

# September 11 PDF File

September 11, 2024

## 1 Technical Analysis Techniques

write description for bollinger bands

### 1.0.1 Import Packages

```
[ ]: # download yfinance API as the way to get historical data
import yfinance as yf

# import numpy for mathematical functions
import numpy as np

# import matplotlib for plotting
import matplotlib.pyplot as plt

# import pandas for dataframe functions
import pandas as pd
```

### 1.0.2 Functions for Downloading Data

- 'get\_data\_from\_start\_to\_end': Load in the data from YFinance API
- 'download\_stock\_data\_for\_periods': Look at different periods to understand how technical analysis changes throughout changes in macroeconomy
- 'get\_adjusted\_closed\_price': Create a dataframe which gets the adjusted close price for period

```
[ ]: missing_data_tickers = []

def get_data_from_start_to_end(ticker, start_date, end_date):
    global missing_data_tickers # Use the global list to accumulate missing_
    ↪tickers
    try:
        stock_data = yf.download(ticker, start=start_date, end=end_date)
        if stock_data.empty:
            missing_data_tickers.append(ticker)
            raise ValueError(f"Stock data for ticker {ticker} during the period_
    ↪from {start_date} to {end_date} was not found.")
        return stock_data
```

```

except Exception as e:
    print(f"An error occurred for ticker {ticker}: {e}")
    missing_data_tickers.append(ticker)
    return None

```

```

[ ]: # for a variety of periods load in different list of tickers
def download_stock_data_for_periods(tickers, periods):
    all_data = {}

    for period, (start_date, end_date) in periods.items():
        period_data = {}
        for ticker in tickers:
            data = get_data_from_start_to_end(ticker, start_date, end_date)
            if data is not None:
                period_data[ticker] = data
        all_data[period] = period_data

    return all_data

```

```

[ ]: # create adjusted close price only listing of sector etfs
def get_adjusted_closed_price(nested_dict, tickers):
    stock_price_df = pd.DataFrame()

    for ticker in tickers:
        stock_price_df[ticker] = nested_dict[ticker]['Adj Close']

    return stock_price_df

```

### 1.0.3 Functions for Paper Trading

‘track\_investment\_history’: Will track the times when stocks were bought or sold as well as the value of the investment (one stock only)

```

[ ]: def track_investment_history(tickers, periods, initial_investment_df, data_df,
                                percentage_for_purchase_buy,
                                ↪percentage_for_purchase_sell):
    """
    Tracks investment history for given tickers and periods based on provided
    ↪data and initial investments.

    Parameters:
    - tickers: List of tickers to track.
    - periods: List of periods to consider.
    - initial_investment_df: DataFrame containing initial investments for each
    ↪ticker and period.

```

```

- data_df: Nested dictionary-like structure containing data with 'Adj_
↪Close' and 'Signal' columns.
    Example format: {period: {ticker: pd.DataFrame()}}
- percentage_for_purchase_buy: Percentage of current balance to invest when_
↪buying (default is 0.05).
- percentage_for_purchase_sell: Percentage of current shares to sell_
↪(default is 0.03).

Returns:
- investment_history: Dictionary with investment history for each ticker_
↪and period.
"""

# Initialize a dictionary to track investment history
investment_history = {period: {ticker: pd.DataFrame() for ticker in_
↪tickers} for period in periods}

# Iterate over each ticker and period
for ticker in tickers:
    for period in periods:
        # Check if data for the ticker and period is available
        if ticker not in data_df.get(period, {}):
            print(f"Data for {ticker} in period {period} is missing._
↪Skipping...")
            continue

        # Set the initial investment for each stock
        initial_investment = initial_investment_df.loc[ticker, period]

        # Initialize current balance and investment tracking
        portfolio_balance = initial_investment
        shares_value = 0
        shares_number = 0
        investment_value = initial_investment
        profit = 0

        # Extract relevant data
        data = data_df[period][ticker][['Adj Close', 'Signal']].copy()

        # Track investments
        investment_tracker = []

        # Iterate through each row in the data
        for index, row in data.iterrows():
            if row['Signal'] == 'Buy':
                amount_to_buy = percentage_for_purchase_buy *_
↪portfolio_balance

```

```

# Check if there is enough balance to buy
if portfolio_balance >= amount_to_buy:
    shares_to_buy = amount_to_buy / row['Adj Close']
    shares_number += shares_to_buy
    shares_value = shares_number * row['Adj Close']
    portfolio_balance -= amount_to_buy
    investment_value = shares_value + portfolio_balance
    profit = investment_value - initial_investment

    investment_tracker.append({
        'Date': index,
        'Share Price': row['Adj Close'],
        'Signal': 'Buy',
        'Buy/Sell Amount ($)': amount_to_buy,
        'Buy/Sell Number of Shares': shares_to_buy,
        'Shares ($) Ownership': shares_value,
        'Shares Ownership': shares_number,
        'Account Balance': portfolio_balance,
        'Investment Value': investment_value,
        'Profit': profit
    })

elif row['Signal'] == 'Sell':
    amount_to_sell = percentage_for_purchase_sell * 
↪portfolio_balance # made a change to make it portfolio balance rather than
↪amount in stock account
    # Check if there are enough shares to sell
    if shares_value >= amount_to_sell:
        shares_to_sell = amount_to_sell / row['Adj Close']
        shares_number -= shares_to_sell
        shares_value = shares_number * row['Adj Close']
        portfolio_balance += amount_to_sell
        investment_value = shares_value + portfolio_balance
        profit = investment_value - initial_investment

        investment_tracker.append({
            'Date': index,
            'Share Price': row['Adj Close'],
            'Signal': 'Sell',
            'Buy/Sell Amount ($)': amount_to_sell,
            'Buy/Sell Number of Shares': shares_to_sell,
            'Shares ($) Ownership': shares_value,
            'Shares Ownership': shares_number,
            'Account Balance': portfolio_balance,
            'Investment Value': investment_value,
            'Profit': profit
        })

```

```

        else:
            investment_value = (shares_number * row['Adj Close']) +
↪portfolio_balance
            shares_value = shares_number * row['Adj Close']
            profit = investment_value - initial_investment

            investment_tracker.append({
                'Date': index,
                'Share Price': row['Adj Close'],
                'Signal': np.nan,
                'Buy/Sell Amount ($)': 0,
                'Buy/Sell Number of Shares': 0,
                'Shares ($) Ownership': shares_value,
                'Shares Ownership': shares_number,
                'Account Balance': portfolio_balance,
                'Investment Value': investment_value,
                'Profit': profit
            })

            # Store the investment history in the dictionary
            investment_history[period][ticker] = pd.
↪DataFrame(investment_tracker)

    return investment_history

```

```

[ ]: def return_on_investment(investment_tracker, periods, tickers, column):
    roi = pd.DataFrame(index=tickers, columns=periods)
    for ticker in tickers:
        for period in periods:
            data = investment_tracker[period][ticker]
            if column in data.columns:
                start_price = data[column].iloc[0]
                end_price = data[column].iloc[-1]
                roi.at[ticker, period] = ((end_price - start_price) /
↪start_price) * 100
            else:
                roi.at[ticker, period] = np.nan
    return roi

```

#### 1.0.4 Download Data

```

[ ]: # create etf tickers for sectors
sector_etf_tickers = [
    'XLB', # materials sector
    'XLI', # industrials sector
    'XLF', # financials
    'XLK', # information technology

```

```
'XLY', # consumer discretionary
'XLP', # consumer staples
'XLE', # energy
'XLV', # healthcare
'VOX', # communication services
'XLU', # utilities
'IYR' # real estate
]
```

```
# create time periods for where this takes place
economic_cycle_periods = {

    "trough": ("2008-01-01", "2009-07-01"),
    "contraction": ("2020-02-01", "2020-04-01"),
    "expansion": ("2016-01-01", "2020-01-01"),
    "recovery": ("2020-10-01", "2024-09-02")
}

economic_cycle_periods_list = ['trough', 'contraction', 'expansion', 'recovery']
```

```

    "trough": ("2008-01-01", "2009-07-01"),
    "contraction": ("2020-02-01", "2020-04-01"),
    "expansion": ("2016-01-01", "2020-01-01"),
    "recovery": ("2020-10-01", "2024-09-02")
}

```

```
# save data for sector etfs from 2000 to 2024-08-01
```

```
↳ download_stock_data_for_periods(sector_etf_tickers,economic_cycle_periods)
```

[illegible]

```
[*****100%*****] 1 of 1 completed
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```

```
[ ]: # example case of accessing nested loop
sector_etf_data['trough']['XLB']
```

```
[ ]:
      Open      High      Low      Close  Adj Close  Volume
Date
2008-01-02  41.700001  41.950001  40.980000  41.299999  28.801889  9539300
2008-01-03  41.520000  42.169998  41.450001  42.049999  29.324924  8798200
2008-01-04  41.570000  41.570000  40.700001  40.779999  28.439241  14375000
2008-01-07  40.810001  41.060001  39.669998  40.220001  28.048717  19606300
2008-01-08  40.400002  41.070000  39.470001  39.599998  27.616348  22922900
...
2009-06-24  25.480000  25.920000  25.180000  25.320000  18.324324  11639400
2009-06-25  25.290001  25.910000  25.000000  25.860001  18.715120  10998600
2009-06-26  25.870001  26.030001  25.670000  25.820000  18.686172  6945300
2009-06-29  26.010000  26.240000  25.700001  26.049999  18.852629  5011400
2009-06-30  26.129999  26.280001  25.639999  25.799999  18.671701  7835600
```

```
[377 rows x 6 columns]
```

## 1.1 Bollinger Bands

### 1.1.1 Functions for Bollinger Bands

‘add\_bollinger\_data’: Creates bollinger data (upper, lower and moving average band) as well as signals ‘bollinger\_data\_multiple\_periods\_tickers’: Add bollinger bands in different periods and tickers ‘plot\_with\_boll\_bands’: Plot data with bollinger bands and buy/sell signal

```
[ ]: # create bollinger bands
import scipy.stats as stats
def add_bollinger_data(data,window,conf_int):
    z_score = stats.norm.ppf(1 - (1 - conf_int) / 2) # create a zscore from
    ↪the mean

    data['middle_band'] = data['Adj Close'].rolling(window).mean()
    data['upper_band'] = data['middle_band'] + z_score * data['Adj Close'].
    ↪rolling(window).std()
    data['lower_band'] = data['middle_band'] - z_score * data['Adj Close'].
    ↪rolling(window).std()

    data['Signal'] = None

    data['Signal'] = np.where(data['Adj Close'] < data['lower_band'], 'Buy',
    ↪np.where(data['Adj Close'] > data['upper_band'],
    ↪'Sell', np.nan))

    return data
```

```
[ ]: # create bollinger data for multiple time period and multiple tickers
def
    ↪bollinger_data_multiple_periods_tickers(periods,tickers,data,window,confidence_period):
    ↪
    # for each ticker in economic time periods
    for period in periods:
        for ticker in tickers:
            try:
                ↪
    ↪add_bollinger_data(data[period][ticker],window,confidence_period)
            except KeyError:
                print(f'Data for {ticker} does not exist during
    ↪{period}')
```

```
[ ]: # create a function that plots the bollinger bands and actions
def plot_with_boll_bands(bollinger_data,investment_tracking_df):
    """
    bollinger_data: holds the signals and bollinger data
    """
    buy_data = []
    sell_data = []

    for index, row in bollinger_data.iterrows():
        if row['Signal']=='Buy':
            buy_data.append(row['Adj Close'])
        else:
            buy_data.append(np.nan)
```



```

        if row['Signal'] == 'Sell':
            sell_data.append(row['Adj Close'])

        else:
            sell_data.append(np.nan)

    bollinger_data['Buy Data'] = buy_data
    bollinger_data['Sell Data'] = sell_data

    plt.figure(figsize=(12,8))

    plt.plot(bollinger_data.index,bollinger_data['Adj_
    ↪Close'],color='grey',label='Adjusted Close Price')
    plt.plot(bollinger_data.
    ↪index,bollinger_data['lower_band'],color='green',label='Lower_
    ↪Band',linestyle='-')
    plt.plot(bollinger_data.
    ↪index,bollinger_data['upper_band'],color='red',label='Upper_
    ↪Band',linestyle='-')
    plt.scatter(bollinger_data.index,bollinger_data['Buy_
    ↪Data'],marker='o',color='green',label='Buy Signal')
    plt.scatter(bollinger_data.index,bollinger_data['Sell_
    ↪Data'],marker='o',color='red',label='Sell Signal')

    #plt.plot(investment_tracking_df['Date'],investment_tracking_df['Investment_
    ↪Value'])
    # goal is to make a subplot which shows both the investment and bollinger_
    ↪bands

    plt.xlabel('Date')
    plt.xticks(rotation=60)
    plt.ylabel('Price')
    plt.legend()
    plt.show()

```

## 1.2 Base Model Bollinger Bands

Using John Bollinger's parameters of a 20 day moving average with 2 standard deviations above and below the moving average line to create channels for the price to move within. If the price goes below

```

[ ]: for ticker in sector_etf_tickers:
    ↪
    ↪bollinger_data_multiple_periods_tickers(economic_cycle_periods_list,sector_etf_tickers,sect
    ↪95)

```

```
[ ]: # example case of new bollinger bands added to data
sector_etf_data['trough']['XLV']
```

```
[ ]:
      Open      High      Low      Close  Adj Close  Volume \
Date
2008-01-02  35.630001  35.630001  34.709999  34.939999  26.220284  6611300
2008-01-03  35.279999  35.299999  35.029999  35.150002  26.377874  2544400
2008-01-04  34.889999  35.160000  34.759998  34.790001  26.107712  3270600
2008-01-07  34.820000  35.580002  34.820000  35.480000  26.625519  5457900
2008-01-08  35.660000  36.389999  35.570000  35.770000  26.843140  6231200
...
2009-06-24  25.709999  25.809999  25.490000  25.660000  19.861149  4161500
2009-06-25  25.730000  26.520000  25.570000  26.370001  20.410688  8134500
2009-06-26  26.400000  26.480000  26.100000  26.370001  20.410688  4967700
2009-06-29  26.320000  26.559999  26.090000  26.530001  20.534531  4266200
2009-06-30  26.469999  26.549999  26.110001  26.309999  20.364252  5414000
```

```
      middle_band  upper_band  lower_band  Signal
Date
2008-01-02      NaN      NaN      NaN      nan
2008-01-03      NaN      NaN      NaN      nan
2008-01-04      NaN      NaN      NaN      nan
2008-01-07      NaN      NaN      NaN      nan
2008-01-08      NaN      NaN      NaN      nan
...
2009-06-24  19.755180  20.314254  19.196105      nan
2009-06-25  19.798019  20.417557  19.178480      nan
2009-06-26  19.823915  20.498595  19.149234      nan
2009-06-29  19.849457  20.588770  19.110144      nan
2009-06-30  19.860324  20.623081  19.097567      nan
```

[377 rows x 10 columns]

```
[ ]: # give each $1000 to buy stock
bollinger_investment = 100

# set the static parameter to purchase stocks
percentage_to_buy = 0.05

# set the static parameter to sell stocks
percentage_to_sell = 0.05

# track
bollinger_band_investment_tracking = pd.
    ↳ DataFrame(bollinger_investment, index=sector_etf_tickers, columns=economic_cycle_periods_list

bollinger_portfolio_investment = track_investment_history(
```

```

sector_etf_tickers,
economic_cycle_periods_list,
bollinger_band_investment_tracking,
sector_etf_data,
percentage_to_buy,
percentage_to_sell
)

```

```

[ ]: # practice getting a random sector etf during a specific economic time period
bollinger_portfolio_investment['expansion']['IYR']

```

```

[ ]:
      Date  Share Price Signal  Buy/Sell Amount ($) \
0    2016-01-04    56.998508    NaN                0.0
1    2016-01-05    57.933815    NaN                0.0
2    2016-01-06    57.742161    NaN                0.0
3    2016-01-07    56.454212    NaN                0.0
4    2016-01-08    55.787231    NaN                0.0
...
998  2019-12-24    81.376266    NaN                0.0
999  2019-12-26    81.810966    NaN                0.0
1000 2019-12-27    82.032761    NaN                0.0
1001 2019-12-30    82.094864    NaN                0.0
1002 2019-12-31    82.573914    NaN                0.0

```

```

      Buy/Sell Number of Shares  Shares ($) Ownership  Shares Ownership \
0                                0.0          0.000000          0.000000
1                                0.0          0.000000          0.000000
2                                0.0          0.000000          0.000000
3                                0.0          0.000000          0.000000
4                                0.0          0.000000          0.000000
...
998                                0.0          62.394218          0.766737
999                                0.0          62.727518          0.766737
1000                               0.0          62.897576          0.766737
1001                               0.0          62.945193          0.766737
1002                               0.0          63.312498          0.766737

```

```

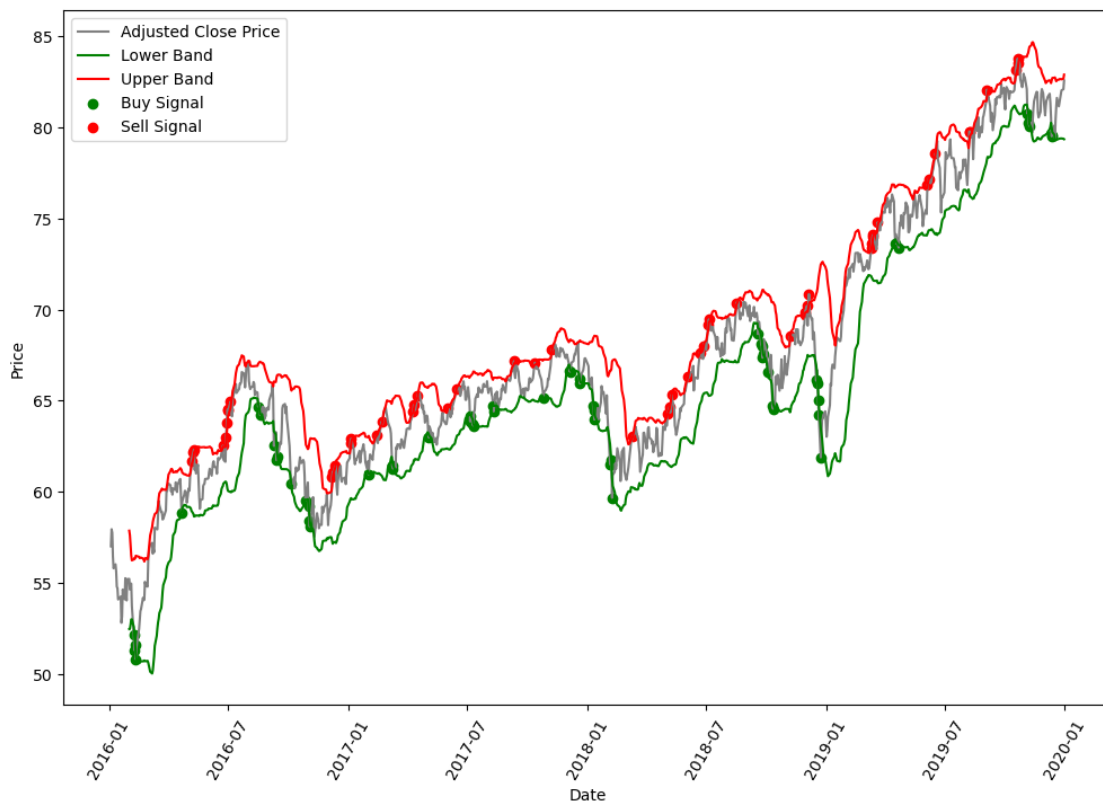
      Account Balance  Investment Value  Profit
0          100.000000          100.000000  0.000000
1          100.000000          100.000000  0.000000
2          100.000000          100.000000  0.000000
3          100.000000          100.000000  0.000000
4          100.000000          100.000000  0.000000
...
998          61.618405          124.012623  24.012623
999          61.618405          124.345924  24.345924
1000         61.618405          124.515981  24.515981

```

1001	61.618405	124.563598	24.563598
1002	61.618405	124.930904	24.930904

[1003 rows x 10 columns]


```
[ ]: # show the same example but with bollinger bands plotted
plot_with_boll_bands(sector_etf_data['expansion']['IYR'],bollinger_portfolio_investment['expansion']['IYR'])
```



```
[ ]: # get the return on investment
return_on_investment(bollinger_portfolio_investment,economic_cycle_periods_list,sector_etf_tic,Value')
```

	trough	contraction	expansion	recovery
XLB	-14.662571	0.308722	13.142515	21.941159
XLI	-14.736317	-0.093904	14.592541	24.457613
XLF	-18.725582	-0.25141	18.25949	24.94449
XLK	-2.603091	0.771323	21.29255	23.190597
XLY	-2.747609	0.161724	24.460879	15.85941
XLP	1.837226	1.338577	10.270881	17.158028
XLE	-8.199657	-1.899128	9.833254	37.431899
XLV	0.350396	1.517395	20.330492	22.442837

VOX	6.043727	0.213881	11.22405	14.276661
XLU	-6.896652	1.818529	16.547714	23.808192
IYR	-8.907489	-1.252401	24.930904	17.723985

```
[ ]: sector_etf_adjusted_close = get_adjusted_closed_price(sector_etf_data['expansion'],sector_etf_tickers)
sector_etf_adjusted_close
```

```
[ ]:
```

	XLB	XLI	XLF	XLK	XLV	XLP \
Date						
2016-01-04	36.036121	44.768230	16.104385	38.133724	69.853935	39.717804
2016-01-05	36.019253	44.888077	16.166403	38.034477	69.763031	39.972759
2016-01-06	35.074924	44.194717	15.918319	37.565384	69.081024	39.837326
2016-01-07	34.122177	42.996342	15.470407	36.455719	67.662491	39.359276
2016-01-08	33.776474	42.559792	15.229220	36.167042	66.934998	39.056507
...	...	...	...	...	...	...
2019-12-24	55.754555	75.889618	28.029095	87.496101	119.797142	55.833912
2019-12-26	56.000847	76.065926	28.184410	88.148193	121.259247	55.887157
2019-12-27	55.791050	76.000977	28.111328	88.138618	121.249626	56.135674
2019-12-30	55.617725	75.648346	28.029095	87.630363	120.470467	55.842789
2019-12-31	56.028221	75.601929	28.120462	87.908463	120.643608	55.896046

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208141	61.440025	71.763748	32.787567	56.998508
2016-01-05	42.369133	61.735359	72.527199	33.022915	57.933815
2016-01-06	40.738220	61.231544	72.214882	32.962170	57.742161
2016-01-07	39.744240	59.989361	70.731354	32.742027	56.454212
2016-01-08	39.233276	59.085964	70.176117	32.726852	55.787231
...	...	...	...	...	...
2019-12-24	49.058319	95.267296	90.223427	55.464291	81.376266
2019-12-26	49.042480	95.202530	90.923050	55.559502	81.810966
2019-12-27	48.836624	95.230293	90.750557	55.723949	82.032761
2019-12-30	48.682499	94.658577	89.887985	55.715302	82.094864
2019-12-31	48.959759	94.844795	90.022163	55.931679	82.573914

[1006 rows x 11 columns]

```
[ ]: import pandas as pd

def get_adjusted_closed_price(nested_dict, tickers, periods):
    all_data = {}

    # Create dictionaries to hold DataFrames for all periods
    all_adjusted_close = {}
    all_bollinger_signals = {}
```

```

for period, (start_date, end_date) in periods.items():
    adjusted_close_data = {}
    bollinger_signal_data = {}

    # Collect the adjusted close prices and Bollinger signals for each
    ↪ ticker
    for ticker in tickers:
        if ticker in nested_dict.get(period, {}):
            adjusted_close_data[ticker] = nested_dict[period][ticker]['Adj
            ↪ Close']
            bollinger_signal_data[ticker] =
            ↪ nested_dict[period][ticker]['Signal']

    # Convert the data into DataFrames
    adjusted_close_df = pd.DataFrame(adjusted_close_data)
    bollinger_signal_df = pd.DataFrame(bollinger_signal_data)

    # Store the DataFrames in the dictionary for each period
    all_adjusted_close[period] = adjusted_close_df
    all_bollinger_signals[period] = bollinger_signal_df

    # Also store the adjusted close prices and signals as a nested
    ↪ dictionary
    all_data[period] = {
        'Adjusted Close': adjusted_close_df,
        'Bollinger Signal': bollinger_signal_df
    }

    # Return both the nested dictionary and DataFrames
    return all_data

```

```

[ ]: # create dataframe which tracks the stocks bought and sold and how much money
    ↪ there
    #portfolio_investment = {}
    #for period, (start_date, end_date) in economic_cycle_periods.items():
        #for ticker in sector_etf_tickers:

```

```

[ ]: sector_etf_adjusted_close

```

```

[ ]:

```

	XLB	XLI	XLF	XLK	XLY	XLP	\
Date							
2016-01-04	36.036121	44.768230	16.104385	38.133724	69.853935	39.717804	
2016-01-05	36.019253	44.888077	16.166403	38.034477	69.763031	39.972759	
2016-01-06	35.074924	44.194717	15.918319	37.565384	69.081024	39.837326	
2016-01-07	34.122177	42.996342	15.470407	36.455719	67.662491	39.359276	
2016-01-08	33.776474	42.559792	15.229220	36.167042	66.934998	39.056507	

...	...	...	...	...	...	...
2019-12-24	55.754555	75.889618	28.029095	87.496101	119.797142	55.833912
2019-12-26	56.000847	76.065926	28.184410	88.148193	121.259247	55.887157
2019-12-27	55.791050	76.000977	28.111328	88.138618	121.249626	56.135674
2019-12-30	55.617725	75.648346	28.029095	87.630363	120.470467	55.842789
2019-12-31	56.028221	75.601929	28.120462	87.908463	120.643608	55.896046

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208141	61.440025	71.763748	32.787567	56.998508
2016-01-05	42.369133	61.735359	72.527199	33.022915	57.933815
2016-01-06	40.738220	61.231544	72.214882	32.962170	57.742161
2016-01-07	39.744240	59.989361	70.731354	32.742027	56.454212
2016-01-08	39.233276	59.085964	70.176117	32.726852	55.787231
...	...	...	...	...	...
2019-12-24	49.058319	95.267296	90.223427	55.464291	81.376266
2019-12-26	49.042480	95.202530	90.923050	55.559502	81.810966
2019-12-27	48.836624	95.230293	90.750557	55.723949	82.032761
2019-12-30	48.682499	94.658577	89.887985	55.715302	82.094864
2019-12-31	48.959759	94.844795	90.022163	55.931679	82.573914

[1006 rows x 11 columns]

```
[ ]: def track_portfolio(nested_dict, sector_etf_tickers, initial_investment=9000):
    portfolio_summary = {}

    # Loop through each period in the nested dictionary
    for period, stocks_data in nested_dict.items():
        print(f"Processing period: {period}")
        portfolio_summary[period] = {}

        # Loop through each stock/ETF in the current period
        for ticker in sector_etf_tickers:
            if ticker not in stocks_data:
                continue # Skip tickers not available in the current period
            print(f"Processing ticker: {ticker}")

            # Get the DataFrame for the current stock/ticker
            df = stocks_data[ticker]

            # Initialize tracking variables for this ticker
            balance = initial_investment
            share_ownership = 0
            total_investment = initial_investment
            portfolio_profit = 0

            # Iterate through the rows in the DataFrame (dates)
```

```

        for rowidx in df.index:
            adj_close = df.loc[rowidx, 'Adj Close'] # Adjusted close price
            ↪for the current date
            signal = df.loc[rowidx, 'Signal'] # Buy/Sell signal for the
            ↪current date

            # If the signal is 'buy', calculate the amount to invest and
            ↪update ownership
            if signal == 'buy':
                buy_amount = 0.05 * balance # Buy 5% of available balance
                buy_shares = buy_amount / adj_close # Calculate the number
                ↪of shares to buy

                # Update balance and ownership
                balance -= buy_amount
                share_ownership += buy_shares
                print(f"Bought {buy_shares:.2f} shares at {adj_close:.2f},
                ↪balance: {balance:.2f}, shares owned: {share_ownership:.2f}")

            # If the signal is 'sell', calculate the amount to sell and
            ↪update ownership
            elif signal == 'sell' and share_ownership > 0:
                sell_shares = 0.05 * share_ownership # Sell 5% of owned
                ↪shares

                sell_amount = sell_shares * adj_close # Calculate the
                ↪amount earned by selling

                # Update balance and ownership
                balance += sell_amount
                share_ownership -= sell_shares
                print(f"Sold {sell_shares:.2f} shares at {adj_close:.2f},
                ↪balance: {balance:.2f}, shares owned: {share_ownership:.2f}")

            # Calculate final profit for this ticker at the end of the period
            portfolio_value = (share_ownership * adj_close) + balance
            portfolio_profit = portfolio_value - total_investment
            print(f"Final portfolio value for {ticker}: {portfolio_value:.2f},
            ↪Profit: {portfolio_profit:.2f}")

            # Store the results in the summary for this period and ticker
            portfolio_summary[period][ticker] = {
                'Final Portfolio Value': portfolio_value,
                'Profit': portfolio_profit,
                'Shares Owned': share_ownership,
                'Final Balance': balance
            }

```



```
return portfolio_summary
```

```
[ ]: # adjusted close price creation
portfolio_data =
    ↪get_adjusted_closed_price(sector_etf_data,sector_etf_tickers,economic_cycle_periods)
```

```
[ ]: investment_history = {period: {ticker: pd.DataFrame() for ticker in
    ↪sector_etf_tickers} for period in economic_cycle_periods}
investment_history['expansion']
```

```
[ ]: {'XLB': Empty DataFrame
      Columns: []
      Index: [],
      'XLI': Empty DataFrame
      Columns: []
      Index: [],
      'XLF': Empty DataFrame
      Columns: []
      Index: [],
      'XLK': Empty DataFrame
      Columns: []
      Index: [],
      'XLY': Empty DataFrame
      Columns: []
      Index: [],
      'XLP': Empty DataFrame
      Columns: []
      Index: [],
      'XLE': Empty DataFrame
      Columns: []
      Index: [],
      'XLV': Empty DataFrame
      Columns: []
      Index: [],
      'VOX': Empty DataFrame
      Columns: []
      Index: [],
      'XLU': Empty DataFrame
      Columns: []
      Index: [],
      'IYR': Empty DataFrame
      Columns: []
      Index: []}
```

```
[ ]: bollinger_portfolio_investment['expansion']['XLB']
```

```
[ ]:      Date  Share Price Signal  Buy/Sell Amount ($) \
0   2016-01-04   36.036121   NaN           0.0
1   2016-01-05   36.019253   NaN           0.0
2   2016-01-06   35.074924   NaN           0.0
3   2016-01-07   34.122177   NaN           0.0
4   2016-01-08   33.776474   NaN           0.0
..   ...
971 2019-12-24   55.754555   NaN           0.0
972 2019-12-26   56.000847   NaN           0.0
973 2019-12-27   55.791050   NaN           0.0
974 2019-12-30   55.617725   NaN           0.0
975 2019-12-31   56.028221   NaN           0.0
```

```
      Buy/Sell Number of Shares  Shares ($) Ownership  Shares Ownership \
0              0.0              0.000000      0.000000      0.000000
1              0.0              0.000000      0.000000      0.000000
2              0.0              0.000000      0.000000      0.000000
3              0.0              0.000000      0.000000      0.000000
4              0.0              0.000000      0.000000      0.000000
..             ...
971             0.0             1852.991550      33.234801
972             0.0             1861.177019      33.234801
973             0.0             1854.204461      33.234801
974             0.0             1848.444053      33.234801
975             0.0             1862.086798      33.234801
```

```
      Account Balance  Investment Value      Profit
0      10000.000000      10000.000000      0.000000
1      10000.000000      10000.000000      0.000000
2      10000.000000      10000.000000      0.000000
3      10000.000000      10000.000000      0.000000
4      10000.000000      10000.000000      0.000000
..             ...
971      9452.164737      11305.156287     1305.156287
972      9452.164737      11313.341756     1313.341756
973      9452.164737      11306.369198     1306.369198
974      9452.164737      11300.608790     1300.608790
975      9452.164737      11314.251535     1314.251535
```

[976 rows x 10 columns]

```
[ ]: portfolio_data
```

```
[ ]: {'trough': {'Adjusted Close':      XLB      XLI      XLF
XLK      XLY      XLP \
Date
2008-01-02  28.801889  27.678581  16.648197  20.682898  25.905005  18.187735
```

2008-01-03	29.324924	27.700146	16.542532	20.714575	25.615391	18.091633
2008-01-04	28.439241	27.132343	16.072905	19.906891	24.810890	18.014769
2008-01-07	28.048717	26.794529	16.113991	19.732702	24.899378	18.226171
2008-01-08	27.616348	26.197969	15.526963	19.210083	24.416679	18.091633
...	...	...	...	...	...	...
2009-06-24	18.324324	16.016403	7.210425	14.505177	18.439777	15.126423
2009-06-25	18.715120	16.510370	7.365688	14.715521	19.083601	15.386080
2009-06-26	18.686172	16.443012	7.402948	14.691256	18.951536	15.332820
2009-06-29	18.852629	16.607670	7.496109	14.844966	19.190901	15.426023
2009-06-30	18.671701	16.435532	7.421579	14.731702	19.050587	15.306195

	XLE	XLV	VOX	XLU	IYR
Date					
2008-01-02	47.723316	26.220284	51.236698	23.351934	35.358295
2008-01-03	48.287582	26.377874	51.098698	23.318661	34.213158
2008-01-04	46.522720	26.107712	49.870567	23.496195	33.127716
2008-01-07	46.342621	26.625519	50.408737	23.984428	33.437077
2008-01-08	45.532227	26.843140	48.635529	23.989979	32.221375
...	...	...	...	...	...
2009-06-24	29.038149	19.861149	34.930641	16.102043	18.738123
2009-06-25	29.646952	20.410688	35.735035	16.372564	19.036985
2009-06-26	29.450169	20.410688	35.542831	16.313749	19.204344
2009-06-29	29.726900	20.534531	35.856045	16.525476	19.252153
2009-06-30	29.548559	20.364252	35.393337	16.401972	19.377670

[377 rows x 11 columns],

'Bollinger Signal':

	XLB	XLI	XLF	XLK	XLV	XLP	XLE	XLV	VOX
XLU									
IYR									
Date									

Date											
2008-01-02	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-03	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-07	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-08	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
...	...	...	...	...	...	...	...	...	...	...	...
2009-06-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2009-06-25	nan	nan	nan	nan	nan	nan	nan	nan	Sell	nan	nan
2009-06-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2009-06-29	nan	nan	nan	nan	nan	nan	nan	nan	Sell	nan	nan
2009-06-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan

[377 rows x 11 columns]},

'contraction': {'Adjusted Close':

	XLB	XLI	XLF
XLK			
XLV			
XLP \			
Date			

Date						
2020-02-03	53.674706	75.240036	27.563169	92.626549	121.403526	56.073544
2020-02-04	54.623409	76.659821	27.828108	95.052765	123.615929	56.410801

2020-02-05	55.635975	77.940437	28.385401	95.608948	124.241165	56.863438
2020-02-06	55.608604	78.190994	28.348862	96.481628	123.962234	56.961060
2020-02-07	54.814968	77.624916	28.248363	95.599350	123.423569	57.032066
2020-02-10	54.787617	78.061081	28.330591	96.893974	124.818344	57.271694
2020-02-11	55.088642	78.358017	28.431086	96.567909	125.799492	57.058689
2020-02-12	55.389664	79.091118	28.449356	97.613205	127.088478	57.032066
2020-02-13	55.188976	78.645691	28.440222	97.354271	126.867210	57.369324
2020-02-14	55.198090	78.543625	28.476763	97.776222	126.674850	57.502449
2020-02-18	55.061275	78.098183	28.230093	97.411827	126.665207	57.298325
2020-02-19	55.207233	78.070335	28.440222	98.572174	127.232735	57.236191
2020-02-20	55.298447	77.959000	28.385401	97.546051	127.280853	57.280571
2020-02-21	55.043022	77.569260	28.111322	95.359634	125.337769	57.378197
2020-02-24	53.492264	75.360680	27.197731	91.418274	121.028374	56.055801
2020-02-25	51.184357	72.289055	26.275002	88.493423	117.796341	55.044022
2020-02-26	51.011040	71.741577	26.083145	88.896202	116.863274	54.733391
2020-02-27	48.621033	69.078293	24.968557	84.101349	112.140274	52.505714
2020-02-28	48.091961	67.816254	24.292498	84.743858	111.418854	51.467316
2020-03-02	50.153553	70.201157	25.534986	89.644203	115.247261	54.218632
2020-03-03	49.715698	68.484398	24.575710	86.239853	112.457710	53.481983
2020-03-04	51.777294	71.314697	25.388815	89.941460	116.343849	56.109051
2020-03-05	50.135311	67.825516	24.164597	87.102936	112.005608	55.052898
2020-03-06	48.830849	67.231628	23.342361	85.261726	110.283775	54.618008
2020-03-09	44.260654	61.032761	20.839104	78.788681	103.338722	52.239464
2020-03-10	46.057713	64.197174	22.063322	84.043823	109.052505	53.739368
2020-03-11	43.868397	60.429596	20.866516	80.073715	103.088623	51.103432
2020-03-12	39.644848	54.175049	18.609932	72.258110	92.671066	46.301949
2020-03-13	42.427094	58.406612	21.058372	80.735405	98.404099	50.242535
2020-03-16	37.756561	51.780884	18.171410	69.582611	85.937653	46.834457
2020-03-17	40.091831	54.165768	19.158089	74.319878	89.246651	50.783928
2020-03-18	37.528507	50.175488	17.531895	71.519714	84.119629	49.479267
2020-03-19	38.486324	50.212612	17.915604	71.778648	87.053474	47.828472
2020-03-20	37.108891	47.697803	17.276085	68.489388	84.465919	44.731041
2020-03-23	35.217171	45.608608	16.270903	67.863762	84.605110	43.407303
2020-03-24	39.358746	51.378651	18.288643	74.814034	92.540764	45.620960
2020-03-25	40.277058	54.081322	18.786165	74.717628	94.164642	45.495998
2020-03-26	42.168777	57.494720	19.965483	79.344688	98.059982	47.986362
2020-03-27	40.644367	55.072613	19.357393	75.758705	94.773582	47.763199
2020-03-30	41.939201	55.876858	19.725935	78.949463	96.755074	49.628754
2020-03-31	41.360664	55.184834	19.182343	77.474594	94.802574	48.620106

	XLE	XLV	VOX	XLU	IYR
Date					
2020-02-03	43.006954	93.150154	91.689766	59.895889	84.152992
2020-02-04	43.161884	94.788940	92.600243	59.298656	85.013512
2020-02-05	44.784641	96.613960	92.581062	59.541016	85.031250
2020-02-06	44.327976	96.697754	93.711983	59.558323	85.350624
2020-02-07	44.018105	95.943542	93.606567	59.367901	85.315140

2020-02-10	43.797932	96.455650	94.239098	59.592949	86.175652						
2020-02-11	44.287216	97.032959	94.469124	59.809330	86.876488						
2020-02-12	44.882500	97.153992	95.379601	59.852612	87.568451						
2020-02-13	44.743858	96.697754	95.475456	60.519077	88.162811						
2020-02-14	44.507381	96.772232	95.389175	60.925896	88.961235						
2020-02-18	44.140438	96.427711	95.973793	61.436562	88.899124						
2020-02-19	44.727551	96.874657	96.414665	60.770092	87.781357						
2020-02-20	44.678627	96.250809	96.002556	60.986462	88.730576						
2020-02-21	44.148575	96.306679	94.660812	60.873970	88.899124						
2020-02-24	42.109951	93.271187	91.555588	60.164219	87.710358						
2020-02-25	40.250717	90.440559	89.226692	58.900513	85.359482						
2020-02-26	39.035694	90.431244	88.718719	58.303280	84.463486						
2020-02-27	36.948143	87.358521	85.306862	55.680676	80.036728						
2020-02-28	36.915516	86.231865	85.479362	53.819752	77.535019						
2020-03-02	38.407803	90.272957	88.086197	56.987648	81.269829						
2020-03-03	37.233555	88.028923	85.354774	56.286552	81.278702						
2020-03-04	38.114239	93.103607	88.172455	59.480419	84.383659						
2020-03-05	36.719810	90.943375	84.952240	58.562958	82.547295						
2020-03-06	34.656731	90.459175	83.658424	58.086899	81.145638						
2020-03-09	27.676451	85.756996	77.840935	54.927650	75.130920						
2020-03-10	28.989330	88.699348	81.535385	55.438320	78.031815						
2020-03-11	27.456276	85.310028	77.808273	52.651257	73.489716						
2020-03-12	24.031376	78.941124	70.623024	47.336788	66.330582						
2020-03-13	26.249409	84.416161	76.799660	49.916122	71.990448						
2020-03-16	22.677729	76.091858	68.029411	44.246796	59.845684						
2020-03-17	22.832659	80.868561	70.738297	49.907467	62.657864						
2020-03-18	19.554544	78.186913	68.077454	47.734947	56.492325						
2020-03-19	20.883728	76.585373	69.643227	44.956543	56.518944						
2020-03-20	21.087603	73.642990	66.473251	41.390484	54.043858						
2020-03-23	19.650295	69.818069	66.367577	39.278385	51.311508						
2020-03-24	22.801680	75.198051	70.901596	43.500832	55.418907						
2020-03-25	23.877150	76.199173	70.286797	44.611080	58.461567						
2020-03-26	25.336126	81.261032	74.321327	48.413918	62.796684						
2020-03-27	23.618710	79.520737	71.506760	48.676167	62.877308						
2020-03-30	23.860485	83.244621	73.658493	50.477058	64.131256						
2020-03-31	24.227308	82.879707	73.178200	48.440128	62.313030	,					
'Bollinger Signal':											
XLB XLI XLF XLK XLY XLP XLE XLV VOX											
XLU IYR											
Date											
2020-02-03	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-07	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-10	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-11	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-12	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan

2020-02-13	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-14	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-18	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-19	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-20	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-21	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-25	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-02-28	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-02	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-03	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-09	Buy	Buy	Buy	Buy	Buy	nan	Buy	nan	Buy	nan	Buy	
2020-03-10	nan	nan	nan	nan	nan	nan	Buy	nan	nan	nan	nan	
2020-03-11	nan	nan	nan	nan	nan	nan	Buy	nan	nan	Buy	Buy	
2020-03-12	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	
2020-03-13	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-16	Buy	Buy	nan	Buy	Buy	Buy	nan	Buy	Buy	Buy	Buy	
2020-03-17	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-18	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	Buy	
2020-03-19	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-20	nan	nan	nan	nan	nan	Buy	nan	nan	nan	Buy	nan	
2020-03-23	nan	nan	nan	nan	nan	Buy	nan	Buy	nan	Buy	nan	
2020-03-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-25	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	
2020-03-31	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	},

'expansion': {'Adjusted Close':

					XLB	XLI	XLF
XLK	XLY	XLP	\				
Date							
2016-01-04	36.036121	44.768230	16.104385	38.133724	69.853935	39.717804	
2016-01-05	36.019253	44.888077	16.166403	38.034477	69.763031	39.972759	
2016-01-06	35.074924	44.194717	15.918319	37.565384	69.081024	39.837326	
2016-01-07	34.122177	42.996342	15.470407	36.455719	67.662491	39.359276	
2016-01-08	33.776474	42.559792	15.229220	36.167042	66.934998	39.056507	
...	...	...	...	...	...	...	
2019-12-24	55.754555	75.889618	28.029095	87.496101	119.797142	55.833912	
2019-12-26	56.000847	76.065926	28.184410	88.148193	121.259247	55.887157	
2019-12-27	55.791050	76.000977	28.111328	88.138618	121.249626	56.135674	
2019-12-30	55.617725	75.648346	28.029095	87.630363	120.470467	55.842789	
2019-12-31	56.028221	75.601929	28.120462	87.908463	120.643608	55.896046	

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208141	61.440025	71.763748	32.787567	56.998508
2016-01-05	42.369133	61.735359	72.527199	33.022915	57.933815
2016-01-06	40.738220	61.231544	72.214882	32.962170	57.742161
2016-01-07	39.744240	59.989361	70.731354	32.742027	56.454212
2016-01-08	39.233276	59.085964	70.176117	32.726852	55.787231
...	...	...	...	...	...
2019-12-24	49.058319	95.267296	90.223427	55.464291	81.376266
2019-12-26	49.042480	95.202530	90.923050	55.559502	81.810966
2019-12-27	48.836624	95.230293	90.750557	55.723949	82.032761
2019-12-30	48.682499	94.658577	89.887985	55.715302	82.094864
2019-12-31	48.959759	94.844795	90.022163	55.931679	82.573914

[1006 rows x 11 columns],  
'Bollinger Signal':

	XLB	XLI	XLF	XLK	XLV	XLX	XLZ	XLAA	XLBB	XLCC	XLDD	XLFE	XLGG	XLHH	XLII	XLJJ	XLKK	XLLL	XLMM	XLNN	XLPP	XLQQ	XLRR	XLSS	XLTT	XLUU	XLVV	XLWW	XLXX	XLYY	XLZZ
Date																															
2016-01-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2016-01-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2016-01-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2016-01-07	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2016-01-08	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2019-12-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2019-12-26	nan	nan	nan	nan	nan	Sell	nan	nan	nan	Sell	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2019-12-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2019-12-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2019-12-31	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan

[1006 rows x 11 columns]},  
'recovery': {'Adjusted Close':

	XLB	XLI	XLF
Date			
2020-10-01	58.204086	76.750000	22.478214
2020-10-02	58.723595	77.610001	22.655355
2020-10-05	59.846115	78.860001	23.028282
2020-10-06	59.094677	77.900002	22.795206
2020-10-07	60.616112	79.620003	23.177458
...	...	...	...
2024-08-26	93.139999	129.139999	44.570000
2024-08-27	93.150002	129.220001	44.799999
2024-08-28	92.750000	129.160004	44.910000
2024-08-29	93.260002	130.070007	45.310001
2024-08-30	94.279999	131.460007	45.740002

	XLP	XLE	XLV	VOX	XLU	IYR
Date						
2020-10-01	58.330864	24.915936	99.164749	99.959457	53.327785	73.820297
2020-10-02	58.005085	25.156250	98.259117	98.270317	53.959038	74.999550
2020-10-05	58.394199	25.911543	100.277885	99.814690	54.634758	75.416824
2020-10-06	58.014137	25.525316	98.947754	98.057953	55.097076	74.945107
2020-10-07	58.638531	25.885790	100.815598	98.868752	55.434933	75.026749
...	...	...	...	...	...	...
2024-08-26	82.419998	91.199997	155.369995	139.779999	75.910004	98.989998
2024-08-27	82.620003	90.349998	155.610001	139.360001	75.309998	99.209999
2024-08-28	82.269997	89.769997	155.789993	138.529999	75.309998	98.860001
2024-08-29	81.860001	90.940002	156.119995	138.139999	75.720001	98.529999
2024-08-30	82.510002	91.279999	157.199997	139.160004	76.290001	99.529999

[985 rows x 11 columns],

'Bollinger Signal':

	XLB	XLI	XLF	XLK	XLY	XLP	XLE	XLV	VOX	XLU	IYR
Date											
2020-10-01	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-10-02	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-10-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-10-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-10-07	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
...	...	...	...	...	...	...	...	...	...	...	...
2024-08-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	Sell
2024-08-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	Sell
2024-08-28	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2024-08-29	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2024-08-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan

[985 rows x 11 columns]]}

```
[ ]: investment_history = {
    period: {ticker: pd.DataFrame() for ticker in sector_etf_tickers}
    for period in economic_cycle_periods
}

portfolio_tracking = pd.DataFrame(index = # different period,
    columns=['Balance', 'Share Ownership ($)', 'Portfolio Value', 'Profit'])
```

```
File "/var/folders/6q/lw13gkln44z1r6ncfrmc5w0000gn/T/ipykernel_37609/
2818256072.py", line 6
    portfolio_tracking = pd.DataFrame(index = # different period,
    columns=['Balance', 'Share Ownership ($)', 'Portfolio Value', 'Profit'])
```

```

SyntaxError: unexpected EOF while parsing
```



```
[ ]: portfolio_tracking
```

```
[ ]: Empty DataFrame
```

```
Columns: [Balance, Share Ownership ($), Portfolio Value, Profit]
```

```
Index: []
```

```
[ ]: def bollinger_portfolio_management_investment(tickers, periods,
↳portfolio_data, initial_investment):
    # Create an investment history dictionary for each period and stock
    investment_history = {
        period: {ticker: pd.DataFrame() for ticker in tickers}
        for period in periods
    }

    portfolio_investment = initial_investment

    # set initial parameters
    portfolio_balance = initial_investment
    shares_value = 0
    shares_number = 0
    investment_value = initial_investment
    profit = 0

    # create a front end dataframe which has the overall movement of the
↳portfolio
    investment_tracking = pd.DataFrame(index=period, columns=['Balance', 'Share
↳Ownership ($)', 'Value', 'Profit'])

    # Iterate through each period
    for period in periods:
        # Iterate over each row in the Bollinger Signal DataFrame
        for rowidx, row in portfolio_data[period]['Bollinger Signal'].
↳iterrows():
            # Iterate over each column (each stock in the row)
            for colidx, value in enumerate(row):
                ticker = tickers[colidx]
                # Get the adjusted close price for that stock at that row index
↳(date)
                adjusted_close_price = portfolio_data[period]['Adjusted Close'].
↳loc[rowidx, ticker]

    return investment_history
```

```
[ ]: for period in economic_cycle_periods_list:
    for rowidx,row in portfolio_data[period]['Bollinger Signal'].iterrows():
        for colidx,value in enumerate(row):
            if value=='Buy':
                print('Buy')
                print(sector_etf_tickers[colidx])
                print(portfolio_data[period]['Adjusted Close'].
↪loc[rowidx,sector_etf_tickers[colidx]])
            elif value=='Sell':
                print('Sell')
                print(sector_etf_tickers[colidx])
                print(portfolio_data[period]['Adjusted Close'].
↪loc[rowidx,sector_etf_tickers[colidx]])
            else:
                None
```

```
Sell
XLY
26.210721969604492
Sell
XLF
17.423065185546875
Sell
XLY
26.444021224975586
Sell
IYR
37.08415603637695
Sell
XLE
44.03150177001953
Sell
XLP
17.803354263305664
Sell
XLE
45.17207717895508
Sell
XLE
45.71234130859375
Buy
VOX
42.743247985839844
Sell
XLB
29.478361129760742
Sell
XLE
```

46.2465934753418  
Sell  
XLB  
29.617830276489258  
Sell  
XLP  
17.925077438354492  
Sell  
XLE  
47.0329704284668  
Buy  
XLV  
24.614351272583008  
Buy  
XLU  
20.86640167236328  
Buy  
XLF  
14.95754337310791  
Buy  
XLF  
14.875362396240234  
Buy  
XLF  
14.757952690124512  
Buy  
XLF  
14.247237205505371  
Buy  
XLY  
24.49711799621582  
Buy  
XLV  
24.09654426574707  
Buy  
IYR  
32.509010314941406  
Buy  
XLI  
25.5942325592041  
Buy  
XLF  
14.276586532592773  
Buy  
XLY  
24.263822555541992  
Buy  
XLV

23.818880081176758  
Buy  
XLB  
27.016592025756836  
Buy  
XLI  
25.184553146362305  
Buy  
XLF  
13.871535301208496  
Buy  
XLK  
17.24631118774414  
Buy  
XLY  
23.98224639892578  
Buy  
XLV  
23.2635498046875  
Buy  
VOX  
40.3145751953125  
Buy  
IYR  
32.302772521972656  
Buy  
XLV  
23.48868751525879  
Buy  
XLE  
43.3111572265625  
Buy  
XLB  
26.88408851623535  
Buy  
XLE  
42.44072341918945  
Sell  
XLK  
18.359865188598633  
Sell  
XLP  
17.98871612548828  
Sell  
IYR  
36.888771057128906  
Sell  
IYR

37.179622650146484  
Sell  
VOX  
44.08867263793945  
Sell  
XLU  
21.748994827270508  
Sell  
XLU  
22.028406143188477  
Sell  
XLU  
21.91105842590332  
Sell  
XLV  
24.09134864807129  
Sell  
XLE  
49.60660934448242  
Sell  
XLK  
18.86677360534668  
Sell  
XLK  
18.98558807373047  
Buy  
XLP  
17.808374404907227  
Sell  
XLK  
19.642990112304688  
Sell  
XLY  
26.793033599853516  
Sell  
VOX  
46.73813247680664  
Sell  
VOX  
46.94512176513672  
Sell  
XLK  
20.141984939575195  
Sell  
XLP  
18.355836868286133  
Sell  
XLB

32.11680221557617  
Sell  
XLP  
18.349395751953125  
Sell  
XLE  
53.549835205078125  
Sell  
XLP  
18.45244026184082  
Sell  
XLE  
53.880977630615234  
Sell  
XLU  
23.045442581176758  
Sell  
XLE  
54.4167594909668  
Sell  
XLU  
23.20191764831543  
Buy  
XLF  
14.723114013671875  
Buy  
XLI  
27.281723022460938  
Sell  
VOX  
48.290557861328125  
Buy  
XLI  
26.718608856201172  
Buy  
XLF  
13.805874824523926  
Buy  
XLF  
13.616508483886719  
Buy  
IYR  
36.36195373535156  
Buy  
XLV  
23.33001136779785  
Buy  
XLI

26.328765869140625  
Buy  
XLF  
13.261453628540039  
Buy  
XLK  
18.953901290893555  
Buy  
XLV  
23.096336364746094  
Buy  
VOX  
44.98561477661133  
Buy  
IYR  
35.75279998779297  
Buy  
XLV  
22.900344848632812  
Buy  
VOX  
44.86832046508789  
Buy  
XLP  
17.660247802734375  
Buy  
XLY  
24.23835563659668  
Buy  
XLP  
17.517032623291016  
Buy  
XLK  
18.690263748168945  
Buy  
XLY  
23.817951202392578  
Buy  
XLP  
17.452354431152344  
Buy  
IYR  
34.71561813354492  
Buy  
XLB  
30.127500534057617  
Buy  
XLB

29.473957061767578  
Buy  
XLU  
22.557621002197266  
Buy  
XLB  
29.44584083557129  
Buy  
XLI  
24.442983627319336  
Buy  
XLF  
12.280471801757812  
Buy  
XLK  
18.22161865234375  
Buy  
XLY  
23.130739212036133  
Buy  
XLP  
17.180662155151367  
Buy  
XLU  
22.366222381591797  
Buy  
XLB  
29.326358795166016  
Buy  
XLB  
28.785228729248047  
Buy  
XLB  
27.555395126342773  
Buy  
XLI  
23.898998260498047  
Buy  
XLB  
27.72406768798828  
Buy  
XLE  
49.9609375  
Buy  
IYR  
32.25191879272461  
Buy  
XLE



49.13397979736328  
Sell  
XLV  
23.552486419677734  
Buy  
XLE  
48.19839859008789  
Sell  
XLV  
23.666080474853516  
Sell  
XLV  
23.794818878173828  
Buy  
XLF  
10.578994750976562  
Buy  
XLF  
10.250639915466309  
Buy  
XLE  
47.60686111450195  
Buy  
XLE  
46.38151931762695  
Buy  
XLU  
22.017183303833008  
Buy  
XLE  
45.6209831237793  
Sell  
XLV  
24.014446258544922  
Buy  
XLU  
21.668155670166016  
Buy  
XLU  
21.690673828125  
Buy  
XLU  
21.465486526489258  
Sell  
XLB  
28.58846664428711  
Sell  
XLP

18.002180099487305  
Buy  
XLB  
26.655858993530273  
Sell  
XLP  
18.163896560668945  
Sell  
XLV  
25.006526947021484  
Sell  
XLK  
18.22956085205078  
Sell  
XLP  
18.357955932617188  
Sell  
XLV  
25.104982376098633  
Sell  
XLK  
18.547285079956055  
Sell  
XLY  
24.56175994873047  
Sell  
XLP  
18.37737274169922  
Sell  
XLV  
25.233718872070312  
Sell  
XLK  
18.66642951965332  
Sell  
XLY  
25.313642501831055  
Sell  
XLP  
18.539079666137695  
Sell  
VOX  
43.122718811035156  
Sell  
XLK  
18.706146240234375  
Sell  
XLP

18.66844940185547  
Sell  
XLU  
21.4992618560791  
Buy  
XLK  
17.729137420654297  
Buy  
XLB  
26.128774642944336  
Buy  
XLI  
24.493755340576172  
Buy  
XLK  
17.09368133544922  
Buy  
XLV  
24.249208450317383  
Buy  
XLU  
20.350833892822266  
Buy  
XLB  
26.156898498535156  
Buy  
XLI  
24.48649024963379  
Buy  
XLK  
17.09368133544922  
Buy  
XLV  
24.120466232299805  
Buy  
XLU  
19.922985076904297  
Buy  
XLB  
26.107702255249023  
Sell  
XLF  
13.540157318115234  
Buy  
XLB  
25.278438568115234  
Buy  
XLI

24.14560890197754  
Buy  
XLE  
38.17844009399414  
Buy  
XLU  
19.782245635986328  
Buy  
XLI  
23.746685028076172  
Buy  
XLF  
11.396895408630371  
Buy  
XLK  
16.44234848022461  
Buy  
XLV  
23.85540008544922  
Buy  
VOX  
39.37620162963867  
Buy  
VOX  
39.17612838745117  
Buy  
XLI  
23.014122009277344  
Buy  
XLF  
11.074511528015137  
Buy  
XLK  
15.822779655456543  
Buy  
XLY  
23.56732177734375  
Buy  
XLV  
23.43888282775879  
Buy  
VOX  
36.97514724731445  
Buy  
XLU  
18.577518463134766  
Sell  
IYR

37.25213623046875  
Buy  
XLY  
23.496217727661133  
Buy  
XLY  
23.163558959960938  
Buy  
XLP  
17.701416015625  
Buy  
XLV  
22.876056671142578  
Buy  
XLY  
23.082439422607422  
Buy  
XLB  
23.116411209106445  
Buy  
XLK  
15.143779754638672  
Buy  
XLY  
22.1494083404541  
Buy  
XLP  
17.362756729125977  
Buy  
XLE  
36.12154006958008  
Buy  
XLB  
23.611270904541016  
Buy  
XLB  
23.222455978393555  
Buy  
XLB  
21.554113388061523  
Buy  
XLI  
20.61660385131836  
Buy  
XLK  
15.06407356262207  
Buy  
XLE

35.552310943603516  
Buy  
IYR  
31.98011016845703  
Buy  
XLB  
21.342037200927734  
Buy  
XLI  
20.288433074951172  
Buy  
XLK  
14.848868370056152  
Buy  
XLY  
21.054109573364258  
Buy  
XLE  
35.1284294128418  
Buy  
IYR  
30.27330207824707  
Buy  
XLB  
20.288719177246094  
Buy  
XLI  
19.756061553955078  
Buy  
XLF  
10.72862720489502  
Buy  
XLK  
14.027922630310059  
Buy  
XLY  
20.461830139160156  
Buy  
XLE  
33.239070892333984  
Buy  
XLV  
21.71209716796875  
Buy  
VOX  
33.5184326171875  
Buy  
XLU

17.35044288635254  
Buy  
IYR  
29.717470169067383  
Buy  
XLB  
19.24247169494629  
Buy  
XLI  
19.099712371826172  
Buy  
XLF  
9.595494270324707  
Buy  
XLK  
13.310582160949707  
Buy  
XLY  
19.14748191833496  
Buy  
XLP  
16.672420501708984  
Buy  
XLE  
31.416357040405273  
Buy  
XLV  
21.187175750732422  
Buy  
VOX  
32.08331298828125  
Buy  
XLU  
16.640514373779297  
Buy  
IYR  
27.20780372619629  
Buy  
XLI  
18.808000564575195  
Buy  
XLF  
9.209745407104492  
Buy  
XLK  
13.191025733947754  
Buy  
XLY

18.774259567260742  
Buy  
XLP  
16.216533660888672  
Buy  
XLV  
20.806798934936523  
Buy  
VOX  
30.786170959472656  
Buy  
XLU  
16.350868225097656  
Buy  
IYR  
26.75301742553711  
Buy  
XLI  
17.7359676361084  
Buy  
XLF  
8.251397132873535  
Buy  
XLK  
12.752649307250977  
Buy  
XLY  
17.58159637451172  
Buy  
XLP  
15.239627838134766  
Buy  
XLE  
27.401504516601562  
Buy  
XLV  
19.20919418334961  
Buy  
VOX  
28.840473175048828  
Buy  
XLU  
15.24907398223877  
Buy  
IYR  
24.838491439819336  
Buy  
XLI



17.167131423950195  
Buy  
XLP  
15.369880676269531  
Buy  
XLE  
26.281227111816406  
Buy  
XLV  
18.364755630493164  
Buy  
VOX  
27.998720169067383  
Buy  
XLU  
14.630027770996094  
Buy  
XLF  
7.534149646759033  
Buy  
XLY  
15.1719388961792  
Buy  
XLI  
14.986605644226074  
Buy  
XLF  
6.3407416343688965  
Buy  
XLV  
18.448440551757812  
Buy  
IYR  
15.5633544921875  
Buy  
XLB  
14.0536527633667  
Buy  
XLI  
14.585500717163086  
Buy  
XLF  
5.659652233123779  
Buy  
XLK  
10.512969017028809  
Buy  
XLY

13.249077796936035  
Buy  
XLP  
14.28878402709961  
Buy  
XLE  
24.198102951049805  
Buy  
XLV  
17.923511505126953  
Buy  
VOX  
24.479904174804688  
Buy  
XLU  
14.885600090026855  
Buy  
IYR  
14.204646110534668  
Buy  
XLV  
17.946338653564453  
Sell  
XLV  
19.825410842895508  
Sell  
XLI  
17.245576858520508  
Sell  
XLP  
15.678483009338379  
Sell  
XLI  
17.878854751586914  
Sell  
XLK  
12.812872886657715  
Sell  
XLY  
18.516353607177734  
Sell  
XLP  
15.901805877685547  
Sell  
XLV  
20.73455810546875  
Sell  
XLU

17.08658790588379  
Sell  
XLI  
17.738937377929688  
Sell  
XLY  
18.434602737426758  
Sell  
XLP  
15.967488288879395  
Sell  
XLE  
31.244552612304688  
Sell  
XLU  
17.3281307220459  
Sell  
XLI  
18.12921142578125  
Sell  
XLK  
13.069286346435547  
Sell  
XLY  
18.74525260925293  
Sell  
XLE  
31.585418701171875  
Sell  
VOX  
33.122535705566406  
Buy  
XLF  
6.698455333709717  
Buy  
IYR  
18.541288375854492  
Buy  
XLF  
6.3987040519714355  
Buy  
IYR  
18.10943031311035  
Buy  
XLF  
6.105075836181641  
Buy  
XLF

5.921554088592529  
Buy  
XLF  
4.942785263061523  
Buy  
IYR  
17.228429794311523  
Sell  
XLV  
20.726905822753906  
Buy  
XLP  
14.338556289672852  
Sell  
XLK  
12.796844482421875  
Sell  
XLV  
20.979494094848633  
Sell  
XLK  
12.828900337219238  
Buy  
XLP  
14.174349784851074  
Buy  
IYR  
16.35894775390625  
Buy  
XLI  
14.219132423400879  
Buy  
XLF  
4.875495433807373  
Buy  
XLY  
14.935705184936523  
Buy  
XLP  
13.957594871520996  
Buy  
XLE  
26.624513626098633  
Buy  
VOX  
29.129026412963867  
Buy  
XLU

15.608549118041992  
Buy  
IYR  
15.328229904174805  
Buy  
XLI  
14.241222381591797  
Buy  
XLF  
4.875495433807373  
Buy  
XLY  
14.837608337402344  
Buy  
XLE  
26.472347259521484  
Buy  
VOX  
28.59514808654785  
Buy  
XLU  
15.372750282287598  
Buy  
IYR  
15.391571044921875  
Buy  
XLI  
13.92458724975586  
Buy  
XLF  
4.618566989898682  
Buy  
XLY  
14.68228816986084  
Buy  
VOX  
28.716156005859375  
Buy  
XLU  
15.44176197052002  
Buy  
IYR  
14.798483848571777  
Buy  
XLI  
13.711042404174805  
Buy  
XLF

4.551278114318848  
Buy  
XLE  
25.79669189453125  
Buy  
XLU  
15.090948104858398  
Buy  
XLB  
13.76672077178955  
Buy  
XLI  
13.18085765838623  
Buy  
XLF  
4.3922271728515625  
Buy  
XLK  
11.11410140991211  
Buy  
XLY  
14.257182121276855  
Buy  
XLP  
13.629181861877441  
Buy  
XLE  
24.591463088989258  
Buy  
XLV  
19.40278434753418  
Buy  
VOX  
28.05413246154785  
Buy  
XLU  
14.728621482849121  
Buy  
XLV  
19.287961959838867  
Buy  
XLV  
18.323577880859375  
Buy  
XLV  
17.588788986206055  
Buy  
XLB

12.936713218688965  
Buy  
XLI  
11.767047882080078  
Buy  
XLP  
13.116852760314941  
Buy  
XLE  
23.20362663269043  
Buy  
XLV  
16.831050872802734  
Buy  
XLP  
12.959218978881836  
Buy  
XLV  
16.79277801513672  
Buy  
VOX  
27.057544708251953  
Buy  
VOX  
26.032472610473633  
Sell  
XLF  
5.756388187408447  
Sell  
XLK  
12.267987251281738  
Sell  
XLY  
15.728682518005371  
Sell  
VOX  
31.079509735107422  
Sell  
XLE  
27.379304885864258  
Sell  
XLB  
16.12531089782715  
Sell  
XLK  
12.82914924621582  
Sell  
XLY

16.323022842407227  
Sell  
XLE  
28.474462509155273  
Sell  
VOX  
32.339481353759766  
Sell  
XLI  
14.609048843383789  
Sell  
XLY  
16.972328186035156  
Sell  
IYR  
17.25750160217285  
Sell  
IYR  
16.980775833129883  
Sell  
XLF  
6.567923545837402  
Sell  
IYR  
17.946393966674805  
Sell  
XLF  
6.845962047576904  
Sell  
IYR  
18.176023483276367  
Sell  
XLV  
19.05331802368164  
Sell  
XLB  
18.06898307800293  
Sell  
XLB  
18.479318618774414  
Sell  
XLK  
14.077434539794922  
Sell  
XLE  
28.914995193481445  
Sell  
XLU



15.426271438598633  
Sell  
XLB  
19.56633758544922  
Sell  
XLI  
16.891477584838867  
Sell  
XLK  
14.335140228271484  
Sell  
XLY  
19.668174743652344  
Sell  
XLP  
14.819908142089844  
Sell  
XLE  
30.071340560913086  
Sell  
VOX  
34.5960693359375  
Sell  
XLU  
15.65886402130127  
Sell  
XLB  
19.451152801513672  
Sell  
XLE  
29.667543411254883  
Sell  
XLV  
19.114927291870117  
Sell  
VOX  
34.80250549316406  
Sell  
XLU  
15.629788398742676  
Sell  
XLI  
17.211164474487305  
Sell  
XLF  
7.710977077484131  
Sell  
XLE

30.817773818969727  
Sell  
VOX  
35.058773040771484  
Sell  
XLV  
19.38446807861328  
Sell  
XLI  
17.478818893432617  
Sell  
XLF  
8.044625282287598  
Sell  
XLP  
15.037956237792969  
Sell  
XLE  
31.71714973449707  
Sell  
XLV  
19.707937240600586  
Sell  
XLU  
15.844930648803711  
Sell  
XLP  
15.143664360046387  
Sell  
XLB  
20.156641006469727  
Sell  
XLK  
14.617011070251465  
Sell  
XLP  
15.57973575592041  
Sell  
XLE  
32.78175735473633  
Sell  
XLB  
20.358211517333984  
Sell  
XLP  
15.738313674926758  
Sell  
XLE

32.69608688354492  
Sell  
XLV  
20.146913528442383  
Sell  
XLU  
16.385690689086914  
Buy  
XLV  
19.13032341003418  
Buy  
XLB  
17.911800384521484  
Buy  
XLF  
7.0427398681640625  
Buy  
XLE  
28.74913787841797  
Buy  
IYR  
18.2761173248291  
Buy  
XLE  
28.921310424804688  
Sell  
VOX  
35.73502731323242  
Sell  
VOX  
35.856040954589844  
Buy  
XLB  
44.260658264160156  
Buy  
XLI  
61.03277587890625  
Buy  
XLF  
20.8391056060791  
Buy  
XLK  
78.78870391845703  
Buy  
XLY  
103.3387222290039  
Buy  
XLE

27.67645263671875  
Buy  
VOX  
77.8409423828125  
Buy  
IYR  
75.13090515136719  
Buy  
XLE  
28.98932647705078  
Buy  
XLE  
27.45627784729004  
Buy  
XLU  
52.65126419067383  
Buy  
IYR  
73.48971557617188  
Buy  
XLB  
39.64484786987305  
Buy  
XLI  
54.175048828125  
Buy  
XLF  
18.60993766784668  
Buy  
XLK  
72.25811004638672  
Buy  
XLY  
92.67107391357422  
Buy  
XLP  
46.30193328857422  
Buy  
XLE  
24.0313777923584  
Buy  
XLV  
78.94111633300781  
Buy  
VOX  
70.62300872802734  
Buy  
XLU

47.336795806884766  
Buy  
IYR  
66.33057403564453  
Buy  
XLB  
37.756561279296875  
Buy  
XLI  
51.78087615966797  
Buy  
XLK  
69.58262634277344  
Buy  
XLY  
85.9376449584961  
Buy  
XLP  
46.83445739746094  
Buy  
XLV  
76.09186553955078  
Buy  
VOX  
68.02942657470703  
Buy  
XLU  
44.24679183959961  
Buy  
IYR  
59.845680236816406  
Buy  
IYR  
56.49232482910156  
Buy  
XLP  
44.731040954589844  
Buy  
XLU  
41.390480041503906  
Buy  
XLP  
43.40730667114258  
Buy  
XLV  
69.81806945800781  
Buy  
XLU

39.27839279174805  
Sell  
XLP  
40.57829284667969  
Sell  
XLU  
34.80690002441406  
Sell  
XLU  
34.9587287902832  
Sell  
XLU  
35.39143371582031  
Sell  
XLB  
34.63648223876953  
Buy  
XLY  
63.79786682128906  
Buy  
XLV  
55.94144058227539  
Buy  
XLY  
62.56119918823242  
Buy  
XLV  
55.17701721191406  
Buy  
IYR  
52.138118743896484  
Buy  
XLY  
62.46116638183594  
Buy  
IYR  
51.29481887817383  
Buy  
XLY  
62.35205078125  
Buy  
IYR  
51.563148498535156  
Buy  
XLF  
13.547799110412598  
Buy  
IYR

50.8041877746582  
Sell  
XLI  
44.0406494140625  
Sell  
XLI  
44.674072265625  
Sell  
XLP  
41.287391662597656  
Sell  
XLB  
36.14572525024414  
Sell  
XLF  
15.022483825683594  
Sell  
VOX  
77.46353912353516  
Sell  
XLF  
15.187870979309082  
Sell  
XLE  
41.63416290283203  
Sell  
VOX  
78.56533813476562  
Sell  
XLF  
15.291236877441406  
Sell  
XLE  
42.26414489746094  
Sell  
XLE  
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Sell  
XLE  
43.67107391357422  
Sell  
XLU  
36.31760025024414  
Sell  
XLU  
36.484622955322266  
Sell  
XLU

37.228580474853516  
Sell  
XLI  
47.4560432434082  
Sell  
XLU  
37.43355178833008  
Sell  
XLI  
47.86300277709961  
Sell  
XLI  
48.146934509277344  
Sell  
VOX  
80.68220520019531  
Sell  
XLP  
42.71691131591797  
Sell  
VOX  
80.90027618408203  
Sell  
VOX  
80.88284301757812  
Sell  
XLP  
42.9411506652832  
Sell  
VOX  
81.75516510009766  
Sell  
XLV  
60.47483825683594  
Sell  
VOX  
81.66792297363281  
Sell  
XLV  
61.2943000793457  
Sell  
XLE  
45.08967971801758  
Sell  
XLB  
38.74171447753906  
Sell  
XLF



15.871309280395508  
Sell  
XLB  
39.12245178222656  
Sell  
XLY  
73.26412963867188  
Sell  
XLB  
39.96006393432617  
Sell  
XLI  
48.611534118652344  
Sell  
XLF  
16.1689395904541  
Sell  
XLE  
46.443199157714844  
Sell  
XLB  
39.841617584228516  
Sell  
XLF  
16.293529510498047  
Sell  
XLE  
46.85914993286133  
Buy  
XLU  
36.65951156616211  
Buy  
XLP  
41.4595947265625  
Buy  
XLU  
35.894657135009766  
Buy  
IYR  
58.82623291015625  
Buy  
XLK  
39.3873405456543  
Buy  
XLP  
41.611759185791016  
Buy  
XLU

36.21589660644531  
Buy  
XLK  
39.39640426635742  
Buy  
XLK  
39.20600509643555  
Buy  
XLK  
39.024658203125  
Buy  
XLK  
38.53504180908203  
Buy  
XLK  
38.19956588745117  
Sell  
IYR  
61.688804626464844  
Sell  
IYR  
62.18528366088867  
Sell  
XLY  
73.51976776123047  
Sell  
XLP  
43.293514251708984  
Sell  
IYR  
62.301639556884766  
Buy  
XLY  
71.31929779052734  
Buy  
XLY  
70.95408630371094  
Buy  
XLY  
70.54320526123047  
Buy  
VOX  
79.31262969970703  
Buy  
XLY  
70.47929382324219  
Buy  
VOX

78.62347412109375  
Sell  
XLK  
39.39640426635742  
Sell  
XLB  
40.36618423461914  
Sell  
XLF  
16.466567993164062  
Sell  
XLK  
39.66841125488281  
Sell  
XLK  
39.79534912109375  
Sell  
XLF  
16.48041343688965  
Sell  
XLK  
39.98575210571289  
Sell  
XLV  
62.052738189697266  
Sell  
XLK  
40.0673713684082  
Sell  
XLV  
62.2009391784668  
Sell  
XLV  
62.4276237487793  
Sell  
XLV  
63.229637145996094  
Sell  
XLB  
40.73844528198242  
Sell  
XLE  
47.94478225708008  
Sell  
XLI  
48.861045837402344  
Sell  
XLE

49.030433654785156  
Sell  
XLI  
49.1707878112793  
Sell  
XLE  
48.917640686035156  
Buy  
XLF  
15.684425354003906  
Buy  
XLF  
15.705195426940918  
Sell  
VOX  
82.06048583984375  
Sell  
VOX  
82.26113891601562  
Sell  
VOX  
82.94153594970703  
Sell  
VOX  
83.5761947631836  
Sell  
VOX  
84.8665771484375  
Sell  
IYR  
62.51294708251953  
Buy  
XLB  
39.13102340698242  
Buy  
XLI  
47.04549026489258  
Buy  
XLF  
15.3646879196167  
Buy  
XLK  
38.52219772338867  
Buy  
XLY  
69.79479217529297  
Buy  
XLV

60.665775299072266  
Buy  
XLB  
37.813045501708984  
Buy  
XLI  
45.938148498535156  
Buy  
XLF  
14.926297187805176  
Buy  
XLK  
37.747745513916016  
Buy  
XLY  
68.51195526123047  
Buy  
XLE  
45.86910629272461  
Buy  
XLV  
59.851749420166016  
Buy  
XLB  
38.13616180419922  
Sell  
IYR  
62.974796295166016  
Sell  
IYR  
63.781063079833984  
Sell  
XLP  
44.43217086791992  
Sell  
VOX  
86.37642669677734  
Sell  
XLU  
40.460227966308594  
Sell  
IYR  
64.49337768554688  
Sell  
XLP  
44.222694396972656  
Sell  
VOX

86.73628997802734  
Sell  
XLU  
40.46794891357422  
Sell  
IYR  
64.44642639160156  
Sell  
XLP  
44.472450256347656  
Sell  
XLU  
40.7686767578125  
Sell  
IYR  
64.93956756591797  
Sell  
XLP  
44.51272964477539  
Sell  
XLU  
40.85349655151367  
Sell  
XLY  
73.87232971191406  
Sell  
XLV  
64.49951171875  
Sell  
XLY  
74.3030014038086  
Buy  
XLP  
43.65873336791992  
Buy  
XLP  
43.85208511352539  
Buy  
XLE  
46.238101959228516  
Sell  
XLF  
16.714664459228516  
Buy  
VOX  
86.28861999511719  
Buy  
XLU

39.118499755859375  
Sell  
XLF  
16.735538482666016  
Buy  
VOX  
85.96385192871094  
Buy  
XLU  
39.10308074951172  
Sell  
XLF  
16.749454498291016  
Buy  
XLV  
64.98090362548828  
Buy  
VOX  
83.5849838256836  
Buy  
XLU  
38.19315719604492  
Buy  
IYR  
64.67342376708984  
Buy  
VOX  
83.47085571289062  
Sell  
XLE  
50.3822135925293  
Buy  
IYR  
64.2037582397461  
Sell  
XLB  
41.95402908325195  
Buy  
XLV  
64.25443267822266  
Buy  
XLV  
63.711761474609375  
Buy  
XLP  
43.75541305541992  
Buy  
XLV

63.95683670043945  
Buy  
XLU  
37.900142669677734  
Sell  
XLF  
17.076522827148438  
Buy  
XLU  
37.80760192871094  
Sell  
XLF  
17.090435028076172  
Sell  
XLK  
43.1415901184082  
Sell  
XLK  
43.36024856567383  
Sell  
XLK  
43.46958541870117  
Sell  
XLE  
50.97828674316406  
Buy  
XLB  
40.33845138549805  
Buy  
XLI  
49.415931701660156  
Buy  
XLK  
42.057342529296875  
Buy  
XLY  
71.8656234741211  
Buy  
XLP  
42.45024108886719  
Buy  
XLV  
62.59139633178711  
Buy  
VOX  
81.65379333496094  
Buy  
XLU



37.368064880371094  
Buy  
IYR  
62.51294708251953  
Buy  
XLB  
40.72108459472656  
Buy  
XLB  
39.96432113647461  
Buy  
XLI  
49.31211471557617  
Buy  
XLY  
71.8381576538086  
Buy  
XLP  
42.71610641479492  
Buy  
VOX  
81.85569763183594  
Buy  
IYR  
61.73017883300781  
Buy  
XLB  
39.87078094482422  
Buy  
XLI  
49.26885223388672  
Buy  
XLY  
71.84732055664062  
Buy  
XLP  
42.58720397949219  
Buy  
XLE  
47.94824981689453  
Buy  
IYR  
61.918033599853516  
Sell  
XLU  
39.405426025390625  
Sell  
XLK

43.83237075805664  
Sell  
XLU  
39.64649200439453  
Buy  
XLU  
36.77682876586914  
Buy  
IYR  
60.414730072021484  
Sell  
XLF  
16.973098754882812  
Buy  
XLV  
61.84962463378906  
Buy  
XLV  
61.55965042114258  
Buy  
XLB  
39.460933685302734  
Buy  
XLV  
61.58602523803711  
Buy  
XLV  
61.17304611206055  
Buy  
XLY  
71.9648666381836  
Buy  
XLV  
60.97096252441406  
Buy  
VOX  
80.78868103027344  
Buy  
VOX  
80.11576080322266  
Buy  
IYR  
59.4990234375  
Buy  
XLV  
59.55629348754883  
Buy  
XLE

48.9876594543457  
Buy  
XLV  
59.18724060058594  
Sell  
XLU  
38.44108200073242  
Buy  
XLK  
43.00898361206055  
Buy  
XLY  
71.33020782470703  
Buy  
XLV  
58.87092971801758  
Buy  
VOX  
79.36310577392578  
Buy  
IYR  
59.167442321777344  
Buy  
XLK  
42.73451614379883  
Buy  
XLY  
70.89791107177734  
Buy  
XLE  
48.45224380493164  
Buy  
VOX  
77.37966918945312  
Buy  
IYR  
58.409584045410156  
Buy  
XLI  
49.07709503173828  
Buy  
XLK  
42.32280731201172  
Buy  
XLY  
70.71397399902344  
Buy  
XLV

58.00983428955078  
Buy  
VOX  
77.51251983642578  
Buy  
IYR  
58.070125579833984  
Buy  
XLK  
42.24961853027344  
Buy  
XLP  
41.83763122558594  
Sell  
XLI  
50.3297004699707  
Sell  
XLF  
17.19687271118164  
Sell  
XLI  
50.6341438293457  
Sell  
XLB  
41.247222900390625  
Sell  
XLI  
51.90412521362305  
Sell  
XLF  
17.93708038330078  
Buy  
XLU  
36.831268310546875  
Sell  
XLB  
41.72584915161133  
Sell  
XLI  
53.00884246826172  
Sell  
XLF  
18.599828720092773  
Buy  
XLP  
41.010780334472656  
Buy  
XLU

35.9447021484375  
Sell  
XLI  
53.104515075683594  
Sell  
XLF  
18.651473999023438  
Buy  
XLP  
40.97023391723633  
Buy  
XLU  
35.79695129394531  
Sell  
XLI  
53.3306770324707  
Sell  
XLF  
19.107646942138672  
Buy  
XLK  
42.10323715209961  
Buy  
XLP  
40.89728546142578  
Buy  
XLU  
35.77362060546875  
Sell  
XLI  
53.53074264526367  
Sell  
XLF  
19.090425491333008  
Sell  
XLE  
51.27212905883789  
Sell  
XLY  
74.91741180419922  
Sell  
XLE  
51.986026763916016  
Sell  
XLY  
76.06716918945312  
Sell  
VOX

83.73725891113281  
Sell  
VOX  
84.29507446289062  
Sell  
VOX  
84.79976654052734  
Sell  
XLB  
43.71726608276367  
Sell  
XLI  
55.71408462524414  
Sell  
XLF  
20.20934295654297  
Sell  
IYR  
60.77785110473633  
Sell  
XLB  
44.00786590576172  
Sell  
XLF  
20.398696899414062  
Sell  
IYR  
61.085758209228516  
Sell  
XLF  
20.44173240661621  
Sell  
XLP  
42.186214447021484  
Sell  
IYR  
61.038387298583984  
Sell  
XLP  
42.35645294189453  
Sell  
XLU  
37.68671798706055  
Sell  
IYR  
61.417301177978516  
Sell  
XLK

44.93024444580078  
Sell  
XLP  
42.55101013183594  
Sell  
XLU  
38.0755615234375  
Sell  
XLV  
62.120948791503906  
Sell  
VOX  
92.92739868164062  
Sell  
IYR  
62.68700408935547  
Sell  
XLV  
62.43864822387695  
Sell  
IYR  
62.90313720703125  
Sell  
XLV  
62.61516189575195  
Buy  
XLE  
53.674686431884766  
Sell  
XLV  
62.87990951538086  
Buy  
XLP  
42.01083755493164  
Buy  
XLE  
53.18667221069336  
Sell  
XLV  
63.10055160522461  
Sell  
XLB  
43.919952392578125  
Sell  
XLK  
45.60637283325195  
Buy  
XLF

19.84286880493164  
Sell  
XLU  
38.50698471069336  
Sell  
XLP  
42.94186782836914  
Sell  
XLB  
45.176025390625  
Sell  
XLI  
55.76646041870117  
Sell  
XLP  
43.21137619018555  
Sell  
XLB  
45.477142333984375  
Sell  
XLI  
56.35282897949219  
Sell  
XLK  
46.57123947143555  
Sell  
XLB  
45.59759521484375  
Sell  
XLI  
56.48410415649414  
Sell  
XLI  
56.440338134765625  
Buy  
XLE  
52.29676818847656  
Buy  
XLE  
52.31829071044922  
Sell  
XLU  
38.616920471191406  
Buy  
XLE  
51.93075180053711  
Buy  
VOX



88.21546173095703  
Buy  
IYR  
60.94192123413086  
Buy  
VOX  
87.33195495605469  
Buy  
VOX  
86.805419921875  
Buy  
XLE  
51.49296569824219  
Buy  
VOX  
86.51986694335938  
Sell  
XLU  
38.789669036865234  
Sell  
XLY  
79.32102966308594  
Sell  
XLI  
57.2192497253418  
Sell  
XLF  
20.793941497802734  
Sell  
XLU  
38.89174270629883  
Sell  
IYR  
63.07125473022461  
Sell  
XLI  
57.24551773071289  
Sell  
XLF  
21.036035537719727  
Sell  
XLY  
79.86691284179688  
Sell  
XLI  
57.55183029174805  
Sell  
XLF

21.20030975341797  
Sell  
XLY  
80.28326416015625  
Sell  
XLP  
44.199588775634766  
Sell  
XLV  
65.00682067871094  
Sell  
XLP  
44.477264404296875  
Sell  
XLK  
48.20694351196289  
Sell  
XLY  
80.59786224365234  
Sell  
XLP  
44.87744140625  
Sell  
XLU  
39.33146667480469  
Sell  
IYR  
63.85572814941406  
Sell  
XLU  
39.49635314941406  
Sell  
XLU  
39.9046630859375  
Sell  
XLU  
40.50928497314453  
Sell  
XLU  
40.28157424926758  
Sell  
XLU  
40.65062713623047  
Sell  
XLB  
45.82987594604492  
Sell  
XLF

21.82282829284668  
Buy  
VOX  
84.77071380615234  
Buy  
XLE  
49.985843658447266  
Buy  
VOX  
84.33340454101562  
Buy  
IYR  
61.422218322753906  
Buy  
IYR  
61.270118713378906  
Sell  
XLY  
80.97720336914062  
Buy  
XLI  
56.75849533081055  
Buy  
XLF  
20.451560974121094  
Buy  
XLF  
20.408172607421875  
Sell  
XLU  
41.03076171875  
Buy  
XLF  
20.451560974121094  
Sell  
XLY  
81.39576721191406  
Sell  
XLY  
81.60920715332031  
Sell  
IYR  
64.402587890625  
Sell  
IYR  
64.75816345214844  
Buy  
XLB

44.28254318237305  
Buy  
XLI  
56.28373718261719  
Buy  
XLF  
19.87020492553711  
Buy  
XLK  
48.30958938598633  
Sell  
XLP  
45.3433837890625  
Sell  
IYR  
65.29156494140625  
Sell  
XLP  
45.54863739013672  
Buy  
XLV  
65.04764556884766  
Buy  
XLE  
48.95003890991211  
Buy  
XLV  
65.24250030517578  
Sell  
XLY  
82.0824966430664  
Sell  
XLI  
58.32339859008789  
Sell  
XLK  
49.62870788574219  
Sell  
XLY  
82.42584991455078  
Sell  
XLP  
45.565059661865234  
Sell  
XLB  
46.302059173583984  
Sell  
XLI

58.60474395751953  
Sell  
XLK  
49.88701248168945  
Sell  
XLY  
83.07547760009766  
Sell  
XLP  
45.74567413330078  
Sell  
XLB  
46.29342269897461  
Sell  
XLI  
58.613525390625  
Sell  
XLY  
83.46524047851562  
Sell  
XLV  
66.55335998535156  
Sell  
XLK  
50.034603118896484  
Sell  
XLY  
83.91069793701172  
Sell  
XLV  
66.6950912475586  
Sell  
XLK  
50.163753509521484  
Sell  
XLV  
66.87220001220703  
Sell  
XLK  
50.54196548461914  
Sell  
XLV  
67.02277374267578  
Sell  
XLK  
50.65266036987305  
Sell  
XLV

67.20880889892578  
Buy  
VOX  
85.02811431884766  
Buy  
VOX  
83.33599090576172  
Buy  
IYR  
62.97213363647461  
Buy  
XLB  
44.84351348876953  
Buy  
XLI  
57.3299446105957  
Buy  
XLF  
20.009031295776367  
Buy  
XLY  
81.7948226928711  
Buy  
XLI  
57.40907287597656  
Buy  
XLF  
20.087129592895508  
Sell  
XLP  
45.69641876220703  
Sell  
XLU  
41.56085205078125  
Sell  
XLP  
45.74567413330078  
Sell  
XLU  
41.67161560058594  
Sell  
XLP  
45.926292419433594  
Sell  
XLU  
41.90898132324219  
Sell  
XLK

52.03635787963867  
Sell  
XLP  
46.2136344909668  
Buy  
XLE  
48.01146697998047  
Sell  
XLU  
42.249183654785156  
Sell  
XLP  
46.386051177978516  
Sell  
XLU  
42.249183654785156  
Sell  
XLP  
46.369632720947266  
Buy  
XLE  
47.44832992553711  
Sell  
XLU  
42.38368225097656  
Sell  
XLP  
46.500972747802734  
Buy  
XLE  
47.246185302734375  
Sell  
XLU  
42.59730911254883  
Sell  
XLB  
46.362457275390625  
Sell  
XLY  
85.29341125488281  
Sell  
XLP  
46.878639221191406  
Sell  
XLV  
68.12994384765625  
Sell  
VOX

85.49610137939453  
Sell  
XLU  
42.89795684814453  
Sell  
XLB  
46.47466278076172  
Sell  
XLK  
52.75587463378906  
Sell  
XLY  
85.59965515136719  
Sell  
XLP  
47.01820373535156  
Buy  
XLE  
46.99348068237305  
Sell  
XLV  
68.57280731201172  
Sell  
VOX  
86.12616729736328  
Sell  
IYR  
64.6046371459961  
Sell  
XLV  
68.3779296875  
Sell  
XLB  
47.14783477783203  
Sell  
XLF  
21.076297760009766  
Sell  
XLF  
21.119680404663086  
Sell  
XLB  
47.5534553527832  
Sell  
XLF  
21.232481002807617  
Sell  
XLF



21.267187118530273  
Sell  
IYR  
65.65525817871094  
Sell  
XLI  
61.03739929199219  
Sell  
XLV  
70.92594146728516  
Buy  
XLP  
45.89157485961914  
Sell  
XLV  
71.66400909423828  
Sell  
XLV  
71.55731201171875  
Buy  
XLP  
45.69302749633789  
Buy  
XLU  
41.84221267700195  
Buy  
XLP  
45.3703727722168  
Buy  
XLU  
41.507225036621094  
Buy  
XLU  
41.443416595458984  
Sell  
XLF  
21.801456451416016  
Buy  
XLU  
41.25198745727539  
Buy  
XLU  
41.05258560180664  
Buy  
XLY  
82.29559326171875  
Buy  
IYR

63.85867691040039  
Buy  
IYR  
64.16850280761719  
Buy  
IYR  
63.695621490478516  
Buy  
IYR  
63.62222671508789  
Sell  
XLB  
47.71556091308594  
Sell  
XLB  
47.663536071777344  
Sell  
XLB  
47.90631103515625  
Sell  
XLB  
48.0016975402832  
Sell  
XLY  
84.53890991210938  
Sell  
XLB  
48.26182174682617  
Sell  
XLY  
84.94849395751953  
Sell  
XLE  
47.94944381713867  
Sell  
XLV  
72.09976196289062  
Sell  
XLP  
46.17287063598633  
Sell  
XLE  
48.378334045410156  
Sell  
VOX  
85.75906372070312  
Sell  
VOX

85.19648742675781  
Sell  
XLF  
22.010496139526367  
Sell  
XLF  
22.045331954956055  
Sell  
XLF  
22.115013122558594  
Buy  
XLB  
46.97854232788086  
Buy  
XLB  
46.48429489135742  
Buy  
XLI  
59.9067497253418  
Buy  
XLK  
52.52387237548828  
Buy  
XLY  
83.21712493896484  
Buy  
XLV  
69.69878387451172  
Buy  
IYR  
64.7148208618164  
Buy  
XLB  
46.371578216552734  
Buy  
XLY  
83.64532470703125  
Buy  
XLE  
46.48100280761719  
Buy  
IYR  
64.4049301147461  
Buy  
XLE  
46.3428840637207  
Buy  
XLY

83.46845245361328  
Buy  
XLE  
46.168426513671875  
Sell  
XLP  
46.214237213134766  
Buy  
XLE  
45.7249870300293  
Buy  
XLI  
59.55342483520508  
Buy  
XLF  
21.435626983642578  
Buy  
XLY  
82.55622100830078  
Buy  
XLE  
45.077999114990234  
Buy  
XLI  
59.314937591552734  
Buy  
XLY  
82.14665985107422  
Buy  
XLV  
69.36088562011719  
Buy  
XLP  
45.08079528808594  
Buy  
XLP  
45.09734344482422  
Sell  
XLB  
47.750244140625  
Sell  
XLK  
54.48737716674805  
Sell  
XLV  
72.2864761352539  
Sell  
XLB

48.0623893737793  
Sell  
XLV  
72.23314666748047  
Buy  
XLF  
21.113357543945312  
Sell  
XLE  
47.22976303100586  
Buy  
XLF  
20.799789428710938  
Sell  
XLE  
47.31699752807617  
Sell  
XLV  
73.06900787353516  
Buy  
VOX  
81.53055572509766  
Sell  
XLV  
73.39804077148438  
Buy  
VOX  
81.11312103271484  
Sell  
XLB  
48.322509765625  
Sell  
XLV  
73.96717071533203  
Buy  
VOX  
80.69572448730469  
Sell  
XLU  
44.53013229370117  
Sell  
IYR  
67.160888671875  
Sell  
XLB  
48.730037689208984  
Sell  
XLI

61.11689758300781  
Sell  
XLB  
48.71269607543945  
Sell  
XLE  
48.145713806152344  
Sell  
XLI  
61.32006072998047  
Sell  
XLE  
48.378334045410156  
Sell  
XLI  
61.57386779785156  
Sell  
XLI  
61.91991424560547  
Sell  
XLF  
22.084796905517578  
Sell  
XLI  
62.434600830078125  
Sell  
XLF  
22.21599769592285  
Buy  
XLU  
43.141849517822266  
Buy  
XLU  
43.13380432128906  
Buy  
XLU  
42.78019332885742  
Buy  
XLU  
42.514976501464844  
Sell  
XLY  
84.66053009033203  
Sell  
XLY  
85.0995864868164  
Sell  
XLK

55.639434814453125  
Sell  
XLY  
85.57598114013672  
Sell  
XLK  
55.72307205200195  
Sell  
XLY  
85.67874145507812  
Sell  
XLK  
55.862483978271484  
Sell  
IYR  
67.07685852050781  
Sell  
XLU  
44.058048248291016  
Sell  
XLI  
64.7417221069336  
Buy  
XLE  
49.656211853027344  
Sell  
XLF  
23.44924545288086  
Buy  
XLE  
49.40577697753906  
Sell  
XLB  
51.80827713012695  
Buy  
IYR  
65.16085052490234  
Sell  
XLK  
58.130455017089844  
Sell  
XLY  
86.31392669677734  
Buy  
XLP  
44.206565856933594  
Sell  
XLK

58.26058578491211  
Buy  
XLP  
43.831932067871094  
Buy  
XLV  
72.52582550048828  
Sell  
XLK  
58.511539459228516  
Buy  
XLV  
72.39190673828125  
Sell  
XLK  
58.520851135253906  
Buy  
VOX  
79.7900619506836  
Buy  
VOX  
78.78285217285156  
Sell  
XLE  
51.74054718017578  
Buy  
VOX  
77.71153259277344  
Sell  
XLE  
51.67426681518555  
Buy  
VOX  
77.87635040283203  
Sell  
XLU  
44.73313903808594  
Sell  
IYR  
67.83341217041016  
Buy  
XLI  
62.96698760986328  
Sell  
XLU  
45.14302444458008  
Sell  
XLU



45.70560073852539  
Buy  
XLB  
50.151947021484375  
Buy  
XLI  
62.31923294067383  
Sell  
XLP  
45.74672317504883  
Sell  
XLY  
87.37886810302734  
Sell  
XLY  
88.08879852294922  
Sell  
XLY  
88.17285919189453  
Sell  
XLK  
59.952274322509766  
Sell  
XLY  
88.39705657958984  
Sell  
XLI  
64.44003295898438  
Sell  
XLY  
89.44331359863281  
Sell  
XLV  
73.5789566040039  
Sell  
XLI  
65.00792694091797  
Sell  
XLF  
23.912803649902344  
Sell  
XLY  
89.8262710571289  
Sell  
XLV  
73.9449234008789  
Sell  
VOX

83.56256103515625  
Sell  
XLB  
51.921607971191406  
Sell  
XLI  
66.11712646484375  
Sell  
XLF  
24.07024574279785  
Sell  
XLY  
90.28399658203125  
Sell  
XLV  
74.49825286865234  
Sell  
VOX  
83.9196548461914  
Sell  
XLF  
24.122718811035156  
Sell  
XLV  
74.34651947021484  
Sell  
XLB  
52.026222229003906  
Sell  
XLI  
65.85092163085938  
Sell  
XLF  
24.490070343017578  
Buy  
XLK  
58.083980560302734  
Sell  
XLY  
91.29287719726562  
Sell  
XLP  
47.220272064208984  
Buy  
IYR  
66.6163558959961  
Sell  
XLP

47.445045471191406  
Buy  
IYR  
66.59169006347656  
Sell  
XLB  
52.51786422729492  
Sell  
XLK  
60.7635612487793  
Buy  
XLU  
44.13615036010742  
Buy  
XLU  
43.33308410644531  
Buy  
XLU  
42.992393493652344  
Buy  
IYR  
66.1758804321289  
Sell  
XLE  
53.249114990234375  
Buy  
XLU  
42.48135757446289  
Buy  
IYR  
65.93486022949219  
Sell  
XLB  
52.859519958496094  
Sell  
XLE  
53.360328674316406  
Buy  
XLU  
42.54624938964844  
Sell  
XLE  
53.82742691040039  
Buy  
XLU  
42.29478454589844  
Sell  
XLB

53.779327392578125  
Sell  
XLB  
54.15603256225586  
Sell  
XLE  
55.27321243286133  
Sell  
XLB  
54.62909698486328  
Sell  
XLI  
68.77812957763672  
Sell  
XLF  
24.893781661987305  
Sell  
XLB  
55.067100524902344  
Sell  
XLI  
69.2509994506836  
Sell  
XLF  
24.964073181152344  
Sell  
XLK  
61.855133056640625  
Sell  
XLY  
95.39972686767578  
Sell  
XLV  
76.39109802246094  
Sell  
XLB  
55.14594650268555  
Sell  
XLI  
69.53648376464844  
Sell  
XLK  
62.088348388671875  
Sell  
XLI  
69.98259735107422  
Sell  
XLF

25.12224578857422  
Sell  
XLV  
77.0093994140625  
Sell  
XLF  
25.33313751220703  
Sell  
XLV  
76.87499237060547  
Buy  
VOX  
82.9689712524414  
Buy  
IYR  
64.70492553710938  
Sell  
XLI  
70.86585235595703  
Sell  
XLF  
25.456159591674805  
Sell  
XLY  
97.18997192382812  
Sell  
XLV  
77.20655059814453  
Buy  
IYR  
64.48052978515625  
Sell  
XLI  
71.52603912353516  
Sell  
XLF  
25.684619903564453  
Sell  
XLY  
98.44596099853516  
Sell  
XLV  
77.7979736328125  
Buy  
IYR  
63.957000732421875  
Sell  
XLV

78.18328094482422  
Sell  
XLF  
25.80763816833496  
Sell  
XLK  
63.02131652832031  
Sell  
XLP  
48.27573013305664  
Sell  
XLV  
78.93599700927734  
Sell  
XLP  
48.133155822753906  
Sell  
XLP  
48.66991424560547  
Sell  
XLP  
49.0389518737793  
Sell  
VOX  
85.71175384521484  
Sell  
XLP  
48.87959671020508  
Sell  
XLV  
82.02747344970703  
Sell  
VOX  
86.16578674316406  
Buy  
XLB  
54.392555236816406  
Buy  
XLB  
52.964637756347656  
Buy  
XLE  
53.723628997802734  
Buy  
XLB  
50.94101333618164  
Buy  
XLI

66.42279052734375  
Buy  
XLF  
24.498361587524414  
Buy  
XLK  
59.429443359375  
Buy  
XLP  
45.6422004699707  
Buy  
XLE  
51.469688415527344  
Buy  
XLV  
74.41075897216797  
Buy  
VOX  
81.31959533691406  
Buy  
XLU  
39.79636001586914  
Buy  
IYR  
61.49710464477539  
Buy  
XLI  
67.63614654541016  
Buy  
XLP  
46.145423889160156  
Buy  
XLE  
51.87748718261719  
Buy  
VOX  
81.51419067382812  
Buy  
XLU  
39.204200744628906  
Buy  
IYR  
61.713191986083984  
Buy  
XLE  
51.010009765625  
Buy  
XLU

39.01763153076172  
Buy  
IYR  
61.472164154052734  
Buy  
XLB  
50.301509857177734  
Buy  
XLI  
65.14696502685547  
Buy  
XLF  
23.865692138671875  
Buy  
XLK  
57.85272979736328  
Buy  
XLY  
93.88127136230469  
Buy  
XLP  
44.9544677734375  
Buy  
XLE  
49.46786117553711  
Buy  
XLV  
72.53795623779297  
Buy  
VOX  
78.91040802001953  
Buy  
XLU  
38.57959747314453  
Buy  
IYR  
59.660484313964844  
Buy  
XLE  
49.43077850341797  
Buy  
VOX  
79.06793212890625  
Sell  
IYR  
63.0511589050293  
Buy  
XLP



44.473209381103516  
Buy  
XLP  
44.34669494628906  
Buy  
XLP  
43.79848861694336  
Buy  
XLB  
50.247467041015625  
Buy  
XLI  
66.12615966796875  
Buy  
XLF  
24.393518447875977  
Buy  
XLK  
61.8053092956543  
Buy  
XLY  
96.06602478027344  
Buy  
XLP  
43.4358024597168  
Buy  
XLV  
73.16148376464844  
Buy  
VOX  
78.74210357666016  
Buy  
XLB  
49.262569427490234  
Buy  
XLI  
65.15870666503906  
Buy  
XLF  
23.65272331237793  
Buy  
XLK  
60.15816116333008  
Buy  
XLY  
94.17647552490234  
Buy  
XLP

42.89602279663086  
Buy  
XLV  
71.64176177978516  
Buy  
VOX  
77.34901428222656  
Buy  
XLK  
60.43893051147461  
Buy  
XLY  
93.90384674072266  
Buy  
XLY  
92.53134155273438  
Sell  
XLE  
52.20204544067383  
Sell  
XLE  
52.74711990356445  
Sell  
XLE  
52.73965835571289  
Sell  
XLE  
53.32209777832031  
Sell  
XLE  
53.867183685302734  
Sell  
XLB  
52.375553131103516  
Sell  
XLE  
54.07627487182617  
Sell  
XLB  
52.753684997558594  
Sell  
XLI  
68.20435333251953  
Sell  
XLE  
54.92750930786133  
Buy  
XLP

42.58395767211914  
Buy  
XLP  
42.533355712890625  
Buy  
XLP  
42.26346206665039  
Sell  
XLU  
42.27186584472656  
Buy  
XLF  
23.740915298461914  
Sell  
IYR  
64.3031005859375  
Sell  
IYR  
64.65504455566406  
Sell  
XLK  
64.65037536621094  
Sell  
XLE  
56.78681564331055  
Sell  
XLF  
24.940305709838867  
Sell  
XLK  
65.4926986694336  
Sell  
XLE  
57.212425231933594  
Sell  
IYR  
65.32538604736328  
Sell  
XLE  
57.294559478759766  
Sell  
XLE  
57.69031524658203  
Sell  
XLE  
58.7805061340332  
Buy  
XLU

40.04014205932617  
Sell  
XLI  
68.49995422363281  
Sell  
XLP  
42.56709289550781  
Sell  
XLK  
66.53148651123047  
Sell  
XLK  
67.06493377685547  
Sell  
XLY  
101.27403259277344  
Sell  
IYR  
66.322509765625  
Sell  
XLK  
67.29889678955078  
Sell  
XLY  
101.86625671386719  
Sell  
XLB  
53.61547088623047  
Sell  
XLK  
67.73876190185547  
Sell  
XLY  
102.81573486328125  
Buy  
XLU  
39.541473388671875  
Sell  
XLY  
103.11656188964844  
Sell  
XLV  
76.030029296875  
Sell  
XLY  
103.3327865600586  
Sell  
XLP

42.870723724365234  
Sell  
XLV  
76.47065734863281  
Sell  
XLY  
103.74641418457031  
Sell  
XLP  
43.224952697753906  
Sell  
XLV  
76.61453247070312  
Sell  
VOX  
79.67706298828125  
Sell  
XLP  
43.30929946899414  
Sell  
VOX  
80.18195343017578  
Sell  
VOX  
80.64007568359375  
Sell  
XLP  
43.806121826171875  
Sell  
VOX  
81.10755920410156  
Buy  
XLI  
65.8607177734375  
Buy  
XLI  
65.90567016601562  
Buy  
XLI  
65.0782470703125  
Sell  
IYR  
67.62133026123047  
Buy  
XLI  
64.47566986083984  
Sell  
XLU

42.55099868774414  
Buy  
XLF  
23.640033721923828  
Buy  
XLF  
23.347742080688477  
Buy  
XLK  
64.48490142822266  
Sell  
IYR  
68.00857543945312  
Sell  
IYR  
69.1677017211914  
Sell  
XLV  
77.62945556640625  
Sell  
VOX  
82.43184661865234  
Sell  
IYR  
69.45538330078125  
Sell  
XLV  
78.19807434082031  
Sell  
VOX  
82.79035186767578  
Sell  
XLP  
44.74106216430664  
Sell  
XLE  
58.162689208984375  
Sell  
XLV  
78.49592590332031  
Sell  
VOX  
83.05455017089844  
Sell  
XLI  
67.04788208007812  
Sell  
XLF

24.738338470458984  
Sell  
XLB  
52.584022521972656  
Sell  
XLI  
68.3519515991211  
Sell  
XLI  
69.17935943603516  
Sell  
XLP  
46.143463134765625  
Sell  
XLV  
81.05918884277344  
Sell  
XLU  
43.961395263671875  
Sell  
XLP  
46.18596649169922  
Sell  
XLU  
43.99437713623047  
Buy  
XLB  
50.931941986083984  
Buy  
XLE  
54.058162689208984  
Sell  
XLP  
46.40695571899414  
Buy  
XLE  
54.449058532714844  
Sell  
XLU  
44.7367057800293  
Sell  
XLP  
46.76392364501953  
Sell  
XLU  
44.9676399230957  
Sell  
IYR

70.3606948852539  
Sell  
XLP  
46.738426208496094  
Sell  
XLI  
69.57511138916016  
Sell  
XLI  
69.87190246582031  
Sell  
XLF  
25.349485397338867  
Sell  
XLK  
70.40180969238281  
Sell  
XLY  
108.9861068725586  
Sell  
XLK  
70.52389526367188  
Sell  
XLY  
109.20291137695312  
Sell  
XLK  
71.16254425048828  
Sell  
XLY  
110.42821502685547  
Sell  
XLV  
83.8210220336914  
Sell  
XLK  
70.94654083251953  
Buy  
VOX  
80.1297607421875  
Buy  
VOX  
79.56367492675781  
Sell  
XLU  
45.17384338378906  
Sell  
XLV



84.69652557373047  
Sell  
XLI  
71.1130142211914  
Sell  
XLI  
71.13996887207031  
Sell  
XLI  
71.78754425048828  
Sell  
XLB  
53.29963684082031  
Sell  
XLF  
25.446918487548828  
Buy  
IYR  
68.65160369873047  
Sell  
XLB  
53.87388610839844  
Sell  
XLF  
25.66834831237793  
Sell  
XLP  
47.018917083740234  
Sell  
XLV  
85.30122375488281  
Sell  
XLB  
53.75761032104492  
Sell  
XLI  
72.29701232910156  
Sell  
XLV  
85.4162826538086  
Sell  
XLE  
57.6770133972168  
Sell  
XLV  
85.58845520019531  
Buy  
IYR

68.08472442626953  
Sell  
XLE  
58.04792785644531  
Buy  
XLU  
43.16655349731445  
Buy  
IYR  
67.97472381591797  
Buy  
XLU  
42.74213409423828  
Buy  
IYR  
67.35270690917969  
Buy  
IYR  
67.53215026855469  
Buy  
XLF  
24.536706924438477  
Buy  
XLY  
106.91063690185547  
Buy  
IYR  
66.56668090820312  
Buy  
XLY  
106.1070785522461  
Buy  
XLK  
68.59557342529297  
Buy  
XLY  
106.38123321533203  
Buy  
XLB  
49.44350814819336  
Buy  
XLY  
106.06925964355469  
Buy  
XLB  
48.14750289916992  
Buy  
XLI

68.13994598388672  
Buy  
XLF  
24.20753288269043  
Buy  
XLK  
65.50459289550781  
Buy  
XLY  
102.49580383300781  
Buy  
XLV  
83.52259826660156  
Buy  
VOX  
77.44735717773438  
Buy  
XLB  
47.5882682800293  
Buy  
XLI  
66.341552734375  
Buy  
XLF  
23.486915588378906  
Buy  
XLK  
64.67529296875  
Buy  
XLY  
100.690185546875  
Buy  
XLP  
44.58631134033203  
Buy  
XLE  
55.1035041809082  
Buy  
XLV  
81.26644897460938  
Buy  
VOX  
76.38750457763672  
Buy  
IYR  
64.67845153808594  
Buy  
XLB

47.72141647338867  
Buy  
XLI  
66.78437805175781  
Buy  
XLF  
23.51360511779785  
Buy  
XLP  
44.834537506103516  
Buy  
IYR  
64.5502700805664  
Buy  
XLF  
23.40684700012207  
Buy  
XLE  
54.793174743652344  
Buy  
XLV  
81.94601440429688  
Buy  
XLE  
52.14396667480469  
Buy  
XLI  
62.627288818359375  
Buy  
XLF  
22.454910278320312  
Buy  
XLE  
50.08515930175781  
Buy  
XLV  
79.09185028076172  
Buy  
VOX  
74.75035095214844  
Sell  
XLU  
45.9627685546875  
Buy  
VOX  
73.69047546386719  
Sell  
XLP

47.5307731628418  
Sell  
IYR  
68.53181457519531  
Buy  
XLK  
61.8293342590332  
Buy  
XLK  
60.50056838989258  
Buy  
VOX  
72.84822082519531  
Buy  
XLE  
48.37452697753906  
Sell  
XLV  
86.86604309082031  
Sell  
IYR  
69.87320709228516  
Sell  
XLU  
46.7284049987793  
Sell  
IYR  
70.19789123535156  
Sell  
XLU  
46.76169204711914  
Buy  
XLF  
22.775188446044922  
Sell  
XLU  
46.81162643432617  
Sell  
IYR  
70.84724426269531  
Buy  
XLB  
46.0792121887207  
Buy  
XLI  
61.47957992553711  
Buy  
XLF

22.339256286621094  
Buy  
XLB  
46.20348358154297  
Buy  
XLF  
22.02787208557129  
Buy  
XLF  
21.814359664916992  
Buy  
XLB  
44.774330139160156  
Buy  
XLP  
45.570655822753906  
Buy  
XLE  
46.14162826538086  
Buy  
XLV  
79.00125122070312  
Buy  
VOX  
71.67264556884766  
Buy  
IYR  
66.10066223144531  
Buy  
XLP  
45.03140640258789  
Buy  
XLE  
45.051666259765625  
Buy  
XLV  
78.31263732910156  
Buy  
XLP  
44.594871520996094  
Buy  
XLE  
44.52181625366211  
Buy  
XLV  
77.28875732421875  
Buy  
VOX

70.76130676269531  
Buy  
IYR  
65.96312713623047  
Buy  
XLI  
57.693016052246094  
Buy  
XLK  
57.786521911621094  
Buy  
XLY  
91.04749298095703  
Buy  
XLP  
43.7988395690918  
Buy  
XLE  
43.28804016113281  
Buy  
XLV  
76.20145416259766  
Buy  
VOX  
69.57466888427734  
Buy  
IYR  
65.00054168701172  
Buy  
XLI  
56.60367965698242  
Buy  
XLK  
56.03083038330078  
Buy  
XLY  
88.98424530029297  
Buy  
XLP  
43.344478607177734  
Buy  
XLE  
42.86784362792969  
Buy  
XLV  
75.25483703613281  
Buy  
VOX

67.36278533935547  
Buy  
IYR  
64.19268798828125  
Buy  
XLB  
42.29589080810547  
Buy  
XLI  
54.86692810058594  
Buy  
XLK  
54.53540802001953  
Buy  
XLY  
87.294921875  
Buy  
XLP  
42.092002868652344  
Buy  
XLE  
41.133583068847656  
Buy  
XLV  
73.45269012451172  
Buy  
VOX  
66.03374481201172  
Buy  
XLU  
43.27301788330078  
Buy  
IYR  
61.88075256347656  
Sell  
XLF  
22.756057739257812  
Sell  
XLF  
23.275272369384766  
Sell  
XLU  
45.37120819091797  
Sell  
XLP  
46.11722183227539  
Sell  
XLU



45.95869827270508  
Sell  
XLP  
45.97038650512695  
Sell  
XLE  
49.57573318481445  
Sell  
VOX  
77.64376068115234  
Sell  
XLK  
64.1136474609375  
Sell  
XLP  
46.264076232910156  
Sell  
XLE  
49.69033432006836  
Sell  
VOX  
78.30828094482422  
Sell  
XLI  
66.7787094116211  
Sell  
XLK  
64.65313720703125  
Sell  
XLE  
49.7667350769043  
Sell  
VOX  
78.79244995117188  
Sell  
XLK  
64.87081909179688  
Sell  
XLU  
46.5294189453125  
Sell  
XLF  
23.660213470458984  
Sell  
XLE  
50.51546096801758  
Sell  
XLV

84.51153564453125  
Sell  
XLB  
48.97888946533203  
Sell  
XLF  
23.69602394104004  
Sell  
XLB  
49.8187255859375  
Sell  
XLF  
23.848203659057617  
Sell  
XLB  
49.622161865234375  
Sell  
XLB  
49.83659744262695  
Sell  
XLB  
50.15823745727539  
Sell  
VOX  
79.73225402832031  
Sell  
IYR  
73.34587860107422  
Sell  
VOX  
80.21639251708984  
Sell  
XLU  
48.9800910949707  
Sell  
IYR  
73.64666748046875  
Sell  
VOX  
80.4442367553711  
Sell  
IYR  
73.98187255859375  
Sell  
IYR  
74.09358978271484  
Sell  
XLK

69.30579376220703  
Sell  
XLP  
47.50764846801758  
Sell  
XLF  
24.203893661499023  
Sell  
XLK  
69.60015106201172  
Sell  
XLY  
106.34363555908203  
Sell  
XLK  
69.74256896972656  
Sell  
XLY  
106.87692260742188  
Sell  
XLY  
107.02928924560547  
Sell  
XLK  
71.2998046875  
Sell  
XLY  
108.49585723876953  
Sell  
XLP  
47.89847946166992  
Sell  
XLE  
51.81253433227539  
Sell  
IYR  
74.78568267822266  
Buy  
XLF  
22.800247192382812  
Buy  
XLF  
22.701269149780273  
Sell  
XLP  
48.34141159057617  
Sell  
XLB

50.54538345336914  
Sell  
XLI  
70.0352554321289  
Sell  
XLB  
50.715877532958984  
Sell  
XLI  
70.0078353881836  
Sell  
XLB  
51.3798828125  
Sell  
XLB  
51.90031814575195  
Sell  
VOX  
81.67703247070312  
Sell  
XLB  
51.88236999511719  
Sell  
XLY  
111.91461181640625  
Sell  
VOX  
81.85771942138672  
Sell  
XLE  
52.28993225097656  
Buy  
XLV  
82.04896545410156  
Sell  
VOX  
83.34120178222656  
Buy  
XLV  
80.6877212524414  
Sell  
XLP  
49.34889221191406  
Buy  
XLV  
78.36722564697266  
Buy  
IYR

73.62580108642578  
Buy  
XLV  
78.4951171875  
Sell  
XLE  
52.828922271728516  
Buy  
XLV  
78.5407943725586  
Buy  
IYR  
73.40074920654297  
Sell  
XLP  
50.121864318847656  
Sell  
XLU  
49.639278411865234  
Buy  
XLB  
50.61717224121094  
Buy  
XLE  
49.8875617980957  
Buy  
XLB  
50.3569450378418  
Buy  
XLE  
49.01747131347656  
Buy  
XLE  
49.471771240234375  
Buy  
XLB  
50.123653411865234  
Buy  
XLB  
49.24428939819336  
Buy  
XLB  
49.19942855834961  
Buy  
XLB  
48.8135871887207  
Buy  
XLB

48.364925384521484  
Buy  
XLI  
67.7672119140625  
Buy  
XLF  
24.005943298339844  
Buy  
XLK  
69.60965728759766  
Buy  
XLY  
108.37203979492188  
Buy  
VOX  
80.82118225097656  
Buy  
XLY  
109.4671859741211  
Buy  
VOX  
81.0018310546875  
Sell  
XLP  
50.321624755859375  
Sell  
XLU  
50.23111343383789  
Buy  
XLE  
47.269588470458984  
Sell  
XLU  
50.66231918334961  
Buy  
XLE  
47.44668960571289  
Buy  
XLE  
46.95390319824219  
Buy  
XLP  
48.78435134887695  
Buy  
XLE  
46.65361022949219  
Buy  
XLE

46.06071472167969  
Buy  
XLF  
23.403091430664062  
Buy  
XLP  
48.29798126220703  
Buy  
XLE  
45.252220153808594  
Buy  
VOX  
79.47083282470703  
Buy  
XLK  
67.0649185180664  
Buy  
VOX  
77.39778137207031  
Sell  
XLB  
50.1954345703125  
Sell  
XLB  
50.56332778930664  
Sell  
IYR  
76.81977844238281  
Sell  
XLB  
51.164527893066406  
Sell  
XLU  
51.16117858886719  
Sell  
XLB  
51.62215805053711  
Sell  
XLV  
83.14525604248047  
Sell  
IYR  
77.16602325439453  
Sell  
XLB  
51.711883544921875  
Sell  
XLV

83.39192199707031  
Sell  
IYR  
78.56163024902344  
Sell  
XLI  
71.17845153808594  
Sell  
XLE  
49.032867431640625  
Sell  
XLE  
49.38719177246094  
Sell  
XLB  
53.212684631347656  
Sell  
XLF  
25.25870132446289  
Sell  
XLF  
25.195398330688477  
Sell  
XLB  
53.4293212890625  
Sell  
XLF  
25.39435386657715  
Sell  
XLP  
52.210384368896484  
Sell  
XLF  
25.46670150756836  
Sell  
XLY  
118.56912231445312  
Sell  
XLY  
118.95133209228516  
Sell  
XLI  
72.16769409179688  
Sell  
XLB  
53.67304611206055  
Sell  
XLF



25.946016311645508  
Sell  
VOX  
87.22039794921875  
Buy  
XLY  
115.35833740234375  
Buy  
XLF  
24.969310760498047  
Buy  
XLY  
113.7911605834961  
Buy  
XLE  
47.61558532714844  
Buy  
XLY  
112.8547134399414  
Buy  
XLE  
46.931819915771484  
Buy  
XLB  
50.77546691894531  
Buy  
XLI  
67.71288299560547  
Buy  
XLF  
24.12825584411621  
Buy  
XLK  
72.18061828613281  
Buy  
XLY  
109.82549285888672  
Buy  
XLP  
50.486366271972656  
Buy  
XLE  
45.53318786621094  
Buy  
XLV  
81.57330322265625  
Buy  
VOX

81.59880828857422  
Buy  
XLB  
50.83864212036133  
Buy  
XLK  
73.38124084472656  
Buy  
XLY  
111.4977798461914  
Buy  
XLP  
50.94145202636719  
Buy  
XLE  
45.478797912597656  
Buy  
XLF  
24.191560745239258  
Buy  
XLE  
45.13690185546875  
Sell  
IYR  
79.77400970458984  
Sell  
IYR  
79.7652816772461  
Buy  
XLB  
50.20677947998047  
Buy  
XLF  
23.495203018188477  
Buy  
XLE  
44.00246810913086  
Buy  
XLV  
81.78433227539062  
Buy  
VOX  
80.77938842773438  
Sell  
XLU  
52.3110466003418  
Sell  
XLU

52.64342498779297  
Sell  
XLU  
52.90761947631836  
Sell  
XLU  
54.27973175048828  
Sell  
XLU  
54.330875396728516  
Sell  
IYR  
82.06796264648438  
Sell  
XLI  
70.76236724853516  
Sell  
XLF  
24.82461166381836  
Sell  
XLK  
77.72638702392578  
Sell  
XLY  
117.12616729736328  
Sell  
VOX  
84.63826751708984  
Sell  
XLI  
70.9093246459961  
Sell  
XLY  
117.412841796875  
Sell  
XLF  
25.195398330688477  
Sell  
XLE  
46.78418731689453  
Sell  
XLI  
71.77272033691406  
Sell  
XLF  
25.285829544067383  
Sell  
XLE

47.33586883544922  
Sell  
XLB  
52.40027618408203  
Sell  
XLI  
72.4432373046875  
Sell  
XLF  
25.430530548095703  
Sell  
XLE  
47.38248825073242  
Sell  
XLB  
52.806488037109375  
Sell  
XLB  
53.38418960571289  
Sell  
XLE  
49.05307388305664  
Sell  
XLU  
55.506832122802734  
Sell  
XLU  
55.76448440551758  
Buy  
VOX  
82.06394958496094  
Buy  
XLB  
50.63157272338867  
Buy  
XLI  
68.64424896240234  
Buy  
XLF  
24.40578842163086  
Buy  
XLK  
74.82379913330078  
Buy  
XLY  
112.69219207763672  
Buy  
XLE

44.23239517211914  
Buy  
XLV  
81.02764892578125  
Buy  
VOX  
81.00341033935547  
Buy  
XLB  
50.81300735473633  
Buy  
XLI  
69.09671020507812  
Buy  
XLF  
24.50577163696289  
Buy  
XLB  
50.01466369628906  
Buy  
XLF  
24.3421573638916  
Sell  
XLK  
78.78099822998047  
Sell  
IYR  
83.16313934326172  
Sell  
IYR  
83.76927947998047  
Sell  
IYR  
83.49695587158203  
Sell  
XLK  
80.26255798339844  
Sell  
XLV  
86.90550994873047  
Sell  
XLV  
87.393798828125  
Sell  
XLI  
74.9324951171875  
Sell  
XLE

47.99619674682617  
Sell  
XLE  
48.05892562866211  
Buy  
XLU  
53.78055191040039  
Buy  
IYR  
80.76496124267578  
Buy  
XLU  
53.25666809082031  
Buy  
IYR  
80.22911071777344  
Buy  
XLU  
53.033382415771484  
Buy  
IYR  
80.07976531982422  
Buy  
XLU  
52.707008361816406  
Sell  
XLV  
89.78913879394531  
Sell  
XLP  
54.271087646484375  
Buy  
XLY  
115.48216247558594  
Buy  
XLY  
115.21371459960938  
Buy  
XLY  
114.561767578125  
Sell  
XLV  
91.58567810058594  
Sell  
XLY  
118.16667938232422  
Buy  
XLI

74.50775146484375  
Buy  
XLI  
73.69515991210938  
Buy  
XLE  
45.486995697021484  
Buy  
XLI  
73.98139953613281  
Sell  
XLF  
27.596263885498047  
Sell  
XLB  
55.25836181640625  
Sell  
XLF  
28.014389038085938  
Sell  
XLK  
84.9748764038086  
Sell  
XLE  
47.65117645263672  
Buy  
IYR  
79.50875854492188  
Sell  
XLK  
85.53882598876953  
Buy  
IYR  
79.58783721923828  
Sell  
XLK  
86.30352783203125  
Sell  
XLE  
47.92561340332031  
Sell  
XLV  
93.94417572021484  
Sell  
VOX  
88.59416961669922  
Sell  
XLU

55.10317611694336  
Sell  
XLU  
55.28352737426758  
Sell  
VOX  
89.10209655761719  
Sell  
XLU  
55.506832122802734  
Sell  
VOX  
90.09883880615234  
Sell  
XLU  
55.52400207519531  
Sell  
XLP  
56.0025520324707  
Sell  
XLV  
95.00824737548828  
Sell  
VOX  
90.48219299316406  
Sell  
XLU  
55.90571975708008  
Sell  
XLE  
49.082069396972656  
Sell  
XLV  
95.38754272460938  
Sell  
VOX  
90.3096923828125  
Sell  
XLY  
121.25923919677734  
Sell  
VOX  
90.92306518554688  
Buy  
XLB  
57.46192932128906  
Buy  
XLI



70.60093688964844  
Buy  
XLF  
22.012054443359375  
Buy  
XLK  
108.0277328491211  
Buy  
XLY  
141.0135498046875  
Buy  
XLP  
56.55721664428711  
Buy  
XLE  
23.783000946044922  
Buy  
XLV  
96.72147369384766  
Buy  
IYR  
69.72925567626953  
Buy  
XLF  
22.17987632751465  
Buy  
XLP  
56.53912353515625  
Buy  
XLV  
95.9290542602539  
Buy  
XLK  
107.3980484008789  
Buy  
XLY  
138.80960083007812  
Buy  
XLP  
56.34003829956055  
Buy  
XLV  
95.90076446533203  
Sell  
VOX  
104.930419921875  
Sell  
VOX

107.06358337402344  
Sell  
VOX  
107.47864532470703  
Sell  
XLB  
64.50318908691406  
Sell  
XLF  
25.18194007873535  
Sell  
XLE  
28.374807357788086  
Sell  
XLB  
65.26390075683594  
Sell  
XLI  
80.70967864990234  
Sell  
XLF  
25.31246566772461  
Sell  
XLE  
29.293174743652344  
Sell  
XLU  
58.91128158569336  
Sell  
IYR  
76.40555572509766  
Sell  
XLF  
25.20990753173828  
Sell  
XLE  
28.992769241333008  
Sell  
XLU  
59.1335563659668  
Sell  
IYR  
76.8953857421875  
Sell  
IYR  
77.95671081542969  
Sell  
XLP

61.66999816894531  
Sell  
XLE  
30.99257469177246  
Sell  
IYR  
78.5916748046875  
Sell  
XLE  
31.310131072998047  
Sell  
XLE  
34.597354888916016  
Sell  
VOX  
114.26422119140625  
Sell  
XLK  
122.10398864746094  
Sell  
XLY  
156.09164428710938  
Sell  
XLF  
27.632192611694336  
Sell  
XLV  
107.45463562011719  
Buy  
XLI  
81.82000732421875  
Sell  
XLB  
68.3497314453125  
Sell  
XLV  
107.7672119140625  
Sell  
XLB  
71.14671325683594  
Sell  
XLF  
28.588260650634766  
Sell  
XLY  
157.82057189941406  
Sell  
XLV

109.24490356445312  
Sell  
XLB  
71.67814636230469  
Sell  
XLI  
85.05833435058594  
Sell  
XLF  
29.000680923461914  
Sell  
XLY  
160.8651123046875  
Sell  
XLV  
110.66577911376953  
Sell  
VOX  
116.7492904663086  
Sell  
XLB  
71.33319091796875  
Sell  
XLF  
28.98193359375  
Sell  
XLY  
164.18202209472656  
Sell  
XLV  
111.19620513916016  
Sell  
VOX  
117.1844253540039  
Sell  
XLF  
29.075666427612305  
Sell  
XLE  
36.59085464477539  
Sell  
XLV  
111.71720123291016  
Sell  
XLI  
85.66434478759766  
Sell  
XLF

29.375606536865234  
Sell  
XLY  
163.57896423339844  
Sell  
XLE  
37.869407653808594  
Sell  
XLE  
38.686981201171875  
Buy  
XLP  
59.886817932128906  
Buy  
XLP  
59.6222038269043  
Sell  
XLK  
127.82613372802734  
Sell  
VOX  
119.11849212646484  
Sell  
IYR  
78.62777709960938  
Sell  
XLK  
129.4768524169922  
Sell  
VOX  
119.35057067871094  
Sell  
VOX  
119.46662139892578  
Sell  
XLK  
130.0594482421875  
Sell  
VOX  
120.22091674804688  
Sell  
XLU  
57.47248077392578  
Sell  
VOX  
121.13957214355469  
Buy  
XLI

80.83524322509766  
Buy  
XLI  
80.2671127319336  
Buy  
XLP  
58.481590270996094  
Buy  
XLP  
58.536346435546875  
Sell  
VOX  
124.76593017578125  
Buy  
XLU  
53.98466873168945  
Sell  
XLE  
43.740299224853516  
Buy  
XLU  
53.796390533447266  
Buy  
XLY  
156.09884643554688  
Buy  
XLV  
107.59671783447266  
Buy  
XLU  
53.312225341796875  
Buy  
XLP  
57.76072692871094  
Buy  
XLV  
106.66841888427734  
Buy  
XLU  
52.32596206665039  
Buy  
XLK  
125.67044830322266  
Buy  
XLY  
154.8538360595703  
Buy  
XLV

106.38424682617188  
Buy  
IYR  
78.6643295288086  
Buy  
XLK  
122.893310546875  
Buy  
XLY  
151.5758056640625  
Buy  
XLV  
104.95393371582031  
Buy  
IYR  
77.88774108886719  
Sell  
XLE  
46.05386734008789  
Sell  
XLI  
89.4045181274414  
Buy  
XLK  
122.18446350097656  
Sell  
XLB  
72.77832794189453  
Sell  
XLI  
90.35139465332031  
Sell  
XLB  
73.16990661621094  
Sell  
XLB  
73.36570739746094  
Sell  
XLI  
91.62969207763672  
Sell  
XLI  
92.39666748046875  
Sell  
IYR  
84.16443634033203  
Sell  
XLP

62.917057037353516  
Sell  
XLV  
111.23045349121094  
Sell  
XLP  
63.55006790161133  
Sell  
XLV  
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Sell  
XLK  
131.83255004882812  
Sell  
XLK  
134.5572052001953  
Sell  
XLY  
168.8074493408203  
Sell  
XLK  
133.9830780029297  
Sell  
XLY  
169.53814697265625  
Sell  
XLK  
134.69342041015625  
Sell  
XLK  
136.63955688476562  
Sell  
XLK  
137.95323181152344  
Sell  
XLY  
171.4476318359375  
Sell  
XLY  
174.37037658691406  
Sell  
XLV  
114.61432647705078  
Sell  
XLB  
77.39252471923828  
Sell  
XLV



115.46981048583984  
Sell  
XLV  
115.4983139038086  
Buy  
XLE  
41.37403106689453  
Sell  
XLV  
117.31381225585938  
Sell  
XLI  
97.4585189819336  
Sell  
XLF  
34.43913269042969  
Sell  
XLE  
44.53840637207031  
Sell  
VOX  
135.69032287597656  
Sell  
XLI  
97.8099365234375  
Sell  
XLE  
44.60872268676758  
Sell  
XLI  
98.23735809326172  
Sell  
XLF  
34.58034896850586  
Buy  
XLK  
133.1267547607422  
Sell  
XLB  
80.78182983398438  
Sell  
XLF  
34.86279296875  
Buy  
XLK  
132.80564880371094  
Sell  
XLE

46.07662582397461  
Sell  
XLB  
81.46532440185547  
Sell  
XLI  
99.01618957519531  
Sell  
XLF  
35.380611419677734  
Sell  
XLP  
64.80693817138672  
Sell  
XLE  
46.313961029052734  
Sell  
XLB  
82.27052307128906  
Sell  
XLI  
100.06095886230469  
Sell  
XLF  
35.568904876708984  
Sell  
XLE  
47.14020919799805  
Sell  
XLI  
100.15595245361328  
Buy  
XLK  
131.87152099609375  
Buy  
XLY  
169.96678161621094  
Sell  
XLP  
65.3023681640625  
Buy  
XLY  
168.0475311279297  
Buy  
XLK  
127.77484130859375  
Buy  
XLY

162.3579559326172  
Buy  
VOX  
127.70000457763672  
Buy  
XLU  
58.127445220947266  
Buy  
IYR  
87.3157958984375  
Buy  
XLY  
163.50755310058594  
Buy  
XLV  
115.55533599853516  
Sell  
IYR  
93.43984985351562  
Sell  
XLE  
48.546592712402344  
Buy  
XLV  
115.32721710205078  
Sell  
IYR  
94.55997467041016  
Sell  
XLE  
48.67844009399414  
Sell  
IYR  
94.37635040283203  
Sell  
XLE  
49.003665924072266  
Sell  
XLV  
119.23388671875  
Buy  
XLB  
79.63958740234375  
Sell  
XLK  
139.549072265625  
Buy  
XLB

79.4710464477539  
Buy  
XLB  
78.5909423828125  
Buy  
XLP  
64.02713775634766  
Buy  
XLB  
76.84011840820312  
Buy  
XLI  
95.8533706665039  
Buy  
XLF  
33.98721694946289  
Buy  
XLB  
75.5948715209961  
Buy  
XLI  
94.609130859375  
Buy  
XLF  
33.16814041137695  
Buy  
XLP  
63.118892669677734  
Buy  
XLU  
57.901611328125  
Sell  
XLY  
170.6091766357422  
Sell  
XLY  
171.9263916015625  
Buy  
XLU  
57.67768096923828  
Sell  
XLY  
172.5117950439453  
Sell  
VOX  
139.17930603027344  
Sell  
XLY

173.6045684814453  
Sell  
VOX  
139.5576934814453  
Sell  
XLY  
173.6436004638672  
Sell  
VOX  
140.56666564941406  
Sell  
XLK  
146.09274291992188  
Sell  
XLY  
176.73654174804688  
Sell  
XLV  
122.41873168945312  
Buy  
XLE  
46.2189826965332  
Sell  
XLV  
123.0771713256836  
Sell  
IYR  
97.25943756103516  
Sell  
IYR  
97.96994018554688  
Sell  
XLP  
65.22789001464844  
Buy  
XLE  
45.11789321899414  
Sell  
XLP  
65.49567413330078  
Buy  
XLE  
44.48743438720703  
Sell  
XLU  
59.72589111328125  
Buy  
XLE

43.226505279541016  
Sell  
XLU  
60.32670211791992  
Buy  
XLB  
74.61597442626953  
Buy  
XLI  
95.0702896118164  
Buy  
XLF  
33.18610382080078  
Buy  
XLE  
41.69919967651367  
Buy  
VOX  
135.24046325683594  
Buy  
XLE  
42.25862121582031  
Sell  
XLP  
65.92967224121094  
Sell  
XLV  
125.4627456665039  
Sell  
VOX  
143.3995361328125  
Sell  
XLU  
60.86379623413086  
Sell  
XLV  
128.02963256835938  
Sell  
XLF  
35.7854118347168  
Sell  
XLF  
35.87992477416992  
Sell  
XLF  
36.258018493652344  
Sell  
XLB

81.34882354736328  
Sell  
XLI  
100.54887390136719  
Sell  
XLF  
36.67390060424805  
Sell  
XLF  
36.74007034301758  
Sell  
XLP  
66.95464324951172  
Sell  
XLP  
67.34246063232422  
Buy  
XLY  
172.14102172851562  
Sell  
XLP  
67.37938690185547  
Buy  
XLE  
42.63157272338867  
Sell  
XLV  
130.54879760742188  
Buy  
XLY  
172.75572204589844  
Buy  
XLE  
41.743595123291016  
Buy  
XLY  
171.65316772460938  
Buy  
XLE  
40.66027069091797  
Buy  
XLE  
40.74906539916992  
Sell  
XLK  
153.784423828125  
Sell  
XLK

153.60891723632812  
Sell  
VOX  
142.7592315673828  
Sell  
VOX  
143.8457794189453  
Sell  
XLK  
155.68539428710938  
Sell  
VOX  
144.8935546875  
Sell  
IYR  
99.91698455810547  
Sell  
VOX  
145.41744995117188  
Sell  
IYR  
100.3875961303711  
Sell  
VOX  
146.1645050048828  
Sell  
IYR  
102.19621276855469  
Sell  
IYR  
102.64838409423828  
Sell  
IYR  
102.67605590820312  
Buy  
XLV  
127.09446716308594  
Buy  
XLV  
126.31200408935547  
Buy  
XLI  
96.23271179199219  
Buy  
XLV  
126.29292297363281  
Sell  
XLE



44.62950897216797  
Buy  
XLU  
61.39177703857422  
Buy  
XLB  
76.47785949707031  
Buy  
XLI  
95.59432220458984  
Buy  
XLU  
60.44504928588867  
Buy  
XLB  
75.00828552246094  
Buy  
XLI  
94.49794006347656  
Buy  
XLF  
34.69676208496094  
Buy  
XLK  
148.81068420410156  
Buy  
XLP  
65.23489379882812  
Buy  
VOX  
139.159912109375  
Buy  
XLU  
60.334068298339844  
Buy  
XLB  
74.82884979248047  
Buy  
XLI  
94.0008773803711  
Buy  
XLF  
34.64929962158203  
Buy  
XLK  
148.86927795410156  
Buy  
XLP

65.16056823730469  
Buy  
VOX  
138.95616149902344  
Buy  
XLU  
60.16896057128906  
Sell  
XLE  
45.40538787841797  
Sell  
XLE  
45.74692916870117  
Sell  
XLE  
47.37367630004883  
Buy  
XLK  
147.06260681152344  
Buy  
XLP  
64.54734802246094  
Sell  
XLE  
47.53544998168945  
Buy  
XLV  
122.44791412353516  
Buy  
VOX  
137.61737060546875  
Buy  
XLU  
58.297855377197266  
Buy  
XLK  
146.87705993652344  
Sell  
XLE  
47.53544998168945  
Buy  
XLK  
145.82240295410156  
Buy  
XLY  
175.3495330810547  
Buy  
XLP

63.96197509765625  
Buy  
XLK  
144.5918731689453  
Buy  
XLV  
120.07306671142578  
Sell  
XLB  
79.23944091796875  
Sell  
XLI  
97.4133529663086  
Sell  
XLB  
79.47554016113281  
Sell  
XLI  
98.35010528564453  
Sell  
XLY  
184.69110107421875  
Sell  
XLB  
79.41886138916016  
Sell  
XLI  
98.41702270507812  
Sell  
XLY  
186.94830322265625  
Sell  
XLB  
79.83444213867188  
Sell  
XLI  
99.00011444091797  
Sell  
XLF  
37.88639831542969  
Sell  
XLY  
186.42063903808594  
Sell  
XLB  
80.47665405273438  
Sell  
XLI

99.6214370727539  
Sell  
XLF  
38.1901741027832  
Sell  
XLU  
61.37051773071289  
Sell  
IYR  
101.09555053710938  
Sell  
XLY  
189.01986694335938  
Sell  
XLU  
61.37051773071289  
Sell  
IYR  
101.25284576416016  
Sell  
XLF  
38.560394287109375  
Sell  
XLV  
126.0867691040039  
Sell  
XLU  
61.682369232177734  
Sell  
XLY  
193.0164031982422  
Sell  
XLP  
67.37193298339844  
Sell  
XLP  
67.43697357177734  
Sell  
XLP  
67.82720184326172  
Sell  
XLB  
83.9805679321289  
Sell  
XLB  
84.3677978515625  
Buy  
XLF

37.639591217041016  
Buy  
XLF  
37.44972610473633  
Buy  
XLF  
37.041526794433594  
Buy  
XLE  
49.13525390625  
Buy  
VOX  
134.90371704101562  
Buy  
IYR  
100.98451232910156  
Buy  
VOX  
134.36878967285156  
Sell  
IYR  
103.02938842773438  
Buy  
XLI  
98.65599822998047  
Buy  
XLF  
36.804203033447266  
Buy  
VOX  
132.24842834472656  
Buy  
IYR  
100.17952728271484  
Buy  
XLI  
98.82806396484375  
Buy  
XLF  
36.91812515258789  
Buy  
XLB  
79.94776916503906  
Buy  
XLI  
96.32365417480469  
Buy  
XLF

36.0352668762207  
Buy  
XLP  
65.3092269897461  
Buy  
XLE  
49.063350677490234  
Buy  
XLV  
124.2290267944336  
Buy  
VOX  
129.08738708496094  
Buy  
XLU  
60.324893951416016  
Buy  
IYR  
99.18022918701172  
Buy  
XLB  
79.13552856445312  
Buy  
XLI  
94.98543548583984  
Buy  
XLF  
35.63656234741211  
Buy  
XLP  
64.99333190917969  
Buy  
XLE  
48.54206085205078  
Buy  
XLV  
124.0087661743164  
Buy  
VOX  
125.8193588256836  
Buy  
IYR  
97.65352630615234  
Sell  
XLU  
62.764671325683594  
Sell  
XLK

168.4789581298828  
Sell  
XLU  
63.23245620727539  
Sell  
XLK  
169.2504425048828  
Sell  
XLK  
170.78366088867188  
Sell  
XLP  
69.83415985107422  
Sell  
XLV  
130.0895233154297  
Sell  
XLU  
64.2046890258789  
Sell  
XLP  
69.88060760498047  
Sell  
XLP  
70.58674621582031  
Sell  
XLV  
132.2154083251953  
Sell  
XLU  
64.86508178710938  
Sell  
XLP  
71.0884780883789  
Sell  
XLV  
133.00062561035156  
Sell  
XLU  
65.19528198242188  
Buy  
XLY  
187.74691772460938  
Sell  
XLK  
172.8385772705078  
Sell  
XLF

38.697444915771484  
Sell  
XLE  
53.895572662353516  
Sell  
XLE  
53.8864631652832  
Sell  
XLF  
38.8119010925293  
Sell  
XLE  
55.088191986083984  
Sell  
XLF  
39.26975631713867  
Sell  
XLE  
55.84383010864258  
Sell  
XLE  
57.56447219848633  
Buy  
XLU  
63.3874397277832  
Buy  
XLK  
156.0781707763672  
Buy  
XLY  
185.27101135253906  
Buy  
IYR  
99.98062896728516  
Buy  
XLB  
81.76728820800781  
Buy  
XLI  
98.00152587890625  
Buy  
XLK  
154.0626220703125  
Buy  
XLY  
181.89480590820312  
Buy  
VOX



125.55400085449219  
Buy  
IYR  
98.73731994628906  
Buy  
XLB  
79.77389526367188  
Buy  
XLI  
97.099609375  
Buy  
XLK  
151.00013732910156  
Buy  
XLY  
176.5613555908203  
Buy  
VOX  
121.1424331665039  
Buy  
XLB  
79.82134246826172  
Buy  
XLI  
97.65612030029297  
Buy  
VOX  
121.9622802734375  
Buy  
XLB  
79.09992218017578  
Buy  
XLI  
96.69662475585938  
Buy  
XLP  
70.04158782958984  
Buy  
VOX  
119.54176330566406  
Buy  
XLU  
62.03778076171875  
Buy  
XLB  
78.27409362792969  
Buy  
XLI

95.85227966308594  
Buy  
XLP  
69.50834655761719  
Buy  
VOX  
117.65806579589844  
Buy  
XLU  
61.52934265136719  
Buy  
XLI  
94.99834442138672  
Sell  
XLE  
62.15288162231445  
Buy  
XLI  
93.4439926147461  
Buy  
XLI  
91.72651672363281  
Buy  
XLK  
144.07290649414062  
Buy  
XLY  
165.2975311279297  
Buy  
VOX  
111.75320434570312  
Buy  
IYR  
92.74500274658203  
Buy  
XLP  
68.79736328125  
Sell  
XLE  
64.25589752197266  
Buy  
XLF  
35.38760757446289  
Sell  
XLE  
64.90228271484375  
Sell  
XLE

66.38623046875  
Sell  
XLE  
66.56831359863281  
Sell  
XLE  
68.4892578125  
Sell  
XLU  
65.53208923339844  
Buy  
XLB  
76.1098403930664  
Buy  
XLF  
34.21438217163086  
Buy  
XLK  
141.15719604492188  
Buy  
XLY  
159.69985961914062  
Sell  
XLE  
69.49979400634766  
Buy  
VOX  
108.78612518310547  
Sell  
XLU  
66.3825454711914  
Buy  
XLB  
75.72063446044922  
Buy  
XLF  
34.01407241821289  
Buy  
XLP  
67.80570983886719  
Sell  
XLE  
70.59228515625  
Buy  
VOX  
108.7763671875  
Buy  
XLP

68.26410675048828  
Buy  
XLP  
67.61860656738281  
Buy  
XLP  
66.8327865600586  
Sell  
XLV  
128.83993530273438  
Sell  
XLB  
81.23571014404297  
Sell  
XLI  
98.2989730834961  
Sell  
XLV  
130.8778076171875  
Sell  
IYR  
98.74665832519531  
Sell  
XLB  
81.72930908203125  
Sell  
XLI  
98.67317199707031  
Sell  
XLV  
131.68533325195312  
Sell  
XLB  
82.40866088867188  
Sell  
XLB  
82.85649871826172  
Sell  
XLB  
84.13325500488281  
Sell  
XLB  
85.07653045654297  
Sell  
IYR  
100.50959777832031  
Sell  
XLU

68.79896545410156  
Sell  
IYR  
103.37271881103516  
Sell  
XLU  
69.36663818359375  
Sell  
IYR  
102.66867065429688  
Sell  
XLU  
69.29218292236328  
Sell  
XLU  
70.260009765625  
Sell  
XLU  
71.55352783203125  
Sell  
XLV  
137.72747802734375  
Sell  
XLE  
74.46601104736328  
Sell  
XLB  
86.27709197998047  
Buy  
VOX  
110.01598358154297  
Buy  
VOX  
107.2013168334961  
Buy  
XLB  
81.69404602050781  
Buy  
XLV  
128.8946990966797  
Buy  
VOX  
104.37689208984375  
Buy  
XLB  
81.46538543701172  
Buy  
XLE

67.71977233886719  
Buy  
XLB  
80.2076644897461  
Buy  
XLI  
92.68629455566406  
Buy  
XLF  
33.82158660888672  
Buy  
XLY  
164.7869873046875  
Buy  
XLV  
127.47721862792969  
Buy  
VOX  
102.13884735107422  
Buy  
XLU  
67.93350982666016  
Buy  
XLF  
33.7928581237793  
Buy  
XLY  
164.80661010742188  
Buy  
XLV  
127.19759368896484  
Buy  
VOX  
99.97899627685547  
Buy  
XLU  
67.60781860351562  
Buy  
XLI  
91.5888442993164  
Buy  
XLF  
33.04594421386719  
Buy  
XLY  
159.6414031982422  
Buy  
XLV

125.63544464111328  
Buy  
XLU  
66.31427764892578  
Buy  
IYR  
97.39302062988281  
Buy  
XLF  
33.05552291870117  
Buy  
XLU  
65.63494873046875  
Buy  
IYR  
94.9898681640625  
Buy  
IYR  
96.41675567626953  
Buy  
IYR  
93.71321105957031  
Buy  
XLB  
77.99716186523438  
Buy  
XLI  
89.73088073730469  
Buy  
XLK  
132.45870971679688  
Buy  
XLY  
148.3994598388672  
Buy  
IYR  
89.74237823486328  
Buy  
XLB  
77.51121520996094  
Buy  
IYR  
88.0057373046875  
Buy  
XLK  
130.23358154296875  
Buy  
XLY

142.6559600830078  
Buy  
XLK  
128.89065551757812  
Buy  
XLP  
67.50242614746094  
Buy  
XLP  
66.29954528808594  
Buy  
XLP  
66.44049072265625  
Sell  
XLU  
68.91065216064453  
Sell  
XLU  
68.86410522460938  
Sell  
XLU  
69.05952453613281  
Sell  
XLE  
81.3685073852539  
Sell  
XLV  
129.23220825195312  
Sell  
XLU  
70.13903045654297  
Buy  
XLV  
121.00691223144531  
Buy  
IYR  
87.11388397216797  
Buy  
XLB  
74.77664947509766  
Buy  
XLI  
84.82123565673828  
Buy  
XLF  
30.221097946166992  
Buy  
XLK



122.80341339111328  
Buy  
XLV  
117.3426742553711  
Buy  
VOX  
90.93885803222656  
Buy  
XLU  
63.33637237548828  
Buy  
IYR  
82.81800842285156  
Buy  
XLB  
74.20496368408203  
Buy  
XLF  
29.962554931640625  
Buy  
XLV  
116.22412109375  
Buy  
VOX  
90.62611389160156  
Buy  
XLU  
61.735740661621094  
Buy  
IYR  
82.16797637939453  
Buy  
XLU  
62.13589859008789  
Buy  
XLB  
71.50850677490234  
Buy  
XLI  
82.57820129394531  
Buy  
XLE  
71.45134735107422  
Buy  
XLV  
115.67448425292969  
Buy  
VOX

89.31651306152344  
Buy  
XLU  
60.93544006347656  
Buy  
XLB  
71.38462829589844  
Buy  
XLE  
67.54512786865234  
Buy  
XLU  
60.367774963378906  
Buy  
XLE  
68.20037841796875  
Buy  
XLE  
65.6723861694336  
Buy  
XLB  
68.05069732666016  
Sell  
XLI  
86.44094848632812  
Sell  
XLF  
31.393007278442383  
Sell  
XLK  
132.7734375  
Sell  
XLY  
147.0725860595703  
Sell  
XLI  
87.10810089111328  
Sell  
XLK  
134.84710693359375  
Sell  
XLY  
149.48922729492188  
Sell  
VOX  
98.06851959228516  
Sell  
XLI

87.73658752441406  
Sell  
XLF  
31.710693359375  
Sell  
XLK  
136.7438507080078  
Sell  
XLY  
152.90789794921875  
Sell  
XLY  
152.0238037109375  
Sell  
IYR  
89.82706451416016  
Sell  
XLP  
69.9597396850586  
Sell  
IYR  
90.76913452148438  
Sell  
XLB  
73.97024536132812  
Sell  
XLI  
90.60828399658203  
Sell  
XLK  
139.5939178466797  
Sell  
XLP  
71.07698059082031  
Sell  
XLV  
128.63510131835938  
Sell  
XLU  
68.7773208618164  
Sell  
IYR  
93.7837905883789  
Sell  
XLB  
74.95842742919922  
Sell  
XLI

92.47441101074219  
Sell  
XLF  
32.45195388793945  
Sell  
XLK  
141.7363739013672  
Sell  
XLY  
159.96145629882812  
Sell  
XLP  
70.52781677246094  
Sell  
XLE  
72.88461303710938  
Sell  
XLU  
69.36830139160156  
Sell  
IYR  
94.3302001953125  
Sell  
XLI  
92.57109832763672  
Sell  
XLY  
160.7571563720703  
Sell  
XLP  
71.40836334228516  
Sell  
XLU  
69.44334411621094  
Sell  
XLF  
33.70344161987305  
Sell  
XLB  
77.82705688476562  
Sell  
XLF  
34.23291778564453  
Sell  
VOX  
101.52515411376953  
Sell  
XLB

77.77908325195312  
Sell  
XLF  
34.22328567504883  
Sell  
XLV  
130.03919982910156  
Sell  
VOX  
101.96581268310547  
Sell  
XLF  
34.47359085083008  
Sell  
XLP  
73.01793670654297  
Sell  
XLE  
76.36992645263672  
Buy  
XLV  
125.2555923461914  
Sell  
XLE  
77.30863189697266  
Buy  
XLV  
125.41050720214844  
Buy  
XLK  
137.47113037109375  
Buy  
XLV  
123.26079559326172  
Buy  
XLK  
135.65298461914062  
Buy  
XLV  
122.39897155761719  
Buy  
XLK  
134.23777770996094  
Buy  
XLY  
154.2930908203125  
Buy  
XLV

121.58555603027344  
Buy  
IYR  
89.15818786621094  
Buy  
XLI  
89.85411071777344  
Buy  
XLK  
132.9306640625  
Buy  
XLY  
152.77035522460938  
Buy  
XLV  
120.81086730957031  
Buy  
XLB  
71.39901733398438  
Buy  
XLI  
86.25723266601562  
Buy  
IYR  
83.99560546875  
Buy  
VOX  
85.4758071899414  
Buy  
IYR  
82.72380065917969  
Buy  
XLB  
67.4032211303711  
Buy  
XLI  
83.91098022460938  
Buy  
XLF  
30.53234100341797  
Buy  
XLY  
147.5380096435547  
Buy  
VOX  
84.79035186767578  
Buy  
IYR

81.90419006347656  
Buy  
XLB  
66.02350616455078  
Buy  
XLI  
82.33712768554688  
Buy  
XLF  
30.0484676361084  
Buy  
XLY  
144.14169311523438  
Buy  
XLP  
66.11693572998047  
Buy  
XLE  
66.21927642822266  
Buy  
VOX  
83.12567901611328  
Buy  
XLU  
67.76990509033203  
Buy  
IYR  
80.83023071289062  
Buy  
XLB  
64.95254516601562  
Buy  
XLI  
81.47245025634766  
Buy  
XLF  
29.57427406311035  
Buy  
XLY  
143.8168182373047  
Buy  
XLE  
64.59385681152344  
Buy  
VOX  
81.6960220336914  
Buy  
XLU

66.13609313964844  
Buy  
IYR  
78.64351654052734  
Buy  
XLF  
29.448467254638672  
Buy  
XLP  
65.02102661132812  
Buy  
XLE  
65.31731414794922  
Buy  
XLU  
65.02171325683594  
Buy  
IYR  
77.5201644897461  
Buy  
XLU  
63.08570861816406  
Buy  
XLP  
63.59157943725586  
Buy  
XLU  
61.867427825927734  
Sell  
XLP  
66.85073852539062  
Sell  
XLV  
125.39513397216797  
Sell  
XLB  
71.08887481689453  
Sell  
XLI  
88.48688507080078  
Sell  
XLP  
67.72744750976562  
Sell  
XLV  
126.347900390625  
Sell  
VOX



87.17217254638672  
Sell  
XLB  
71.59059143066406  
Sell  
XLP  
68.17534637451172  
Sell  
XLV  
127.74786376953125  
Sell  
XLI  
89.83731842041016  
Sell  
XLP  
68.23252868652344  
Sell  
XLI  
91.92610931396484  
Sell  
XLF  
33.087188720703125  
Sell  
XLP  
69.72868347167969  
Sell  
XLV  
129.1673126220703  
Buy  
VOX  
77.81897735595703  
Buy  
XLY  
129.9854736328125  
Sell  
XLB  
77.45677947998047  
Sell  
XLF  
34.432350158691406  
Sell  
IYR  
84.0127182006836  
Sell  
XLB  
78.39266967773438  
Sell  
XLF

34.71299743652344  
Sell  
XLK  
131.1702423095703  
Sell  
IYR  
83.81278228759766  
Sell  
XLB  
78.28652954101562  
Sell  
XLP  
71.84427642822266  
Sell  
XLP  
72.36841583251953  
Sell  
XLV  
132.02560424804688  
Sell  
XLP  
72.61618041992188  
Sell  
XLV  
132.55055236816406  
Sell  
XLU  
66.60829162597656  
Sell  
XLV  
133.33807373046875  
Sell  
XLU  
66.99549102783203  
Sell  
XLV  
135.1560821533203  
Sell  
XLV  
135.5449676513672  
Buy  
XLE  
82.3324966430664  
Buy  
XLE  
80.16214752197266  
Buy  
XLE

79.97425842285156  
Buy  
XLE  
79.61720275878906  
Buy  
XLE  
77.68174743652344  
Buy  
XLF  
32.864601135253906  
Buy  
VOX  
80.98765563964844  
Buy  
XLB  
76.29898071289062  
Buy  
XLF  
32.61298751831055  
Buy  
XLY  
131.82632446289062  
Buy  
IYR  
81.18733215332031  
Buy  
XLB  
75.30751037597656  
Buy  
XLI  
94.8052749633789  
Buy  
XLK  
123.91927337646484  
Buy  
XLY  
129.70993041992188  
Buy  
VOX  
79.03993225097656  
Buy  
IYR  
80.22676849365234  
Buy  
XLY  
128.19961547851562  
Buy  
IYR

80.00584411621094  
Sell  
XLF  
34.4535026550293  
Sell  
XLB  
80.57078552246094  
Sell  
XLI  
99.54944610595703  
Sell  
XLF  
34.843021392822266  
Sell  
VOX  
87.17508697509766  
Sell  
IYR  
86.0093994140625  
Sell  
XLB  
80.87181091308594  
Sell  
XLI  
100.1351547241211  
Sell  
XLE  
85.25929260253906  
Sell  
VOX  
87.91285705566406  
Sell  
IYR  
86.94115447998047  
Sell  
XLB  
81.36705780029297  
Sell  
XLY  
137.9031524658203  
Sell  
IYR  
86.46086120605469  
Buy  
XLP  
69.82559204101562  
Buy  
XLV

129.75796508789062  
Buy  
XLP  
69.163330078125  
Buy  
XLU  
65.5251693725586  
Sell  
XLK  
132.72265625  
Sell  
XLE  
88.38224029541016  
Sell  
XLY  
145.9878387451172  
Buy  
XLV  
128.52793884277344  
Sell  
XLY  
149.5711669921875  
Sell  
XLK  
141.24937438964844  
Sell  
XLY  
154.15147399902344  
Sell  
VOX  
99.55980682373047  
Sell  
IYR  
91.4846420288086  
Buy  
XLU  
63.21150207519531  
Buy  
XLV  
127.70792388916016  
Buy  
XLB  
77.64781188964844  
Buy  
XLF  
34.706687927246094  
Buy  
XLV

127.18074035644531  
Buy  
IYR  
85.35620880126953  
Buy  
XLF  
34.6677360534668  
Buy  
XLV  
126.751220703125  
Buy  
IYR  
84.48208618164062  
Buy  
XLV  
125.45285034179688  
Buy  
IYR  
83.55034637451172  
Buy  
XLV  
125.07213592529297  
Buy  
XLP  
69.13453674316406  
Buy  
XLV  
124.14474487304688  
Buy  
XLU  
61.8880500793457  
Buy  
XLP  
68.62583923339844  
Buy  
XLV  
123.93974304199219  
Buy  
XLU  
60.86928176879883  
Sell  
XLB  
82.15364074707031  
Buy  
XLF  
32.66168212890625  
Buy  
XLB

75.91928100585938  
Buy  
XLI  
96.64047241210938  
Buy  
XLF  
32.06765365600586  
Buy  
XLY  
136.42245483398438  
Buy  
XLP  
68.25151824951172  
Buy  
VOX  
86.46682739257812  
Buy  
IYR  
78.86275482177734  
Buy  
XLB  
75.14241027832031  
Buy  
XLI  
96.09381103515625  
Buy  
XLF  
30.801698684692383  
Buy  
XLF  
31.424938201904297  
Buy  
XLB  
73.6372299194336  
Buy  
XLI  
94.71741485595703  
Buy  
XLF  
30.587461471557617  
Buy  
XLE  
73.43195343017578  
Sell  
XLK  
141.94100952148438  
Buy  
XLE

74.22930145263672  
Buy  
XLI  
94.36599731445312  
Sell  
XLK  
141.74342346191406  
Buy  
XLE  
73.06175231933594  
Sell  
XLK  
143.2742919921875  
Sell  
VOX  
93.05758666992188  
Buy  
IYR  
76.50936889648438  
Buy  
IYR  
76.05630493164062  
Sell  
XLP  
70.74956512451172  
Sell  
XLP  
71.27035522460938  
Sell  
XLP  
71.47288513183594  
Sell  
XLK  
149.5324249267578  
Sell  
XLY  
148.0670623779297  
Sell  
XLP  
72.05152130126953  
Sell  
XLV  
126.87321472167969  
Sell  
XLP  
72.42765045166016  
Sell  
XLE



83.04151153564453  
Sell  
XLV  
128.2942352294922  
Sell  
XLV  
128.31382751464844  
Sell  
XLV  
130.52867126464844  
Sell  
XLU  
66.4876937866211  
Sell  
XLV  
130.8520965576172  
Sell  
XLU  
66.95767974853516  
Sell  
XLF  
32.54976272583008  
Sell  
XLF  
32.64763259887695  
Buy  
XLK  
142.5613250732422  
Buy  
XLB  
76.6103515625  
Buy  
XLI  
95.19425201416016  
Buy  
VOX  
92.3212661743164  
Sell  
XLP  
74.68438720703125  
Buy  
XLE  
77.2195816040039  
Buy  
XLE  
75.76171112060547  
Buy  
XLU

65.28877258300781  
Buy  
XLF  
30.87628173828125  
Buy  
XLE  
74.91767883300781  
Buy  
XLV  
128.2452392578125  
Buy  
XLU  
63.92679214477539  
Buy  
IYR  
79.1959228515625  
Sell  
XLY  
149.00772094726562  
Buy  
XLU  
63.696598052978516  
Sell  
XLK  
156.00845336914062  
Sell  
XLY  
151.32467651367188  
Buy  
XLP  
73.17025756835938  
Sell  
VOX  
100.20630645751953  
Buy  
XLU  
63.5047721862793  
Sell  
XLK  
155.9391326904297  
Buy  
XLP  
72.10939025878906  
Buy  
XLP  
71.57897186279297  
Buy  
XLV

127.40241241455078  
Buy  
XLB  
74.25010681152344  
Buy  
XLI  
95.36087799072266  
Buy  
XLP  
71.11604309082031  
Buy  
XLV  
126.53018951416016  
Buy  
IYR  
77.77584838867188  
Buy  
XLB  
73.98677825927734  
Sell  
XLK  
158.66221618652344  
Buy  
XLP  
70.57598114013672  
Buy  
XLV  
125.236572265625  
Buy  
XLU  
61.950950622558594  
Buy  
IYR  
77.78549194335938  
Sell  
XLK  
163.16769409179688  
Buy  
XLV  
124.98175811767578  
Sell  
XLK  
164.0391082763672  
Buy  
XLP  
70.00696563720703  
Buy  
XLV

124.20755004882812  
Buy  
XLB  
73.16751098632812  
Buy  
XLI  
94.92960357666016  
Buy  
XLE  
73.45979309082031  
Sell  
XLI  
98.93850708007812  
Sell  
XLY  
155.45358276367188  
Sell  
XLY  
155.91896057128906  
Sell  
XLF  
32.334468841552734  
Sell  
XLY  
157.54281616210938  
Sell  
XLI  
100.45777130126953  
Sell  
XLF  
32.4616813659668  
Sell  
XLE  
78.77337646484375  
Sell  
XLI  
100.63420104980469  
Sell  
XLY  
158.7904052734375  
Sell  
XLY  
162.3549346923828  
Sell  
XLB  
79.19491577148438  
Sell  
XLI

102.26128387451172  
Sell  
XLY  
164.03819274902344  
Sell  
XLI  
103.52571105957031  
Sell  
VOX  
105.53538513183594  
Sell  
XLB  
81.22010040283203  
Sell  
XLF  
33.138187408447266  
Sell  
XLB  
81.52392578125  
Sell  
XLF  
33.3249626159668  
Sell  
IYR  
84.7139663696289  
Sell  
IYR  
85.0051498413086  
Buy  
XLV  
126.94280242919922  
Sell  
XLI  
107.24623107910156  
Sell  
XLE  
80.51219940185547  
Sell  
VOX  
106.8108139038086  
Sell  
XLF  
33.77715301513672  
Sell  
XLE  
81.25724029541016  
Sell  
VOX

108.23561096191406  
Sell  
XLB  
82.08257293701172  
Sell  
XLK  
174.89105224609375  
Sell  
XLY  
173.0989990234375  
Sell  
VOX  
109.71978759765625  
Sell  
XLK  
176.86570739746094  
Sell  
XLF  
34.37681198120117  
Sell  
XLK  
178.8701171875  
Sell  
XLP  
73.2037124633789  
Sell  
XLV  
132.72903442382812  
Sell  
XLU  
65.2144546508789  
Sell  
XLP  
73.45624542236328  
Sell  
XLV  
134.06735229492188  
Sell  
XLU  
66.19099426269531  
Sell  
XLP  
73.73790740966797  
Sell  
XLE  
82.88277435302734  
Sell  
XLV

133.77212524414062  
Sell  
XLU  
66.01696014404297  
Sell  
XLB  
83.81732177734375  
Sell  
XLE  
83.31817626953125  
Sell  
VOX  
111.11491394042969  
Sell  
VOX  
111.43152618408203  
Buy  
XLU  
61.869140625  
Buy  
IYR  
83.22895050048828  
Buy  
XLU  
61.85947036743164  
Buy  
XLK  
169.0067596435547  
Buy  
XLK  
166.82373046875  
Buy  
XLB  
79.92637634277344  
Buy  
XLI  
105.82914733886719  
Buy  
XLF  
33.629703521728516  
Buy  
XLP  
71.51372528076172  
Buy  
XLB  
79.38732147216797  
Buy  
XLI

105.23868560791016  
Buy  
XLF  
33.58055114746094  
Buy  
XLY  
164.5368194580078  
Buy  
XLP  
71.34860229492188  
Buy  
IYR  
81.05481719970703  
Buy  
XLI  
104.3530044555664  
Buy  
XLF  
33.41343688964844  
Buy  
XLY  
161.7489013671875  
Buy  
XLP  
70.65901184082031  
Buy  
IYR  
80.49185943603516  
Buy  
XLI  
104.54981994628906  
Buy  
XLY  
161.38180541992188  
Buy  
VOX  
104.44602966308594  
Buy  
XLP  
70.4453353881836  
Buy  
XLF  
33.04970932006836  
Buy  
XLP  
70.04712677001953  
Sell  
XLK



173.46212768554688  
Sell  
XLK  
174.3055877685547  
Sell  
XLK  
174.84141540527344  
Sell  
XLE  
87.79805755615234  
Sell  
XLE  
88.26251220703125  
Buy  
XLU  
59.63570785522461  
Sell  
XLE  
88.30121612548828  
Buy  
XLV  
129.37339782714844  
Buy  
XLU  
59.77106475830078  
Sell  
XLY  
171.9282684326172  
Sell  
XLE  
89.96543884277344  
Sell  
XLF  
34.41613006591797  
Sell  
XLU  
63.05837631225586  
Buy  
XLB  
77.25873565673828  
Buy  
XLI  
100.92451477050781  
Buy  
XLK  
163.1427459716797  
Buy  
XLP

68.95729064941406  
Buy  
IYR  
78.30801391601562  
Buy  
XLB  
77.1799545288086  
Buy  
XLI  
100.57868194580078  
Buy  
XLF  
33.23694610595703  
Buy  
XLY  
159.94935607910156  
Buy  
XLP  
68.58572387695312  
Buy  
VOX  
104.21846771240234  
Buy  
IYR  
77.8324203491211  
Buy  
XLP  
68.34124755859375  
Buy  
VOX  
104.28772735595703  
Buy  
IYR  
77.68682098388672  
Buy  
XLB  
76.6678466796875  
Buy  
XLI  
99.54117584228516  
Buy  
XLF  
32.87159729003906  
Buy  
XLK  
161.06443786621094  
Buy  
XLY

158.00131225585938  
Buy  
XLP  
67.83277893066406  
Buy  
VOX  
103.1696548461914  
Buy  
IYR  
76.2536392211914  
Buy  
XLF  
32.82222366333008  
Buy  
XLY  
157.39501953125  
Buy  
XLP  
67.2754135131836  
Buy  
XLV  
127.56230926513672  
Buy  
XLU  
58.608177185058594  
Buy  
IYR  
75.70391845703125  
Buy  
XLU  
57.34107971191406  
Buy  
XLV  
127.20659637451172  
Buy  
XLU  
57.43854904174805  
Buy  
XLE  
86.35031127929688  
Buy  
XLU  
54.76789474487305  
Buy  
XLF  
31.96315574645996  
Buy  
XLP

66.3464584350586  
Buy  
XLV  
125.90230560302734  
Buy  
XLU  
55.40144348144531  
Buy  
XLE  
83.58211517333984  
Buy  
XLP  
65.55441284179688  
Buy  
XLE  
83.06551361083984  
Buy  
XLB  
75.06260681152344  
Buy  
XLY  
153.14111328125  
Buy  
XLB  
74.15657043457031  
Buy  
XLF  
31.795291900634766  
Buy  
XLY  
150.7656707763672  
Buy  
XLB  
73.3293228149414  
Buy  
XLF  
31.597806930541992  
Buy  
XLY  
150.944580078125  
Buy  
IYR  
72.68047332763672  
Buy  
XLB  
73.3293228149414  
Buy  
XLY

149.47360229492188  
Buy  
VOX  
102.421875  
Buy  
IYR  
71.9344253540039  
Buy  
XLK  
159.29441833496094  
Buy  
XLY  
147.13792419433594  
Buy  
XLV  
123.76803588867188  
Buy  
VOX  
100.18819427490234  
Buy  
XLF  
31.054719924926758  
Buy  
XLV  
121.67327880859375  
Buy  
VOX  
99.97972106933594  
Sell  
XLP  
67.1482925415039  
Sell  
XLU  
59.94350814819336  
Sell  
XLP  
67.22651672363281  
Sell  
XLU  
60.294395446777344  
Sell  
XLK  
178.51632690429688  
Sell  
XLB  
78.32234191894531  
Sell  
XLI

103.45404815673828  
Sell  
XLY  
166.52903747558594  
Sell  
XLP  
68.34124755859375  
Sell  
IYR  
80.21944427490234  
Sell  
XLB  
78.6670150756836  
Sell  
XLI  
103.67143249511719  
Sell  
XLP  
68.88883972167969  
Sell  
IYR  
84.98039245605469  
Buy  
XLE  
79.83920288085938  
Buy  
XLE  
79.29334259033203  
Sell  
XLK  
187.23728942871094  
Sell  
XLK  
188.4803009033203  
Buy  
XLE  
79.14714050292969  
Sell  
XLB  
82.7244644165039  
Sell  
XLI  
110.40039825439453  
Sell  
XLF  
36.732452392578125  
Sell  
XLK

190.14097595214844  
Sell  
XLY  
175.3946990966797  
Sell  
XLP  
70.6978530883789  
Sell  
XLV  
134.3504638671875  
Sell  
XLU  
64.2906265258789  
Sell  
IYR  
88.13145446777344  
Sell  
XLB  
84.09334564208984  
Sell  
XLI  
111.82325744628906  
Sell  
XLF  
37.097801208496094  
Sell  
XLK  
189.67359924316406  
Sell  
XLY  
177.750244140625  
Sell  
VOX  
114.30508422851562  
Sell  
XLU  
63.45238494873047  
Sell  
IYR  
90.56591796875  
Sell  
XLB  
83.87670135498047  
Sell  
XLK  
190.6282196044922  
Sell  
XLY

178.1179962158203  
Sell  
XLY  
179.22320556640625  
Sell  
VOX  
115.25811767578125  
Sell  
XLB  
84.7801284790039  
Sell  
XLY  
180.6271209716797  
Sell  
VOX  
116.6006851196289  
Sell  
VOX  
117.05848693847656  
Sell  
XLP  
71.76583862304688  
Sell  
XLV  
137.740966796875  
Buy  
XLB  
81.80503845214844  
Buy  
XLE  
79.42515563964844  
Buy  
XLB  
81.21002197265625  
Buy  
XLE  
78.76582336425781  
Buy  
IYR  
87.05433654785156  
Buy  
XLU  
60.07529067993164  
Buy  
IYR  
86.47026824951172  
Sell  
XLK



199.49002075195312  
Sell  
VOX  
120.08396911621094  
Sell  
XLF  
37.81731414794922  
Sell  
XLK  
200.36705017089844  
Sell  
VOX  
120.49201202392578  
Sell  
XLF  
37.876853942871094  
Sell  
XLK  
201.17428588867188  
Sell  
VOX  
121.76589965820312  
Sell  
XLF  
38.02570343017578  
Sell  
VOX  
122.40284729003906  
Sell  
XLF  
38.21424102783203  
Sell  
VOX  
124.37339782714844  
Sell  
XLF  
38.35316848754883  
Sell  
VOX  
124.771484375  
Sell  
XLF  
38.45240020751953  
Sell  
VOX  
126.11503601074219  
Sell  
XLF

38.93864059448242  
Sell  
XLP  
72.37669372558594  
Sell  
XLP  
73.31269073486328  
Sell  
XLV  
141.13536071777344  
Sell  
XLI  
114.82942962646484  
Sell  
XLY  
176.55477905273438  
Sell  
XLP  
73.07621765136719  
Sell  
VOX  
128.065673828125  
Buy  
XLB  
80.30757904052734  
Sell  
XLV  
141.36363220214844  
Buy  
IYR  
84.48051452636719  
Sell  
XLV  
142.90200805664062  
Sell  
XLI  
115.99182891845703  
Sell  
XLV  
143.2891082763672  
Sell  
XLY  
177.85911560058594  
Sell  
XLY  
179.12362670898438  
Buy  
IYR

84.4607162475586  
Sell  
XLB  
84.01652526855469  
Sell  
XLF  
39.464569091796875  
Sell  
XLB  
84.4627914428711  
Sell  
XLE  
85.0048828125  
Sell  
XLB  
85.60324096679688  
Sell  
XLF  
39.792030334472656  
Sell  
XLE  
85.15250396728516  
Sell  
XLB  
86.1090087890625  
Sell  
XLF  
39.99049758911133  
Sell  
XLK  
210.04405212402344  
Sell  
IYR  
88.65801239013672  
Sell  
XLK  
210.04405212402344  
Sell  
IYR  
89.51925659179688  
Sell  
XLP  
74.64278411865234  
Sell  
XLU  
62.564491271972656  
Sell  
XLE

87.66191101074219  
Sell  
XLE  
88.9215316772461  
Sell  
XLE  
89.83673095703125  
Sell  
XLE  
90.10242462158203  
Sell  
XLE  
90.41392517089844  
Sell  
VOX  
129.080810546875  
Sell  
XLE  
91.44564056396484  
Sell  
XLI  
123.98407745361328  
Sell  
XLF  
41.396095275878906  
Sell  
VOX  
130.74282836914062  
Sell  
XLI  
125.2098617553711  
Sell  
XLF  
41.7347526550293  
Sell  
VOX  
130.643310546875  
Sell  
XLI  
124.78133392333984  
Sell  
XLI  
125.50883483886719  
Sell  
XLV  
147.13348388671875  
Sell  
XLU

64.67850494384766  
Sell  
XLV  
147.1533966064453  
Sell  
XLU  
65.12491607666016  
Buy  
XLK  
203.75254821777344  
Buy  
XLP  
73.65392303466797  
Buy  
XLV  
141.39596557617188  
Buy  
IYR  
85.0706787109375  
Buy  
XLB  
89.49366760253906  
Buy  
XLF  
39.90201187133789  
Buy  
XLP  
72.83013916015625  
Buy  
XLV  
138.36782836914062  
Buy  
IYR  
84.26578521728516  
Buy  
XLB  
89.06571197509766  
Buy  
XLI  
121.60224914550781  
Buy  
XLF  
39.702796936035156  
Buy  
XLK  
201.16709899902344  
Buy  
XLY

173.78614807128906  
Buy  
XLP  
72.53239440917969  
Buy  
XLV  
138.08892822265625  
Buy  
VOX  
128.54022216796875  
Buy  
IYR  
82.89447784423828  
Buy  
XLB  
88.37898254394531  
Buy  
XLI  
121.32321166992188  
Buy  
XLF  
39.43386459350586  
Buy  
XLK  
201.4066619873047  
Buy  
XLY  
172.7982635498047  
Buy  
VOX  
128.09127807617188  
Buy  
XLU  
62.267948150634766  
Buy  
IYR  
81.66228485107422  
Buy  
XLB  
88.57803344726562  
Buy  
XLI  
120.69537353515625  
Buy  
XLK  
198.50177001953125  
Buy  
XLY

171.96006774902344  
Buy  
VOX  
127.80195617675781  
Buy  
IYR  
81.11575317382812  
Buy  
XLI  
120.27680969238281  
Buy  
XLK  
196.23574829101562  
Buy  
XLY  
170.89236450195312  
Buy  
XLK  
192.1928253173828  
Buy  
XLY  
169.3955841064453  
Buy  
VOX  
127.0038070678711  
Buy  
XLK  
193.90982055664062  
Buy  
VOX  
125.20799255371094  
Buy  
XLE  
91.29683685302734  
Sell  
XLV  
142.0135498046875  
Sell  
XLB  
91.29509735107422  
Sell  
XLI  
125.16002655029297  
Sell  
XLV  
142.74069213867188  
Sell  
XLU

70.76940155029297  
Sell  
IYR  
85.85570526123047  
Sell  
XLB  
91.4045639038086  
Sell  
XLI  
125.24972534179688  
Sell  
XLV  
143.02955627441406  
Sell  
XLK  
212.6569366455078  
Sell  
XLV  
145.62937927246094  
Sell  
IYR  
87.84310150146484  
Sell  
XLP  
77.81253051757812  
Sell  
XLV  
145.4600372314453  
Buy  
XLY  
173.41693115234375  
Buy  
XLI  
120.7850570678711  
Buy  
XLE  
89.95758819580078  
Sell  
VOX  
136.37196350097656  
Sell  
VOX  
136.33204650878906  
Buy  
XLU  
69.38059997558594  
Sell  
XLK



219.784423828125  
Sell  
XLK  
224.64588928222656  
Sell  
XLK  
226.42279052734375  
Sell  
XLK  
227.2712860107422  
Sell  
XLK  
230.71524047851562  
Sell  
XLY  
181.0704803466797  
Sell  
XLK  
231.00474548339844  
Sell  
VOX  
138.1977081298828  
Sell  
VOX  
138.33738708496094  
Sell  
XLY  
184.4499969482422  
Sell  
VOX  
139.35499572753906  
Sell  
IYR  
87.73999786376953  
Buy  
XLB  
86.94999694824219  
Buy  
XLI  
120.55999755859375  
Buy  
XLB  
87.11000061035156  
Sell  
XLF  
41.68000030517578  
Sell  
XLY

186.5800018310547  
Sell  
XLY  
187.77000427246094  
Buy  
XLV  
143.3000030517578  
Sell  
XLY  
189.3000030517578  
Sell  
VOX  
142.05999755859375  
Sell  
XLK  
237.67999267578125  
Sell  
IYR  
88.44000244140625  
Sell  
XLF  
42.2400016784668  
Sell  
XLU  
70.73999786376953  
Sell  
IYR  
90.87999725341797  
Sell  
XLB  
90.5  
Sell  
XLI  
124.18000030517578  
Sell  
XLF  
42.380001068115234  
Sell  
XLV  
148.27000427246094  
Sell  
XLU  
71.26000213623047  
Sell  
IYR  
91.63999938964844  
Sell  
XLI

125.06999969482422  
Sell  
XLF  
43.0  
Sell  
IYR  
92.05999755859375  
Sell  
XLB  
92.0199966430664  
Sell  
XLI  
128.19000244140625  
Sell  
XLF  
43.4900016784668  
Sell  
XLV  
149.86000061035156  
Sell  
IYR  
93.19000244140625  
Sell  
XLB  
91.83000183105469  
Sell  
XLF  
43.81999969482422  
Sell  
XLP  
78.73999786376953  
Sell  
XLE  
93.22000122070312  
Sell  
XLV  
150.5399932861328  
Sell  
IYR  
93.80000305175781  
Sell  
XLE  
93.38999938964844  
Buy  
XLK  
215.8800048828125  
Buy  
VOX

133.1999969482422  
Buy  
XLK  
213.57000732421875  
Buy  
VOX  
131.86000061035156  
Sell  
XLU  
72.79000091552734  
Sell  
XLU  
74.0999984741211  
Buy  
XLY  
176.16000366210938  
Sell  
XLP  
79.26000213623047  
Sell  
XLU  
74.22000122070312  
Buy  
XLI  
120.5999984741211  
Buy  
XLF  
40.84000015258789  
Buy  
XLK  
197.89999389648438  
Buy  
XLY  
171.17999267578125  
Buy  
XLE  
86.44999694824219  
Buy  
VOX  
129.82000732421875  
Buy  
XLE  
86.9800033569336  
Buy  
XLB  
87.27999877929688  
Buy  
XLY

170.0500030517578  
 Sell  
 XLP  
 80.29000091552734  
 Sell  
 XLP  
 80.51000213623047  
 Sell  
 XLP  
 80.77999877929688  
 Sell  
 XLP  
 81.18000030517578  
 Sell  
 XLP  
 81.7300033569336  
 Sell  
 IYR  
 99.13999938964844  
 Sell  
 IYR  
 98.98999786376953  
 Sell  
 IYR  
 99.20999908447266

[ ]: portfolio\_data

```
[ ]: {'all_data': {'Adjusted Close':
```

				XLB	XLI	XLF
XLK	XLY \					
Date						
2000-01-03	14.953676	18.527161	11.392448	41.704247	22.629520	
2000-01-04	14.809719	18.015301	10.894417	39.588467	21.948755	
2000-01-05	15.421544	17.935019	10.808816	39.000755	21.678797	
2000-01-06	15.817423	18.175886	11.283508	37.707798	21.925287	
2000-01-07	15.808424	18.868389	11.470265	38.366013	22.958174	
...	...	...	...	...	...	
2024-07-25	89.860001	124.180000	42.740002	213.570007	180.589996	
2024-07-26	91.330002	126.300003	43.410000	216.279999	182.610001	
2024-07-29	91.489998	126.080002	43.349998	215.320007	185.660004	
2024-07-30	91.190002	126.449997	43.849998	209.910004	184.630005	
2024-07-31	92.139999	127.860001	43.740002	218.800003	187.490005	
	XLP	XLE	XLV	VOX	XLU	IYR
Date						
2000-01-03	12.702888	14.077825	21.058601	NaN	11.593003	NaN
2000-01-04	12.345187	13.812834	20.580742	NaN	11.243299	NaN

2000-01-05	12.563298	14.177202	20.396105		NaN	11.527017	NaN
2000-01-06	12.798860	14.723746	20.461271		NaN	11.507228	NaN
2000-01-07	13.610244	14.881091	20.711063		NaN	11.606196	NaN
...	...	...	...	...	...	...	...
2024-07-25	77.699997	91.900002	149.119995	131.860001	70.480003	91.889999	
2024-07-26	78.489998	92.190002	149.960007	133.779999	71.169998	93.440002	
2024-07-29	78.519997	91.400002	150.050003	134.899994	71.489998	94.040001	
2024-07-30	77.989998	92.820000	150.179993	135.240005	71.860001	94.680000	
2024-07-31	77.849998	93.209999	149.630005	136.380005	72.790001	94.430000	

[6183 rows x 11 columns],

'Bollinger Signal':

XLB XLI XLF XLK XLY XLP XLE XLV VOX

XLU IYR

Date

2000-01-03	nan	nan	nan	nan	nan	nan	nan	nan	NaN	nan	NaN
2000-01-04	nan	nan	nan	nan	nan	nan	nan	nan	NaN	nan	NaN
2000-01-05	nan	nan	nan	nan	nan	nan	nan	nan	NaN	nan	NaN
2000-01-06	nan	nan	nan	nan	nan	nan	nan	nan	NaN	nan	NaN
2000-01-07	nan	nan	nan	nan	nan	nan	nan	nan	NaN	nan	NaN
...	...	...	...	...	...	...	...	...	...	...	...
2024-07-25	nan	nan	nan	Buy	nan	nan	nan	nan	Buy	nan	nan
2024-07-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2024-07-29	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2024-07-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2024-07-31	nan	nan	nan	nan	nan	nan	nan	nan	nan	Sell	nan

[6183 rows x 11 columns]],

'trough': {'Adjusted Close':

XLB

XLI

XLF

XLK

XLY

XLP \

Date

2008-01-02	28.801895	27.678572	16.648191	20.682907	25.905008	18.187737
2008-01-03	29.324930	27.700136	16.542526	20.714577	25.615395	18.091637
2008-01-04	28.439259	27.132330	16.072908	19.906902	24.810886	18.014755
2008-01-07	28.048721	26.794531	16.113998	19.732691	24.899380	18.226173
2008-01-08	27.616333	26.197971	15.526961	19.210073	24.416677	18.091637
...	...	...	...	...	...	...
2009-06-24	18.324322	16.016405	7.210423	14.505184	18.439775	15.126433
2009-06-25	18.715118	16.510366	7.365690	14.715517	19.083603	15.386078
2009-06-26	18.686172	16.443020	7.402951	14.691250	18.951530	15.332823
2009-06-29	18.852625	16.607670	7.496108	14.844962	19.190899	15.426031
2009-06-30	18.671703	16.435530	7.421583	14.731698	19.050589	15.306188

XLE

XLV

VOX

XLU

IYR

Date

2008-01-02	47.723305	26.220280	51.236694	23.351946	35.358303
2008-01-03	48.287590	26.377880	51.098690	23.318655	34.213158
2008-01-04	46.522743	26.107719	49.870564	23.496199	33.127720

2008-01-07	46.342628	26.625513	50.408741	23.984426	33.437061
2008-01-08	45.532234	26.843132	48.635529	23.989975	32.221367
...	...	...	...	...	...
2009-06-24	29.038153	19.861139	34.930637	16.102045	18.738127
2009-06-25	29.646959	20.410694	35.735035	16.372564	19.036978
2009-06-26	29.450172	20.410694	35.542835	16.313755	19.204348
2009-06-29	29.726896	20.534534	35.856033	16.525469	19.252148
2009-06-30	29.548561	20.364256	35.393341	16.401966	19.377680

[377 rows x 11 columns],

'Bollinger Signal':		XLB	XLI	XLF	XLK	XLX	XLZ	XLV	VOX
XLU	IYR								
Date									
2008-01-02	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-03	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-04	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-07	nan	nan	nan	nan	nan	nan	nan	nan	nan
2008-01-08	nan	nan	nan	nan	nan	nan	nan	nan	nan
...	...	...	...	...	...	...	...	...	...
2009-06-24	nan	nan	nan	nan	nan	nan	nan	nan	nan
2009-06-25	nan	nan	nan	nan	nan	nan	nan	Sell	nan
2009-06-26	nan	nan	nan	nan	nan	nan	nan	nan	nan
2009-06-29	nan	nan	nan	nan	nan	nan	nan	Sell	nan
2009-06-30	nan	nan	nan	nan	nan	nan	nan	nan	nan

[377 rows x 11 columns]],

'contraction': {'Adjusted Close':		XLB	XLI	XLF
XLK	XLX			
Date				
2020-02-03	53.674702	75.240028	27.563168	92.626572
2020-02-04	54.623417	76.659821	27.828110	95.052773
2020-02-05	55.635971	77.940437	28.385405	95.608948
2020-02-06	55.608593	78.191002	28.348856	96.481621
2020-02-07	54.814980	77.624924	28.248363	95.599358
2020-02-10	54.787609	78.061073	28.330589	96.893967
2020-02-11	55.088634	78.358032	28.431084	96.567924
2020-02-12	55.389664	79.091133	28.449354	97.613205
2020-02-13	55.188988	78.645699	28.440218	97.354279
2020-02-14	55.198109	78.543610	28.476767	97.776222
2020-02-18	55.061272	78.098175	28.230095	97.411819
2020-02-19	55.207230	78.070343	28.440218	98.572151
2020-02-20	55.298454	77.959000	28.385405	97.546066
2020-02-21	55.043026	77.569267	28.111328	95.359650
2020-02-24	53.492264	75.360672	27.197731	91.418274
2020-02-25	51.184368	72.289085	26.275002	88.493423
2020-02-26	51.011040	71.741577	26.083143	88.896187
2020-02-27	48.621037	69.078285	24.968555	84.101349

2020-02-28	48.091957	67.816254	24.292498	84.743881	111.418839	51.467316
2020-03-02	50.153557	70.201118	25.534986	89.644188	115.247269	54.218628
2020-03-03	49.715698	68.484398	24.575710	86.239861	112.457710	53.481979
2020-03-04	51.777298	71.314705	25.388811	89.941467	116.343826	56.109039
2020-03-05	50.135315	67.825516	24.164591	87.102928	112.005615	55.052898
2020-03-06	48.830845	67.231628	23.342358	85.261726	110.283783	54.618008
2020-03-09	44.260654	61.032764	20.839108	78.788696	103.338722	52.239464
2020-03-10	46.057716	64.197151	22.063326	84.043816	109.052513	53.739368
2020-03-11	43.868401	60.429588	20.866510	80.073692	103.088638	51.103439
2020-03-12	39.644852	54.175056	18.609936	72.258110	92.671066	46.301945
2020-03-13	42.427097	58.406605	21.058369	80.735405	98.404114	50.242527
2020-03-16	37.756554	51.780884	18.171406	69.582619	85.937653	46.834457
2020-03-17	40.091824	54.165771	19.158091	74.319908	89.246643	50.783920
2020-03-18	37.528515	50.175480	17.531891	71.519722	84.119637	49.479267
2020-03-19	38.486332	50.212608	17.915602	71.778641	87.053497	47.828476
2020-03-20	37.108891	47.697811	17.276085	68.489380	84.465935	44.731033
2020-03-23	35.217167	45.608604	16.270903	67.863754	84.605133	43.407303
2020-03-24	39.358749	51.378662	18.288643	74.814026	92.540771	45.620953
2020-03-25	40.277058	54.081314	18.786167	74.717628	94.164627	45.495998
2020-03-26	42.168777	57.494720	19.965485	79.344704	98.059967	47.986355
2020-03-27	40.644379	55.072613	19.357393	75.758698	94.773598	47.763206
2020-03-30	41.939190	55.876865	19.725933	78.949471	96.755089	49.628746
2020-03-31	41.360661	55.184826	19.182344	77.474602	94.802574	48.620110

	XLE	XLV	VOX	XLU	IYR
Date					
2020-02-03	43.006950	93.150154	91.689774	59.895897	84.152992
2020-02-04	43.161880	94.788940	92.600258	59.298668	85.013512
2020-02-05	44.784630	96.613960	92.581085	59.541012	85.031242
2020-02-06	44.327988	96.697739	93.712006	59.558331	85.350624
2020-02-07	44.018116	95.943527	93.606544	59.367901	85.315132
2020-02-10	43.797932	96.455650	94.239113	59.592945	86.175644
2020-02-11	44.287212	97.032959	94.469116	59.809349	86.876495
2020-02-12	44.882484	97.153984	95.379608	59.852619	87.568436
2020-02-13	44.743866	96.697739	95.475441	60.519070	88.162811
2020-02-14	44.507389	96.772232	95.389168	60.925888	88.961235
2020-02-18	44.140430	96.427727	95.973808	61.436569	88.899124
2020-02-19	44.727558	96.874657	96.414658	60.770084	87.781349
2020-02-20	44.678631	96.250809	96.002556	60.986481	88.730568
2020-02-21	44.148582	96.306679	94.660774	60.873962	88.899124
2020-02-24	42.109947	93.271179	91.555603	60.164211	87.710396
2020-02-25	40.250721	90.440575	89.226692	58.900509	85.359497
2020-02-26	39.035694	90.431236	88.718742	58.303291	84.463493
2020-02-27	36.948147	87.358513	85.306847	55.680679	80.036713
2020-02-28	36.915524	86.231850	85.479362	53.819740	77.535011
2020-03-02	38.407803	90.272964	88.086197	56.987640	81.269821
2020-03-03	37.233547	88.028938	85.354759	56.286556	81.278709



2020-03-04	38.114246	93.103569	88.172455	59.480423	84.383659									
2020-03-05	36.719814	90.943367	84.952240	58.562943	82.547295									
2020-03-06	34.656727	90.459190	83.658417	58.086895	81.145638									
2020-03-09	27.676451	85.756981	77.840942	54.927650	75.130905									
2020-03-10	28.989330	88.699348	81.535393	55.438320	78.031807									
2020-03-11	27.456276	85.310036	77.808273	52.651257	73.489708									
2020-03-12	24.031378	78.941116	70.623009	47.336792	66.330566									
2020-03-13	26.249405	84.416161	76.799637	49.916122	71.990463									
2020-03-16	22.677729	76.091850	68.029411	44.246784	59.845673									
2020-03-17	22.832664	80.868546	70.738289	49.907467	62.657860									
2020-03-18	19.554546	78.186897	68.077446	47.734947	56.492332									
2020-03-19	20.883730	76.585350	69.643211	44.956543	56.518948									
2020-03-20	21.087595	73.643005	66.473259	41.390484	54.043854									
2020-03-23	19.650297	69.818062	66.367577	39.278381	51.311497									
2020-03-24	22.801680	75.198044	70.901596	43.500835	55.418911									
2020-03-25	23.877157	76.199181	70.286819	44.611084	58.461548									
2020-03-26	25.336124	81.261032	74.321335	48.413910	62.796684									
2020-03-27	23.618711	79.520737	71.506760	48.676170	62.877293									
2020-03-30	23.860481	83.244614	73.658493	50.477058	64.131271									
2020-03-31	24.227312	82.879707	73.178200	48.440136	62.313000	,								
'Bollinger Signal':						XLB	XLI	XLF	XLK	XLY	XLP	XLE	XLV	VOX
XLU IYR														
Date														
2020-02-03	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-07	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-10	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-11	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-12	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-13	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-14	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-18	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-19	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-20	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-21	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-25	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-02-28	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-02	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-03	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-04	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-05	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-06	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan

2020-03-09	Buy	Buy	Buy	Buy	Buy	nan	Buy	nan	Buy	nan	Buy
2020-03-10	nan	nan	nan	nan	nan	nan	Buy	nan	nan	nan	nan
2020-03-11	nan	nan	nan	nan	nan	nan	Buy	nan	nan	Buy	Buy
2020-03-12	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy	Buy
2020-03-13	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-16	Buy	Buy	nan	Buy	Buy	Buy	nan	Buy	Buy	Buy	Buy
2020-03-17	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-18	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	Buy
2020-03-19	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-20	nan	nan	nan	nan	nan	Buy	nan	nan	nan	Buy	nan
2020-03-23	nan	nan	nan	nan	nan	Buy	nan	Buy	nan	Buy	nan
2020-03-24	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-25	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-26	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-27	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-30	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2020-03-31	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan}],

'expansion': {'Adjusted Close':

XLK	XLV	XLV	XLV	XLV	XLV	XLV
Date						
2016-01-04	36.036114	44.768230	16.104380	38.133732	69.853958	39.717808
2016-01-05	36.019245	44.888077	16.166399	38.034489	69.762985	39.972763
2016-01-06	35.074924	44.194725	15.918327	37.565372	69.081032	39.837326
2016-01-07	34.122177	42.996338	15.470407	36.455734	67.662476	39.359272
2016-01-08	33.776474	42.559784	15.229218	36.167042	66.934998	39.056519
...	...	...	...	...	...	...
2019-12-24	55.754551	75.889626	28.029100	87.496101	119.797127	55.833912
2019-12-26	56.000858	76.065933	28.184414	88.148201	121.259247	55.887165
2019-12-27	55.791042	76.000977	28.111324	88.138611	121.249619	56.135670
2019-12-30	55.617722	75.648346	28.029100	87.630356	120.470459	55.842796
2019-12-31	56.028221	75.601952	28.120457	87.908470	120.643608	55.896034

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208138	61.440029	71.763748	32.787563	56.998520
2016-01-05	42.369129	61.735363	72.527199	33.022911	57.933807
2016-01-06	40.738209	61.231544	72.214882	32.962170	57.742134
2016-01-07	39.744247	59.989380	70.731346	32.742020	56.454212
2016-01-08	39.233273	59.085964	70.176125	32.726833	55.787243
...	...	...	...	...	...
2019-12-24	49.058319	95.267296	90.223404	55.464287	81.376282
2019-12-26	49.042480	95.202545	90.923065	55.559494	81.810982
2019-12-27	48.836620	95.230301	90.750557	55.723946	82.032761
2019-12-30	48.682495	94.658585	89.887993	55.715298	82.094864
2019-12-31	48.959755	94.844810	90.022148	55.931686	82.573906

[1006 rows x 11 columns],

```

'Bollinger Signal':
XLU IYR
Date
2016-01-04 nan nan nan nan nan nan nan nan nan nan nan nan
2016-01-05 nan nan nan nan nan nan nan nan nan nan nan nan
2016-01-06 nan nan nan nan nan nan nan nan nan nan nan nan
2016-01-07 nan nan nan nan nan nan nan nan nan nan nan nan
2016-01-08 nan nan nan nan nan nan nan nan nan nan nan nan
...
2019-12-24 nan nan nan nan nan nan nan nan nan nan nan nan
2019-12-26 nan nan nan nan Sell nan nan nan Sell nan nan
2019-12-27 nan nan nan nan nan nan nan nan nan nan nan nan
2019-12-30 nan nan nan nan nan nan nan nan nan nan nan nan
2019-12-31 nan nan nan nan nan nan nan nan nan nan nan nan

[1006 rows x 11 columns]},
'recovery': {'Adjusted Close':
XLB XLI XLF
XLU XLY \
Date
2020-10-01 58.204086 72.373734 22.478216 114.247253 144.567047
2020-10-02 58.723591 73.184715 22.655355 111.350632 143.955383
2020-10-05 59.846123 74.363434 23.028284 113.791931 145.858307
2020-10-06 59.094677 73.458168 22.795204 112.028778 143.159210
2020-10-07 60.616100 75.080093 23.177456 114.082565 146.431198
...
2024-08-26 93.139999 129.139999 44.570000 221.149994 186.410004
2024-08-27 93.150002 129.220001 44.799999 222.490005 185.919998
2024-08-28 92.750000 129.160004 44.910000 219.419998 184.119995
2024-08-29 93.260002 130.070007 45.310001 217.440002 184.339996
2024-08-30 94.279999 131.460007 45.740002 220.330002 187.119995

XLP XLE XLV VOX XLU IYR
Date
2020-10-01 58.330849 24.915936 99.164734 99.959473 53.327782 73.820290
2020-10-02 58.005085 25.156254 98.259132 98.270309 53.959042 74.999535
2020-10-05 58.394196 25.911541 100.277885 99.814697 54.634754 75.416817
2020-10-06 58.014137 25.525312 98.947769 98.057961 55.097084 74.945114
2020-10-07 58.638527 25.885790 100.815605 98.868767 55.434940 75.026741
...
2024-08-26 82.419998 91.199997 155.369995 139.779999 75.910004 98.989998
2024-08-27 82.620003 90.349998 155.610001 139.360001 75.309998 99.209999
2024-08-28 82.269997 89.769997 155.789993 138.529999 75.309998 98.860001
2024-08-29 81.860001 90.940002 156.119995 138.139999 75.720001 98.529999
2024-08-30 82.510002 91.279999 157.199997 139.160004 76.290001 99.529999

[985 rows x 11 columns],
'Bollinger Signal':
XLB XLI XLF XLK XLY XLP XLE XLV VOX

```

```

XLU    IYR
Date
2020-10-01  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-02  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-05  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-06  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-07  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
...
2024-08-26  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  Sell
2024-08-27  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  Sell
2024-08-28  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2024-08-29  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan
2024-08-30  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan  nan

[985 rows x 11 columns]]}

```

### 1.3 Base Model