010-2022 | TSLA" property="og:title">
  <meta content="Tesla annual/quarterly revenue history and growth rate from 2010 to 2022. Revenue can be defined as the amount of money a com
pany receives from its customers in exchange for the sales of goods or services. Revenue is the top line item on an income statement from which a
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      <ul style='margin-top:10px;'>
        <li>Tesla revenue for the quarter ending September 30, 2022 was <strong>$21.454B</strong>, a <
t;strong>55.95% increase</strong> year-over-year.</li>
        <li>Tesla revenue for the twelve months ending September 30, 2022 was <strong>$74.863B</strong>,
a <strong>59.8% increase</strong> year-over-year.</li>
```

```

<li>Tesla annual revenue for 2021 was <strong>$53.823B</strong>, a <strong>70.67% increase</strong> from 2020.</li>
<li>Tesla annual revenue for 2020 was <strong>$31.536B</strong>, a <strong>28.31% increase</strong> from 2019.</li>
<li>Tesla annual revenue for 2019 was <strong>$24.578B</strong>, a <strong>14.52% increase</strong> from 2018.</li>
</ul>" property="og:description">
<!-- JQXGRID STYLES AND JAVASCRIPT -->
<link href="/assets/php/jqfiles/jqwidgets/styles/jqx.base.css" rel="stylesheet" type="text/css">
<link href="/assets/php/jqfiles/jqwidgets/styles/jqx.bootstrap.css" rel="stylesheet" type="text/css">
<!-- LOAD THESE SCRIPTS EARLY SO THE TICKER INPUT FIELD IS STYLED INSTANTLY -->
<script src="/assets/php/jqfiles/jqwidgets/jqxc.js" type="text/javascript">
</script>
<script src="/assets/php/jqfiles/jqwidgets/jqxdata.js" type="text/javascript">
</script>
<script src="/assets/php/jqfiles/jqwidgets/jqxinput.js" type="text/javascript">
</script>
<!-- Styling for search box -->
<link href="/assets/php/jquery-typeahead/jquery.typeahead.css" rel="stylesheet" type="text/css"/>
<!-- Search box javascript -->
<script src="/assets/php/jquery-typeahead/jquery.typeahead.min.js">
</script>
<link href="//cdnjs.cloudflare.com/ajax/libs/select2/4.0.3/css/select2.min.css" rel="stylesheet">
<script src="//cdnjs.cloudflare.com/ajax/libs/select2/4.0.3/js/select2.min.js">
</script>
<!-- ToolTips -->
<script src="/assets/php/tipped-4.6.1/js/tipped/tipped.js">
</script>
<link href="/assets/php/tipped-4.6.1/css/tipped/tipped.css" rel="stylesheet"/>
<!-- START IC AD INSERT -->
<script>
InvestingChannelQueue = window.InvestingChannelQueue || [];
</script>
<script async="" src="https://u5.investingchannel.com/static/uat.js">
</script>
<script type="text/javascript">
//Push Run command with the API-Key, so that UAT will start processing publishers request.
InvestingChannelQueue.push(function() {
    ic_page = InvestingChannel.UAT.Run("df17ac1e-cc7f-11e8-82a5-0abbb61c4a6a");
});

    var tickerValue = 'TSLA';
var oopDivTag;
    var subLeaderboardTag;
    var rightSidebarTag1;
    var rightSidebarTag2;
    var searchButtonTag;
    var partner_center_tag;
    var videoTag;
    var ic_3x7_1;
    //var IC_D_300x250_BCC;
    //var IC_D_3x7_BCC;

//To define new tags/out of page tags.
InvestingChannelQueue.push(function() {

    ic_page.setKval({'t': tickerValue});

    //videoTag = ic_page.defineNativeTag("Macrorends/fundamentalanalysis", "3x6, 728x90, Fluid", "IC_D_3x6", 35);

    oopDivTag = ic_page.defineOutOfPageTag("Macrorends/fundamentalanalysis", "oopDivTag_1");
    oopDivTag.setKval({"adslot": "IC_OOP_1"});

    LeaderboardTag = ic_page.defineTag("Macrorends/fundamentalanalysis", "970x250,728x90,970x90,fluid", "IC_D_970x250_1");
    LeaderboardTag.setKval({"adslot": "IC_D_970x250_1"});

    subLeaderboardTag = ic_page.defineTag("Macrorends/fundamentalanalysis", "728x90", "ic_728x90_1");
    subLeaderboardTag.setKval({"adslot": "IC_728x90_1"});

    rightSidebarTag1 = ic_page.defineTag("Macrorends/fundamentalanalysis", "300x250,Fluid", "ic_300x250_1");
    rightSidebarTag1.setKval({"adslot": "IC_300x250_1"});

    rightSidebarTag2 = ic_page.defineTag("Macrorends/fundamentalanalysis", "300x600,300x250,160x600,300x1050,Fluid", "ic_300x600_1");
    rightSidebarTag2.setKval({"adslot": "IC_300x600_1"});

    searchButtonTag = ic_page.defineTag("Macrorends/fundamentalanalysis", "88x31", "ic_88x31_1");
    searchButtonTag.setKval({"pc": "pc", "adslot": "IC_88x31"});

    partner_center_tag = ic_page.defineTag("macrorends/fundamentalanalysis", "728x214, 728x90", "IC_728x214_1");
    partner_center_tag.setKval({"pc": "pc", "adslot": "d_728x90_2"});

    ic_3x7_1 = ic_page.defineNativeTag("macrorends/fundamentalanalysis", "3x7,728x90,Fluid", "IC_3x7_1", 35);

```

```

//IC_D_300x250_BCC = ic_page.defineTag(adCategory,"300x250,Fluid","IC_D_300x250_BCC");
//IC_D_300x250_BCC.setKval({"adslot":"IC_D_300x250_BCC"});

//IC_D_3x7_BCC = ic_page.defineTag(adCategory,"3x7, Fluid","IC_D_3x7_BCC");
//IC_D_3x7_BCC.setKval({"adslot":"IC_D_3x7_BCC"});

});

//To render tags.
InvestingChannelQueue.push(function() {
    ic_page.renderTags();
});
</script>
<!-- END IC AD INSERT -->
<!-- Global site tag (gtag.js) - Google Analytics -->
<script async="" src="https://www.googletagmanager.com/gtag/js?id=UA-62099500-1">
</script>
<script>
    window.dataLayer = window.dataLayer || [];
    function gtag(){dataLayer.push(arguments);}
    gtag('js', new Date());

    gtag('config', 'UA-62099500-1');
</script>
<!-- Google tag (gtag.js) -->
<script async="" src="https://www.googletagmanager.com/gtag/js?id=G-3KL0LYERBH">
</script>
<script>
    window.dataLayer = window.dataLayer || [];
    function gtag(){dataLayer.push(arguments);}
    gtag('js', new Date());

    gtag('config', 'G-3KL0LYERBH');
</script>
<!--<script>
    (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
    (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
    m=s.getElementsByName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
    })(window,document,'script','/www.google-analytics.com/analytics.js','ga');

    ga('create', 'UA-62099500-1', 'auto');
    ga('send', 'pageview');

    //Send one event to GA at 30 seconds to control bounce rate
    setTimeout("ga('send','event','Engaged User','30 Second Engagement')",30000);

    //This code sends events to ga every 30 seconds when the window is in focus
    var count = 0;
    var myInterval;

    // Active
    window.addEventListener('load', startTimer);
    window.addEventListener('focus', startTimer);

    // Inactive
    window.addEventListener('blur', stopTimer);

    function timerHandler() {
        count++;

        if(count % 60 == 0 && count <= 1800) {

            var interval = (count/60);
            interval = interval.toFixed(0);

            var action = interval + " Minute Engagement";

            ga('send','event','Engaged User',action);

        }

    }

    // Start timer
    function startTimer() {
        myInterval = window.setInterval(timerHandler, 1000);
    }

    // Stop timer
    function stopTimer() {
        window.clearInterval(myInterval);
    }

```

```
}
```

```
    </script>-->
    <style>
        #style-1::-webkit-scrollbar-track
    {
        -webkit-box-shadow: inset 0 0 6px rgba(0,0,0,0.3);
        border-radius: 3px;
        background-color: #F5F5F5;
    }

    #style-1::-webkit-scrollbar
    {
        width: 18px;
        background-color: #F5F5F5;
    }

    #style-1::-webkit-scrollbar-thumb
    {
        border-radius: 3px;
        -webkit-box-shadow: inset 0 0 6px rgba(0,0,0,.3);
        background-color: #5B9BD5;
    }

    html {
        width:100%;
        position: relative;
        min-height: 100%;
    }

    body {

        width:100%;

        /* Margin bottom by footer height */
        margin-bottom: 80px;
        color: #444;
        background-color:#fff;
        font-family: 'Roboto', sans-serif;
        font-size:14px;
    }


    .header_content_container {

        min-width: 1280px;
        padding: 0px;
    }

    .main_content_container {

        min-width: 1280px;
        max-width: 1280px;
        padding: 0px 30px 100px 30px;
    }

    .sub_main_content_container {

    }

    #main_content {

        padding:0px 20px 0px 0px;
        width:826px;
        float:left;
    }

    #right_sidebar {

        width: 300px;
        float:left;
        height:3200px;
    }

    #sticky_ad_left {

        position: -webkit-sticky;
```



```

position: sticky;
top: 30px;

}

#sticky_ad_right {

    position: -webkit-sticky;
    position: sticky;
    top: 30px;

}


.footer {
    position: absolute;
    bottom: 0;
    width: 100%;
    /* Set the fixed height of the footer here */
    height: 100px;
    margin-top: 10px;
    padding: 30px 20px 20px 20px;
    color:#fff !important;
    background-color:#444;
    text-align: center;
    font-size:16px;
}

.footer a {
    color:#fff !important;
}

.ticker_search_box {

    background-color:#F5F5F5;
    border: 1px solid #E0E0E0;
    border-bottom:none;
    padding:10px 30px 10px 10px;
    margin:0px 0px 0px 0px;
    text-align:center;
}

.related_tickers {

    width:100%;
    background-color:#F5F5F5;
    border: 1px solid #E0E0E0;
    border-top: 0px;
    padding:3px 30px 3px 10px;
    margin:0px 0px 0px 0px;
    text-align:center;
}

.statement_type_select {

    width:100%;
    height:28px;
}

.frequency_select {

    width:100%;
    height:28px;
    font-weight:600;
}

.select2 {

    text-align:left;
    font-weight:600;

}

#jqxInput {

    width:100%;
    height:28px;

```

```

}

.header__parent_container {

    width:100%;
    height:50px;
    padding:15px 0px 10px -20px;
    margin:0px 0px 0px 0px;
    background-color:#444;

}

.header_container {

    width:100%;
    height:50px;
    padding:15px 0px 10px -20px;
    margin:0px 0px 0px 0px;
    background-color:#444;

}

.header_logo {

    padding-top:10px;
    margin-left:50px;

}

.menu_parent_container {

    width:100%;
    height:34px;
    font-size:16px;
    padding:15px 0px 10px -20px;
    margin:0px 0px 0px 0px;
    background-color:#0089de;

}

.menu_container {

    width:1280px;
    height:34px;
    font-size:16px;
    padding:11px 0px 0px -20px;
    margin: 0 auto;
    background-color:#0089de;
    z-index:1000;

}

.menu_item {

    height:34px;
    float:left;
    font-size:14px;
    font-weight:bold;
    color:#fff;
    text-align:center;
    padding:7px 16px 0px 16px;

}

.menu_item:hover
{
    background-color:#32a0e4;
    cursor: pointer;

}

.menu_item a
{
    color:#fff;
    cursor: pointer;

}

.menu_item a:hover
{
    text-decoration:none;
    cursor: pointer;

}

.leaderboard_ad {

    margin-top:20px;
    margin-bottom:20px;
    text-align:center;
    min-height:100px;

```

```

}

#filter_result_count {

    width:100%;
    text-align:center;
    font-size:24px;
    font-weight:bold;
    padding:10px 15px;
    background-color:#efefef;
    border: 1px solid #dfdfdf;
    margin:20px;

}


select {
    color: #444;
    background-color: #FFF;
    border: 1px solid #AAA;
    border-radius: 4px;
    box-sizing: border-box;
    cursor: pointer;
    display: block;
    height:40px;
    line-height: 40px;
}

.historical_data_table {
    table-layout: fixed;
    margin:20px;
}

.historical_data_table tbody tr td {

    padding:6px;
    vertical-align: middle !important;

}


.descriptors {

    text-align:center;
    font-size:14px;
    padding:15px;

}

.td_metric_name {

    width:110px;
    padding-top:17px;

}

.metric_link {

    font-size:14px;
    font-weight:bold;

}

.help_icon {

    width:15px;
    height:18px;
    padding-bottom:3px;

}

.td_min_value {

    width:75px;
    text-align:center;
    font-size:13px;

}

.td_max_value {

    width:75px;
    text-align:center;
    font-size:13px;

}

```

```
#myCombobox .form-control {  
  
    background-color: #99d5ff;  
  
}  
  
.dropdown-toggle {  
  
    height:24px;  
    padding-top:0px;  
    padding-left:7px;  
    width:24px;  
  
}  
  
.dropdown-menu-right {  
  
    min-width:75px;  
    font-size:13px;  
  
}  
  
.form-control {  
  
    font-size:12px;  
    padding:5px 10px;  
    height:24px;  
  
}  
  
#myPills1 {  
  
    margin:0px 15px 10px 0px;  
  
}  
  
#jqxgrid {  
  
    border-radius:0px;  
  
}  
  
.jqx-widget-header {  
  
    font-family: 'Roboto', sans-serif;  
    font-size:13px;  
  
}  
  
.jqx-item {  
  
    font-family: 'Roboto', sans-serif;  
    font-size: 13px;  
  
}  
  
.jqx-widget-content {  
  
    border-color: #E0E0E0;  
  
}  
  
#jqxgrid .jqx-grid-cell {  
  
    border-color: #E0E0E0;  
  
}  
  
#jqxgrid .jqx-grid-cell-pinned {  
  
    border-color: #E0E0E0;  
    background-color: #F5F5F5;  
  
}  
  
#jqxgrid .jqx-grid-column-header {  
  
    border-color: #E0E0E0;  
    background-color: #F5F5F5;  
  
}  
  
.clear_zero {  
  
    height:0px;
```

```

}

/* Styles for Popup Charts */

.tpd-size-large {

    margin:0px;
    padding: 0px;
}

.popup_window_wrapper {

    margin:15px;

}

.popup_stock_name {

    font-size:16px;
    font-weight:bold;
    margin:5px;

}

.popup_stock_attributes {

    font-size:13px;
    font-weight:bold;
    margin:5px;

}

.popup_stock_description {

    font-size:12px;
    margin:5px;

}

.jqx-input {

    font-size:14px;

}

.jqx-menu-item {

    font-size:14px;

}

.jqx-input {

    padding:5px 10px;

}

.nav-tabs {
    border: 1px solid #E0E0E0;
    background-color:#F5F5F5;
    padding: 3px 5px 0px 5px;
    margin: 0px 0px 10px 0px;
}

.nav-tabs>li>a {
    font-size:13px;
    padding:7px 11px;
    font-weight:600;
    margin-right: 0px;
    line-height: 1.42857143;
    border: 0px;
    border-radius: 0px 0px 0 0;
    background-color:#F5F5F5;
}

.nav-tabs>li>a .active {
    margin-right: 0px;
    line-height: 1.42857143;
    border: 1px solid #E0E0E0;
    border-radius: 0px 0px 0 0;
    background-color:#F5F5F5;
}

.nav-tabs>li>a: hover {

```

```

        background-color: #F5F5F5;
        text-decoration: underline;
    }

.donate_buttons {

    margin-left:20px;

}

.modal-body {

    margin:10px 40px 20px 40px;
    text-align:left;
    font-size:18px;

}

.modal-body li {

    margin-top:20px;
    font-size:14px;

}

.modal_title {

    text-align:center;
    margin-bottom:30px;

}

.modal-body th{

    margin-left:10px;
    font-size:14px;

}

.modal-body td {

    color: #337ab7;
    margin-left:10px;
    font-size:14px;

}

.modal_button {

    margin-top:50px;
    text-align:center;
    font-size:16px;

}

</style>
</link>
</link>
</link>
</link>
</meta>
</meta>
</meta>
</meta>
</meta>
</meta>
</head>
<body class="fuelux">
<!--[if lt IE 7]>
    <p class="browsehappy">You are using an <strong>outdated</strong> browser. Please <a href="https://browsehappy.com/">upgrade your brow
ser</a> to improve your experience.</p>
<![endif]-->
<div class="header_content_container container-fluid">
<div class="header_parent_container">
<div class="header_container">
<div class="header_logo col-xs-2">
<a class="logo" href="https://www.macrotrends.net" title="MacroTrends Home Page">

</a>
</div>
<div class="col-xs-1 pull-right" style="padding-top:8px; margin-right:10px; margin-left:0px; padding-left:0px;">
<div id="ic_88x31_1">
</div>
</div>
<div class="col-xs-5 pull-right" style="padding-top:8px;">
<form>
<div class="typeahead__container">
<div class="typeahead__field">
<span class="typeahead__query">
<input autocomplete="off" autofocus="" class="js-typeahead" name="q" placeholder="Search over 200,000 charts..." type="search"/>

```

```
</span>
<span class="typeahead__button">
  <button type="submit">
    <span class="typeahead__search-icon">
      </span>
    </button>
  </span>
</div>
</div>
</form>
</div>
</div>
</div>
<div class="menu_parent_container">
  <div class="menu_container">
    <a href="/stocks/stock-screener">
      <div class="menu_item">
        Stock Screener
      </div>
    </a>
    <a href="/stocks/research">
      <div class="menu_item">
        Stock Research
      </div>
    </a>
    <a href="/charts/stock-indexes">
      <div class="menu_item">
        Market Indexes
      </div>
    </a>
    <a href="/charts/precious-metals">
      <div class="menu_item">
        Precious Metals
      </div>
    </a>
    <a href="/charts/energy">
      <div class="menu_item">
        Energy
      </div>
    </a>
    <a href="/charts/commodities">
      <div class="menu_item">
        Commodities
      </div>
    </a>
    <a href="/charts/exchange-rates">
      <div class="menu_item">
        Exchange Rates
      </div>
    </a>
    <a href="/charts/interest-rates">
      <div class="menu_item">
        Interest Rates
      </div>
    </a>
    <a href="/charts/economy">
      <div class="menu_item">
        Economy
      </div>
    </a>
    <a href="/countries/topic-overview">
      <div class="menu_item">
        Global Metrics
      </div>
    </a>
  </div>
</div>
</div>
<div class="main_content_container container-fluid" id="main_content_container">
  <div class="adx_top_ad col-xs-12" id="ic_leaderboard" style="margin: 20px 20px 30px 20px; min-height:265px; text-align:center;">
    <div id="IC_D_970x250_1">
      <!--Smartad # 4058: Macrotrends - 970x250 Image - Placement 2-->
      <!--<iframe id="dianomi_leaderboard" WIDTH="970" HEIGHT="250" SCROLLING="NO" src="//www.dianomi.com/smartads/epl?id=4058" style="height: 250p
x; border: none; overflow: hidden;"></iframe>-->
    </div>
    <div style="margin:20px 20px 20px 5px;">
      <h2 style="margin-left:0px; font-weight:600; color:#444;">
        Tesla Revenue 2010-2022 | TSLA
      </h2>
    </div>
  </div>
  <div class="sub_main_content_container">
    <div id="main_content">
      <div class="navigation_tabs" style="margin-bottom:20px;">
        <ul class="nav nav-tabs" id="myTabs" style="font-size:15px;">
          <li>
            <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/stock-price-history">
              Prices
            </a>
          </li>
        </ul>
      </div>
    </div>
  </div>
</div>
```

```

    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/financial-statements">
      Financials
    </a>
  </li>
  <li class="active">
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue">
      Revenue & Profit
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/total-assets">
      Assets & Liabilities
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/profit-margins">
      Margins
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/pe-ratio">
      Price Ratios
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/current-ratio">
      Other Ratios
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/dividend-yield-history">
      Other Metrics
    </a>
  </li>
</ul>
<ul class="nav nav-tabs" id="myTabs" style="font-size:15px;">
  <li class="active">
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue">
      Revenue
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/gross-profit">
      Gross Profit
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/operating-income">
      Operating Income
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/ebitda">
      EBITDA
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/net-income">
      Net Income
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/eps-earnings-per-share-diluted">
      EPS
    </a>
  </li>
  <li>
    <a href="https://www.macrotrends.net/stocks/charts/TSLA/tesla/shares-outstanding">
      Shares Outstanding
    </a>
  </li>
</ul>
</div>
<div style="background-color:#fff; margin: 0px 0px 20px 0px; padding:20px 30px; border:1px solid #dfdfdf;">
  <span style="color:#444; line-height: 1.8;">
    Tesla annual/quarterly revenue history and growth rate from 2010 to 2022. Revenue can be defined as the amount of money a company receives from its customers in exchange for the sales of goods or services. Revenue is the top line item on an income statement from which all costs and expenses are subtracted to arrive at net income.
    <ul style="margin-top:10px;">
      <li>
        Tesla revenue for the quarter ending September 30, 2022 was
        <strong>
          $21.454B
        </strong>
      </li>
    </ul>
  </div>

```

Tesla annual/quarterly revenue history and growth rate from 2010 to 2022. Revenue can be defined as the amount of money a company receives from its customers in exchange for the sales of goods or services. Revenue is the top line item on an income statement from which all costs and expenses are subtracted to arrive at net income.

```

<ul style="margin-top:10px;">
  <li>
    Tesla revenue for the quarter ending September 30, 2022 was
    <strong>
      $21.454B
    </strong>
  </li>
</ul>

```



```

        <strong>
            55.95% increase
        </strong>
        year-over-year.
    </li>
</li>
<li>
    Tesla revenue for the twelve months ending September 30, 2022 was
    <strong>
        $74.863B
    </strong>
    , a
    <strong>
        59.8% increase
    </strong>
    year-over-year.
</li>
<li>
    Tesla annual revenue for 2021 was
    <strong>
        $53.823B
    </strong>
    , a
    <strong>
        70.67% increase
    </strong>
    from 2020.
</li>
<li>
    Tesla annual revenue for 2020 was
    <strong>
        $31.536B
    </strong>
    , a
    <strong>
        28.31% increase
    </strong>
    from 2019.
</li>
<li>
    Tesla annual revenue for 2019 was
    <strong>
        $24.578B
    </strong>
    , a
    <strong>
        14.52% increase
    </strong>
    from 2018.
</li>
</ul>
</span>
</div>
<div style="background-color:#fff; margin: 30px 0px 30px 0px; text-align:center; min-height:90px;">
    <div id="ic_728x90_1" style="margin:10px 20px;">
    </div>
</div>
<div class="ticker_search_box" style="text-align:center;">
    <div style="width:400px; margin-left:20px; border-bottom:none;">
    <script type="text/javascript">
        $(document).ready(function () {

            var url = "https://www.macrotrends.net/assets/php/ticker_search_list.php";

            // prepare the data
            var source =
            {
                datatype: "json",
                datafields: [
                    { name: 'n' },
                    { name: 's' }
                ],
                url: url
            };
            var dataAdapter = new $.jqx.dataAdapter(source);
            // Create a jqxInput
            $("#jqxInput").jqxInput({ source: dataAdapter, minLength: 1, placeholder: "Search for ticker or company name...", items: 20, searchMode: 'containsignorecase', displayMember: "n", valueMember: "s", width: '100%', height: 22, theme: 'bootstrap'});
            $("#jqxInput").on('select', function (event) {
                if (event.args) {
                    var item = event.args.item;

                    //Have to split the ticker and slug back out since jqxinput only seems to allow one data value
                    var itemArray = item.value.split("\");
                    var ticker = itemArray[0];
                    var slug = itemArray[1];

                    if (item) {

```

ug + "/revenue";

```

    }
  });
});
</script>
<input autocomplete="off" id="jqxInput">
</input>
</div>
<div style="width:280px; margin-top: -32px; margin-left:80px; border-bottom:none; float:right;">
  <button class="chart_buttons btn btn-success btn-sm" id="compareStocks" style="margin-right:15px;">
    <span class="glyphicon glyphicon-stats">
    </span>
    <strong>
      Compare Tesla With Other Stocks
    </strong>
  </button>
</div>
</div>
<div style="height:690px; background-color:#fff; border:1px solid #dfdfdf;">
  <iframe frameborder="0" height="680" hspace="0" id="chart_iframe" margin="0px" marginheight="0" marginwidth="0" scrolling="NO" src="https://
www.macrotrends.net/assets/php/fundamental_iframe.php?t=TESLA&amp;type=revenue&amp;statement=income-statement&amp;freq=Q" title="Interactive chart:
Tesla Revenue 2010-2022 | Tesla" valign="middle" vspace="0" width="800">
  </iframe>
</div>
<div id="ic_video_ad" style="height:317px; margin:30px;">
  <div id="IC_D_3x6">
  </div>
</div>
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          <span style="font-size:14px;">
            (Millions of US $)
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        <tr>
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  Market Cap
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  Revenue
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  </a>
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    Auto Manufacturers - Domestic
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<td colspan="4" style="padding:15px;">
  Tesla is the market leader in battery-powered electric car sales in the United States, with roughly 70% market share. The company's flagship Model 3 is the best-selling EV model in the United States. Tesla, which has managed to garner the reputation of a gold standard over the years, is now a far bigger entity than what it started off since its IPO in 2010, with its market cap crossing $1 trillion for the first time in October 2021. The EV king's market capitalization is more than the combined value of legacy automakers including Toyota, Volkswagen, Daimler, General Motors and Ford. Over the years, Tesla has shifted from developing niche products for affluent buyers to making more affordable EVs for the masses. The firm's three-pronged business model approach of direct sales, servicing, and charging its EVs sets it apart from other carmakers. Tesla, which is touted as the clean energy revolutionary automaker, is much more than just a car manufacturer.
</td>
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  PE Ratio
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United States
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Lightning EMotors (ZEV)
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</div>
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<div style="margin:0px; padding: 20px; width:300px; background-color: #01579b; min-height:150px; text-align:center;">

<h2 style="font-weight:600;">Try our new<br />stock screener!</h2></a>

</div>
</a-->
<!--<div style="margin-top:0px; min-height:250px;">

<script src="//ads.investingchannel.com/adtags/MacroTrends/fundamentalanalysis/300x600.js?zhpos=300_2&multi_size=false' type='text/javascript' charset='utf-8'></script>

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<footer class="footer">
  <span>
    © 2010-2022 Macrotrends LLC
  </span>
  |
  <a href="/terms">
    Terms of Service
  </a>
  |
  <a href="/privacy">
    Privacy Policy
  </a>
  |
  <a href="mailto:%69n%66o@%6Dac%72otrends%2En%65t">
    Contact Us
  </a>
  |
  <a href="/ccpa">
    Do Not Sell My Personal Information
  </a>
<br/>
<span>
  Fundamental data from
</span>
<a href="https://www.zacksdata.com" rel="nofollow" target="_blank">
  Zacks Investment Research, Inc.
</a>
</footer>
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    <div class="modal-content">
      <div class="modal-body">
        <div class="modal_title">
          <h2>
            <strong>
              We Need Your Support!
            </strong>
          </h2>
        </div>
        <p>
          Backlinks from other websites are the lifeblood of our site and a primary source of new traffic.
        <p>
          If you use our chart images on your site or blog, we ask that you provide attribution via a "dofollow" link back to this page. We have provided a few examples below that you can copy and paste to your site:
        <br/>
        <table class="table">
          <thead>
            <tr>
              <th>
                Link Preview
              </th>
              <th>
                HTML Code (Click to Copy)
              </th>
            </tr>
          </thead>
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                  Tesla Revenue 2010-2022 | TSLA
                </a>
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              <td>
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              <td>
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                  Macrotrends
                </a>
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Source
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Your image export is now complete. Please check your download folder.
</p>
</p>
</p>
</div>
<div class="modal-footer">
<button class="btn btn-primary" data-dismiss="modal" type="button">
Close Window
</button>
</div>
</div>
</div>
<div aria-hidden="true" aria-labelledby="exampleModalLabel" class="modal" id="smallWidthModal2" role="dialog" tabindex="-1">
<div class="modal-dialog modal-lg">
<div class="modal-content">
<div class="modal-body">
<div class="modal_title">
<h2>
<strong>
We Need Your Support!
</strong>
</h2>
</div>
<p>
Backlinks from other websites are the lifeblood of our site and a primary source of new traffic.
<p>
<p>
If you use our datasets on your site or blog, we ask that you provide attribution via a "dofollow" link back to this page. We have provided a few examples below that you can copy and paste to your site:
</p>
<br/>
<table class="table">
<thead>
<tr>
<th>
Link Preview
</th>
<th>
HTML Code (Click to Copy)
</th>
</tr>
</thead>
<tbody>
<tr>
<td>
<a>
Tesla Revenue 2010-2022 | TSLA
</a>
</td>
<td>
<input class="modal_link" size="50" type="text" value="&lt;a href='https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue'&gt;Tesla Revenue 2010-2022 | TSLA&lt;/a&gt;"/>
</td>
</tr>
<tr>
<td>
<a>
Macrotrends
</a>
</td>
<td>
<input class="modal_link" size="50" type="text" value="&lt;a href='https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue'&gt;Macrotrends&lt;/a&gt;"/>
</td>
</tr>
<tr>
<td>
<a>
Source
</a>
</td>
</tr>
</tbody>
</table>
```

```

        <td>
            <input class="modal_link" size="50" type="text" value="&lt;a href='https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue'&gt;So
urce&lt;/a&gt;"/>
        </td>
    </tr>
</tbody>
</table>
<br/>
<p style="text-align:center">
    Your data export is now complete. Please check your download folder.
</p>
</p>
</p>
</div>
<div class="modal-footer">
    <button class="btn btn-primary" data-dismiss="modal" type="button">
        Close Window
    </button>
</div>
</div>
</div>
</div>
<script type="text/javascript">
    $.typeahead({
        input: '.js-typeahead',
        minLength: 1,
        filter: false, //Disables typeahead filter to just show everything in the results from the database
        debug: false,
        highlight: true,
        maxItem: 10,
        dynamic: true,
        delay: 200,
        searchOnFocus: true,
        backdrop: {
            "background-color": "#fff"
        },
        href: "{{url}}",
        emptyTemplate: "no result for {{query}}",
        display: ["name"],
        source: {
            users: {
                ajax: {
                    url: '/assets/php/all_pages_query.php',
                    data: {
                        q: '{{query}}'
                    }
                }
            }
        }
    });
</script>
<script>
    // /*! js-cookie v3.0.0-rc.1 | MIT */
    // !function(e,t){"object"==typeof exports&&"undefined"!=typeof module?module.exports=t():"function"==typeof define&&define.amd?define(t):
(e=e||self,function(){var n=e.Cookies,r=e.Cookies=t();r.noConflict=function(){return e.Cookies=n,r}})(this,function(){function e
(e){for(var t=1;t<arguments.length;t++){var n=arguments[t];for(var r in n)e[r]=n[r]}return e}var t={read:function(e){return e.replace(/(%[\dA-F]
{2})+/gi,decodeURIComponent)},write:function(e){return encodeURIComponent(e).replace(/%(2[346BF]|3[AC-F]|40|5[BDE]|60|7[BCD])/g,decodeURIComponen
t)};return function n(r,o){function i(t,n,i){if("undefined"!=typeof document){if("number"==typeof(i=e({},o,i)).expires&&(i.expires=new Date(Date.now
()+864e5*i.expires)),i.expires&&(i.expires=i.expires.toUTCString()),t=encodeURIComponent(t).replace(/%(2[346B]|5E|60|7C)/g,decodeURIComponent).rep
lace(/([()]/g,escape),n=r.write(n,t);var c="";for(var u in i)i[u]&&(c+=" "+u,!0!==i[u]&&(c+="="+i[u].split(";")[0]));return document.cookie=t+"="+
n+c}}return Object.create({set:i,get:function(e){if("undefined"!=typeof document&&(arguments.length|e))){for(var n=document.cookie?document.cookie
e.split("; "):[],o={},i=0;i<n.length;i++){var c=n[i].split("="),u=c.slice(1).join("=");''===u[0]&&(u=u.slice(1,-1));try{var f=t.read(c[0]);if(o
[f]=r.read(u,f),e===f)break}catch(e){}}return e?o[e]:o}},remove:function(t,n){i(t,"",e({},n,{expires:-1})),withAttributes:function(t){return n(th
is.converter,e({},this.attributes,t)),withConverter:function(t){return n(e({},this.converter,t),this.attributes)},attributes:{value:Object.free
ze(o),converter:{value:Object.freeze(r)}})}(t,{path:"/"}))};

    // // Cookie Settings
    // var maxCookieValue = 4, initCookie = 1, expirationDays = 1;
    // var cookieName = "session_pageviews";
    // var getCookie = Cookies.get(cookieName);

    // // Under the Hood
    // if (getCookie == null) {
    //     Cookies.set(cookieName, initCookie, { expires: expirationDays });
    //     console.log('Cookie set to value 1');
    //     $( "#ic_video_ad" ).append( "<div id='IC_D_3x6' style='margin:30px;'></div>" );
    // } else {
    //     // if (getCookie >= initCookie && getCookie < maxCookieValue) {
    //         // getCookie++;
    //         Cookies.set(cookieName, getCookie, { expires: expirationDays });
    //         console.log('Cookie incremented. New value is ' + getCookie);
    //         $( "#ic_video_ad" ).append( "<div id='IC_D_3x6' style='margin:30px;'></div>" );
    //     }
    //     // else if (getCookie >= maxCookieValue && getCookie < 7) {
    //         // getCookie++;
    //         Cookies.set(cookieName, getCookie, { expires: expirationDays });
    //         console.log('Cookie max allowed value reached. No video ads showing. New value is ' + getCookie);
    //     }
    // }

```

```

        // //Cookies.remove(cookieName);
        // // if cookie is equal with the number you've set, then do something
        // // hide an element, delete the cookie etc...
    // }
    // else if (getCookie >= 7) {
    //     Cookies.remove(cookieName);
    //     // // if cookie is equal with the number you've set, then do something
    //     // hide an element, delete the cookie etc...
    // }
}
</script>
<script>
$(document).ready(function() {

    var user_data = '171.76.81.154';          var country_code = 'United States';
    $.post('https://www.macrotrends.net/assets/php/user_frequency_tracking.php', {user_ip: user_data, user_country: country_code});

    // Selects all of the text in the chart export window when clicked
    $(".modal_link").focus(function() {
        var $this = $(this);
        $this.select();

        // Work around Chrome's little problem
        $this.mouseup(function() {
            // Prevent further mouseup intervention
            $this.unbind("mouseup");
            return false;
        });
    });

    $('[data-toggle="tooltip"]').tooltip();

    $('.statement_type_select').select2({
        theme: "classic",
        minimumResultsForSearch: 20
    });

    $('.frequency_select').select2({
        theme: "classic",
        minimumResultsForSearch: 20
    });

});

$( "#compareStocks" ).click(function() {

    window.location.href = '/stocks/stock-comparison?s=revenue&axis=single&comp=TESLA';

});

$( "#chartExport" ).click(function() {

    window.$('#smallWidthModal1').modal();

    //Turn off scroll bar for image export
    chart.chartScrollbarSettings.enabled = false;
    chart.validateNow();

    chart.export.capture({},function() {
        this.toPNG({},function(data) {
            // Download the image to the browser
            this.download( data, "image/png", "TESLA-revenue-2022-12-09-macrotrends.png" );
        });

        //Turn scroll bar back on again
        chart.chartScrollbarSettings.enabled = true;
        chart.validateNow();
    });

});

});

$( ".statement_type_select" ).change(function() {

    window.location.href = 'https://testing.macrotrends.net/assets/php/income_statement_testing.php?t=ZEV&type=' + this.value + '&freq=Q';

});

```

```

$( ".frequency_select" ).change(function() {

    window.location.href = '/assets/php/new_chart_page.php?t=ZEV&type=revenue&freq=' + this.value;

});
</script>
<!--<div class="modal" id="contribute_modal" tabindex="-1" role="dialog" aria-labelledby="exampleModalLabel" aria-hidden="false">
<div class="modal-dialog modal-lg">
    <div class="modal-content">
        <div class="modal-body" style="margin:20px 40px 20px 40px; text-align:left;font-size:18px;">

<div class="row">

<div class="col-xs-6">

&ltscript src="https://donorbox.org/widget.js" paypalExpress="true"></script><iframe src="https://donorbox.org/embed/macrotrends-donations?hide_donation_meter=true" height="685px" width="100%" style="max-width:500px; min-width:310px; max-height:none!important" seamless="seamless" name="donorbox" frameborder="0" scrolling="no" allowpaymentrequest></iframe>

</div>

<div class="col-xs-6">

        <div class="modal_title"><h1><strong>We Need Your Support!</strong></h1></div>

        <p><strong>Macrotrends has been subscription-free since 2010 and we want to keep it that way.</strong></p>

<p>Our goal has always been to serve as an easily accessible, high quality source of investment research for both professionals and amateurs alike.</p>

<p>Any amount that you can contribute will help ensure we can keep the site completely free for many years to come.</p>

<p style="margin-top:20px;">Regards,</p>
<p>The Macrotrends Team</p>

</div>

</div>

</div>

        <div class="modal-footer" style="text-align:center;">
            <button type="button" class="btn btn-success" data-dismiss="modal">Maybe Next Time...</button>
        </div>
    </div>
</div>
</div>

<script src="/ads.js" type="text/javascript"></script>

<script>

$(document).ready(function() {

    var botPattern = "(googlebot|Googlebot-Mobile|Googlebot-Image|Google favicon|Mediapartners-Google|bingbot|slurp|java|wget|curl|Commons-HttpClient|Python-urllib|libwww|httpunit|nutch|phpcraw|msnbot|jyrobot|FAST-WebCrawler|FAST Enterprise Crawler|biglotron|teoma|convera|seekbot|gigablast|exabot|ngbot|ia_archiver|GingerCrawler|webmon |httrack|webcrawler|grub.org|UsineNouvelleCrawler|antibot|netresearchserver|speedy|fluffy|bibnum.bnf|findlink|msrbot|panscient|yacybot|AISearchBot|IOI|ips-agent|tagoobot|MJ12bot|dotbot|worioobot|yanga|buzzbot|mlbot|yandexbot|purebot|LingueeBot|Voyager|CyberPatrol|voilabot|baiduspider|citeseekxbot|spbot|twengabot|postrank|turnitinbot|scribdbot|page2rss|sitebot|linkdex|Adidxbot|blekkbot|ezooms|dotbot|Mail.RU_Bot|discobot|heritrix|findthatfile|europarchive.org|NerdByNature.Bot|sistrix crawler|ahrefsbot|Aboundex|domaincrawler|wbsresearchbot|summify|ccbot|edisterbot|seznambot|ec2linkfinder|gs1fbot|aihitbot|intelium_bot|facebookexternalhit|yeti|RetrevoPageAnalyzer|lb-spider|sogou|lssbot|careerbot|wotbox|wocbot|ichiro|DuckDuckBot|lssrocketcrawler|drupact|webcompanycrawler|acoonbot|openindexspider|gnam gnam spider|web-arch-ive-net.com.bot|backlinkcrawler|coccoc|integromedb|content crawler spider|toplistbot|seokicks-robot|it2media-domain-crawler|ip-web-crawler.com|siteexplorer.info|elisabot|proximic|changedetection|blexbot|arabot|WeSEE:Search|niki-bot|CrystalSemanticsBot|rogerbot|360Spider|psbot|InterfaxScanBot|Lipperhey SEO Service|CC Metadata Scaper|g00gle.net|GrapeshotCrawler|urlappendbot|brainobot|fr-crawler|binlar|SimpleCrawler|Livelapbot|Twitterbot|cXensebot|smtbot|bnf.fr_bot|A6-Indexer|ADMantX|Facebot|Twitterbot|OrangeBot|memorybot|AdvBot|MegaIndex|SemanticScholarBot|ltx71|nerdybot|xovibot|BUBiNG|Qwantify|archive.org_bot|Applebot|TweetmemeBot|crawler4j|findxbot|SemrushBot|yoozBot|lipperhey|y!j-asr|Domain Re-Animator Bot|AddThis)";

    var re = new RegExp(botPattern, 'i');

    if (re.test(navigator.userAgent)) {

    } else {

        //Check to see whether they are running an ad blocker
        if(document.getElementById('12mORwMnaEkJX1xz')){
            var ad_blocker = 'N';
        } else {
            var ad_blocker = 'Y';
        }

        $.post('https://api.ipstack.com/check?access_key=14fe63e83d5cfe0b3d4cec498479ba&output=json&fields=ip,continent_name,country_name,region_name,city',
            function(ip_data){

```



```

$.post('https://www.macrotrends.net/assets/php/page_view_tracking.php', {ip: ip_data.ip, continent: ip_data.continent_name,
country: ip_data.country_name, state: ip_data.region_name, city: ip_data.city, screen_width: screen.width, ads: ad_blocker, page_type: 'stock'},
function(data){
    /*
    if(data % 20 === 0) {

        //$('#contribute_modal').modal();

    }
    */
});

});

}

});

$.post('https://api.ipstack.com/check?access_key=14fe63e83d5cfefa0b3d4cec498479ba&output=json&fields=ip,continent_name,country_name,region_name,city',
function(ip_data){

    $(".contribute_user_id").val(ip_data.ip);

});

$( ".donate_buttons" ).click(function() {

    var payment = $(this).attr("value");

    $.post('https://api.ipstack.com/check?access_key=14fe63e83d5cfefa0b3d4cec498479ba&output=json&fields=ip,continent_name,country_name,region_name,city',
        function(ip_data){

            $.post('https://www.macrotrends.net/assets/php/page_view_tracking.php', {ip: ip_data.ip, paid: payment});

        });

});

</script>

-->
<script type="text/javascript">
    var clicky_site_ids = clicky_site_ids || [];
clicky_site_ids.push(100827248);
(function() {
    var s = document.createElement('script');
    s.type = 'text/javascript';
    s.async = true;
    s.src = '//static.getclicky.com/js';
    ( document.getElementsByTagName('head')[0] || document.getElementsByTagName('body')[0] ).appendChild( s );
})();
</script>
<noscript>
    <p>
        
    </p>
</noscript>
<!-- This site is converting visitors into subscribers and customers with OptinMonster - https://optinmonster.com -->
<!-- <script type="text/javascript" src="https://a.omappapi.com/app/js/api.min.js" data-account="6392" data-user="15772" async></script> -->
<!-- / OptinMonster -->
</body>
</html>

```

Using `BeautifulSoup` or the `read_html` function extract the table with `Tesla Revenue` and store it into a dataframe named `tesla_revenue`. The dataframe should have columns `Date` and `Revenue`.

► [Click here if you need help locating the table](#)

```
In [27]: import pandas as pd
```

```
In [33]: tables = soup.find_all('table')
for index, table in enumerate(tables):
    if ("Tesla Quarterly Revenue" in str(table)):
        table_index = index
tesla_revenue = pd.DataFrame(columns=["Date", "Revenue"])
for row in tables[table_index].tbody.find_all("tr"):
    col = row.find_all("td")
    if (col != []):
        Date = col[0].text
        Revenue = col[1].text.replace("$", "").replace(",", "")
        tesla_revenue = Tesla_revenue.append({"Date": Date, "Revenue": Revenue}, ignore_index=True)
```

In []:

Execute the following line to remove the comma and dollar sign from the `Revenue` column.

```
In [31]: tesla_revenue["Revenue"] = tesla_revenue["Revenue"].str.replace(',|\$', '')
```

/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages/ipykernel_launcher.py:1: FutureWarning: The default value of regex will change from True to False in a future version.

"""Entry point for launching an IPython kernel.

Execute the following lines to remove an null or empty strings in the Revenue column.

```
In [34]: tesla_revenue.dropna(inplace=True)

tesla_revenue = tesla_revenue[tesla_revenue["Revenue"] != ""]
```

Display the last 5 row of the `tesla_revenue` dataframe using the `tail` function. Take a screenshot of the results.

```
In [35]: tesla_revenue = Tesla_revenue[Tesla_revenue["Revenue"] != ""]
tesla_revenue
```

Out[35]:

	Date	Revenue
0	2022-09-30	21454
1	2022-06-30	16934
2	2022-03-31	18756
3	2021-12-31	17719
4	2021-09-30	13757
5	2021-06-30	11958
6	2021-03-31	10389
7	2020-12-31	10744
8	2020-09-30	8771
9	2020-06-30	6036
10	2020-03-31	5985
11	2019-12-31	7384
12	2019-09-30	6303
13	2019-06-30	6350
14	2019-03-31	4541
15	2018-12-31	7226
16	2018-09-30	6824
17	2018-06-30	4002
18	2018-03-31	3409
19	2017-12-31	3288
20	2017-09-30	2985
21	2017-06-30	2790
22	2017-03-31	2696
23	2016-12-31	2285
24	2016-09-30	2298
25	2016-06-30	1270
26	2016-03-31	1147
27	2015-12-31	1214
28	2015-09-30	937
29	2015-06-30	955
30	2015-03-31	940
31	2014-12-31	957
32	2014-09-30	852
33	2014-06-30	769
34	2014-03-31	621
35	2013-12-31	615
36	2013-09-30	431
37	2013-06-30	405
38	2013-03-31	562
39	2012-12-31	306
40	2012-09-30	50
41	2012-06-30	27
42	2012-03-31	30
43	2011-12-31	39
44	2011-09-30	58
45	2011-06-30	58
46	2011-03-31	49
47	2010-12-31	36
48	2010-09-30	31

	Date	Revenue
49	2010-06-30	28
50	2010-03-31	21
52	2009-09-30	46
53	2009-06-30	27

```
In [36]: tesla_revenue.tail()
```

```
Out[36]:
```

	Date	Revenue
48	2010-09-30	31
49	2010-06-30	28
50	2010-03-31	21
52	2009-09-30	46
53	2009-06-30	27

Question 3: Use yfinance to Extract Stock Data

Using the `Ticker` function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is GameStop and its ticker symbol is `GME`.

```
In [37]: gme = yf.Ticker("GME")
```

Using the ticker object and the function `history` extract stock information and save it in a dataframe named `gme_data`. Set the `period` parameter to `max` so we get information for the maximum amount of time.

```
In [38]: gme_data = gme.history(period="max")
```

Reset the index using the `reset_index(inplace=True)` function on the `gme_data` DataFrame and display the first five rows of the `gme_data` dataframe using the `head` function. Take a screenshot of the results and code from the beginning of Question 3 to the results below.

```
In [40]: gme_data.reset_index(inplace=True)
gme_data.head()
```

```
Out[40]:
```

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2002-02-13	1.620128	1.693350	1.603296	1.691666	76216000	0.0	0.0
1	2002-02-14	1.712707	1.716074	1.670626	1.683250	11021600	0.0	0.0
2	2002-02-15	1.683250	1.687458	1.658002	1.674834	8389600	0.0	0.0
3	2002-02-19	1.666417	1.666417	1.578047	1.607504	7410400	0.0	0.0
4	2002-02-20	1.615921	1.662210	1.603296	1.662210	6892800	0.0	0.0

Question 4: Use Webscraping to Extract GME Revenue Data

Use the `requests` library to download the webpage <https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/stock.html>. Save the text of the response as a variable named `html_data`.

```
In [41]: url=" https://cf-courses-data.s3.us.cloud-object-storage.appdomain.ccloud/IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/stock.html"
```

Parse the html data using `beautiful_soup`.

```
In [42]: html_data=requests.get(url).text
soup = BeautifulSoup(html_data, 'html.parser')
```

Using `BeautifulSoup` or the `read_html` function extract the table with `GameStop Revenue` and store it into a dataframe named `gme_revenue`. The dataframe should have columns `Date` and `Revenue`. Make sure the comma and dollar sign is removed from the `Revenue` column using a method similar to what you did in Question 2.

► Click here if you need help locating the table

```
In [44]: gme_revenue = pd.DataFrame(columns = ["Date", "Revenue"])

for table in soup.find_all('table'):
    if table.find('th').getText().startswith("GameStop Quarterly Revenue"):
        for row in table.find("tbody").find_all("tr"):
            col = row.find_all("td")
            if len(col) != 2: continue
            Date = col[0].text
```

```
Revenue = col[1].text.replace("$", "").replace(", ", "")
```

```
gme_revenue = gme_revenue.append({"Date":Date, "Revenue":Revenue}, ignore_index=True)
```

Display the last five rows of the `gme_revenue` dataframe using the `tail` function. Take a screenshot of the results.

```
In [45]: gme_revenue.tail(5)
```

```
Out[45]:
```

	Date	Revenue
57	2006-01-31	1667
58	2005-10-31	534
59	2005-07-31	416
60	2005-04-30	475
61	2005-01-31	709

```
In [48]: def make_graph(stock_data, revenue_data, stock):
    fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price", "Historical Revenue"), vertical_spacing = .3
    stock_data_specific = stock_data[stock_data.Date <= '2021-06-14']
    revenue_data_specific = revenue_data[revenue_data.Date <= '2021-04-30']
    fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data_specific.Date, infer_datetime_format=True), y=stock_data_specific.Close.astype("float"),
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data_specific.Date, infer_datetime_format=True), y=revenue_data_specific.Revenue.astype("float"),
    fig.update_xaxes(title_text="Date", row=1, col=1)
    fig.update_xaxes(title_text="Date", row=2, col=1)
    fig.update_yaxes(title_text="Price ($US)", row=1, col=1)
    fig.update_yaxes(title_text="Revenue ($US Millions)", row=2, col=1)
    fig.update_layout(showlegend=False,
    height=900,
    title=stock,
    xaxis_rangeslider_visible=True)
    fig.show()
```

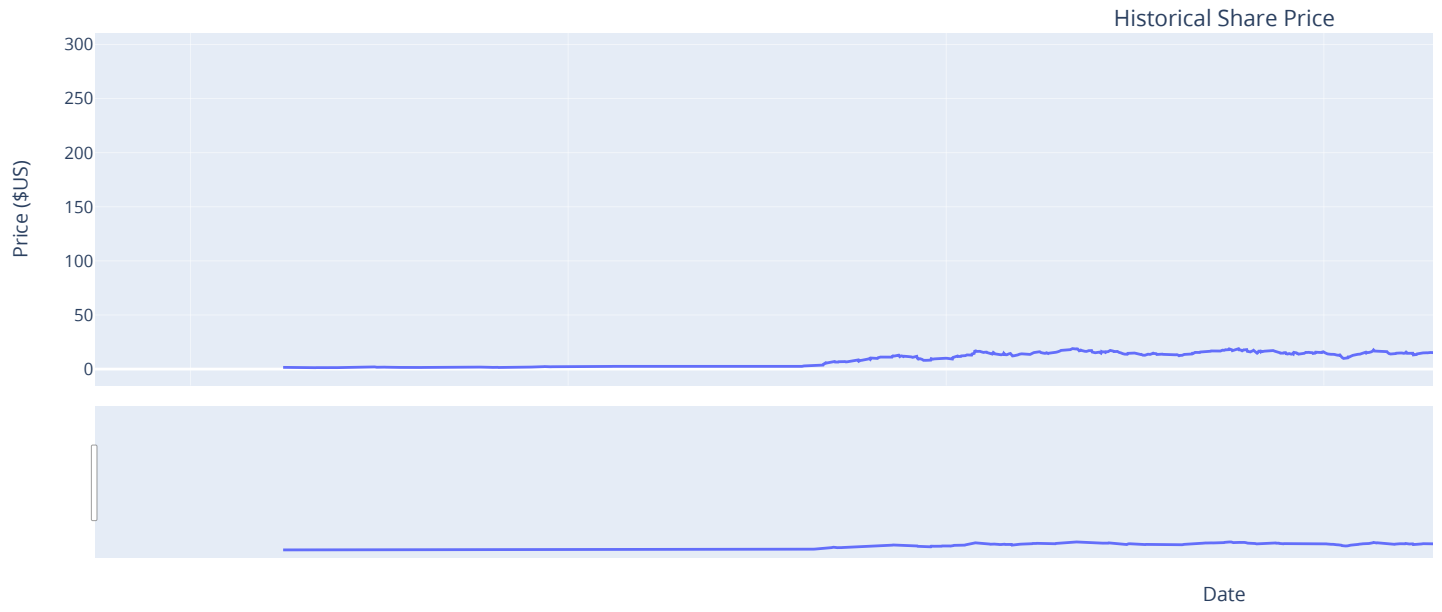
Question 5: Plot Tesla Stock Graph

Use the `make_graph` function to graph the Tesla Stock Data, also provide a title for the graph. The structure to call the `make_graph` function is `make_graph(tesla_data, tesla_revenue, 'Tesla')`. Note the graph will only show data upto June 2021.

```
In [50]: import pandas as pd
import yfinance as yf
from plotly.subplots import make_subplots
import plotly.graph_objs as go
```

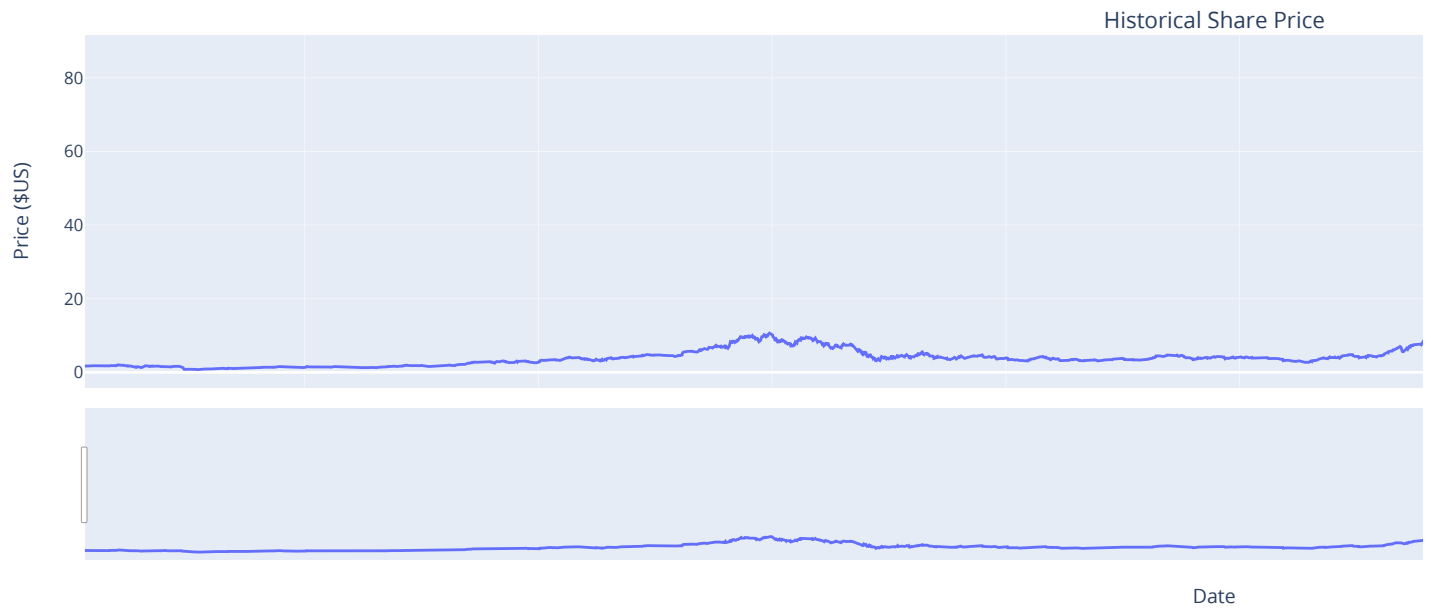
```
In [52]: make_graph(tesla_data, tesla_revenue, 'Tesla')
```

Tesla



```
In [53]: make_graph(gme_data, gme_revenue, 'GameStop')
```

GameStop



Question 6: Plot GameStop Stock Graph

Use the `make_graph` function to graph the GameStop Stock Data, also provide a title for the graph. The structure to call the `make_graph` function is `make_graph(gme_data, gme_revenue, 'GameStop')`. Note the graph will only show data upto June 2021.

In []:

About the Authors:

[Joseph Santarcangelo](#) has a PhD in Electrical Engineering, his research focused on using machine learning, signal processing, and computer vision to determine how videos impact human cognition. Joseph has been working for IBM since he completed his PhD.

Azim Hirjani

Change Log

Date (YYYY-MM-DD)	Version	Changed By	Change Description
2022-02-28	1.2	Lakshmi Holla	Changed the URL of GameStop
2020-11-10	1.1	Malika Singla	Deleted the Optional part
2020-08-27	1.0	Malika Singla	Added lab to GitLab

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