

bollinger bands single stock investment

September 23, 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 mathemiatcal 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]

```

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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  28.801893  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  28.439268  14375000
2008-01-07  40.810001  41.060001  39.669998  40.220001  28.048733  19606300
2008-01-08  40.400002  41.070000  39.470001  39.599998  27.616346  22922900
...
2009-06-24  25.480000  25.920000  25.180000  25.320000  18.324320  11639400
2009-06-25  25.290001  25.910000  25.000000  25.860001  18.715124  10998600
2009-06-26  25.870001  26.030001  25.670000  25.820000  18.686176  6945300
2009-06-29  26.010000  26.240000  25.700001  26.049999  18.852627  5011400
2009-06-30  26.129999  26.280001  25.639999  25.799999  18.671703  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}')
```

```
[ ]: import random

def stochastic_modeling(nested_dict, tickers, periods,num_samples):
    # Store the returns in a nested dictionary
    nested_dict_returns = {period: {ticker: [] for ticker in tickers} for
    ↪period in periods}

    # Go through each economic time period
    for period in periods:
        max_index = len(nested_dict[period]) - 30 # Ensure there's enough data
    ↪to calculate ROI
```



```

# Generate random samples from the valid range
random_dates = random.choices(range(max_index), k=num_samples)

for ticker in tickers:
    for date_idx in random_dates:
        start_price = nested_dict[period][ticker].iloc[date_idx]
        end_price = nested_dict[period][ticker].iloc[date_idx + 30]

        # Get the return by the Holding Period Return
        roi = ((end_price - start_price) / start_price) * 100

        nested_dict_returns[period][ticker].append(roi)

return nested_dict_returns # Return the nested dictionary with returns

```

```

[ ]: # 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	26.220287	6611300
2008-01-03	35.279999	35.299999	35.029999	35.150002	26.377869	2544400
2008-01-04	34.889999	35.160000	34.759998	34.790001	26.107716	3270600
2008-01-07	34.820000	35.580002	34.820000	35.480000	26.625517	5457900
2008-01-08	35.660000	36.389999	35.570000	35.770000	26.843159	6231200
...
2009-06-24	25.709999	25.809999	25.490000	25.660000	19.861145	4161500
2009-06-25	25.730000	26.520000	25.570000	26.370001	20.410694	8134500
2009-06-26	26.400000	26.480000	26.100000	26.370001	20.410694	4967700
2009-06-29	26.320000	26.559999	26.090000	26.530001	20.534536	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	19.755178	20.314256	19.196100	nan
2009-06-25	19.798018	20.417561	19.178474	nan
2009-06-26	19.823914	20.498600	19.149228	nan
2009-06-29	19.849456	20.588775	19.110137	nan
2009-06-30	19.860323	20.623086	19.097560	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    56.998505    NaN           0.0
1   2016-01-05    57.933796    NaN           0.0
2   2016-01-06    57.742119    NaN           0.0
3   2016-01-07    56.454197    NaN           0.0
4   2016-01-08    55.787243    NaN           0.0
```

```

...
998 2019-12-24 81.376297 NaN 0.0
999 2019-12-26 81.810966 NaN 0.0
1000 2019-12-27 82.032745 NaN 0.0
1001 2019-12-30 82.094872 NaN 0.0
1002 2019-12-31 82.573921 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          62.394240          0.766737
999                                0.0          62.727518          0.766737
1000                               0.0          62.897564          0.766737
1001                               0.0          62.945198          0.766737
1002                               0.0          63.312504          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          124.012646  24.012646
999          61.618405          124.345923  24.345923
1000         61.618405          124.515969  24.515969
1001         61.618405          124.563604  24.563604
1002         61.618405          124.930909  24.930909

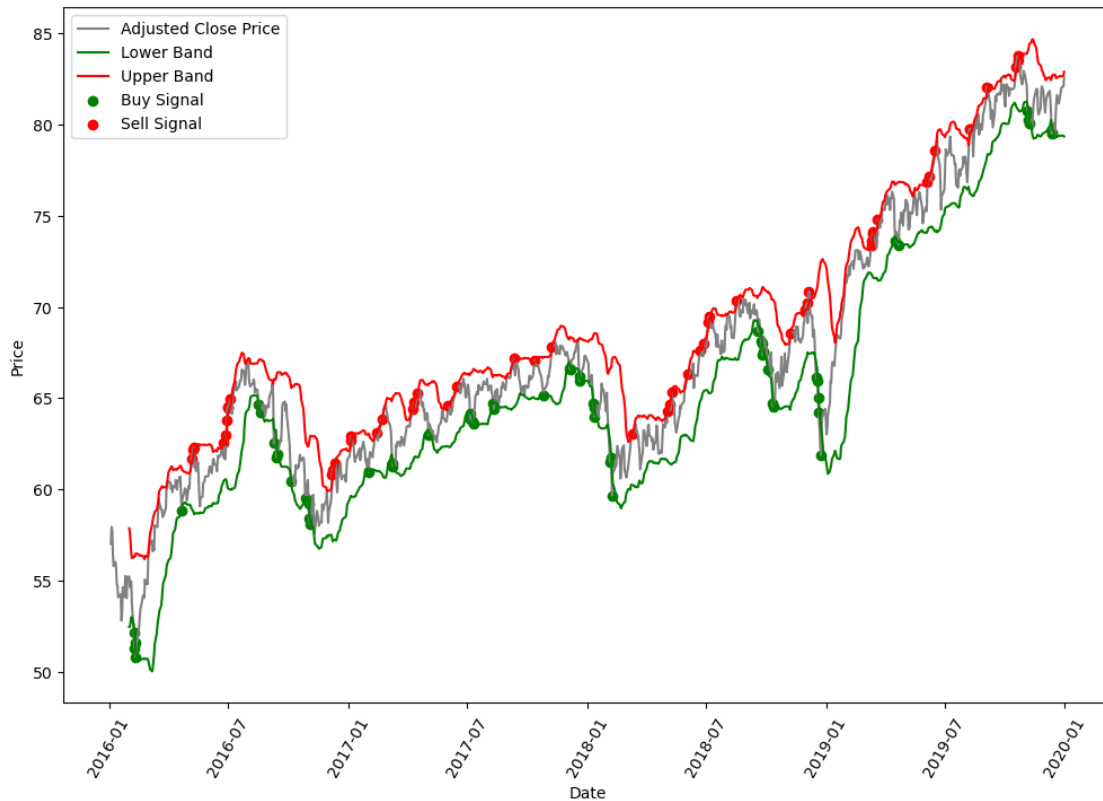
```

[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_tickers,
↳Value')
```

```
[ ]:      trough contraction  expansion  recovery
XLB -14.662567    0.308722  13.142513  21.941157
XLI -14.736337   -0.093906  14.592553  28.582315
XLF -18.725578   -0.251413  18.259491  24.9445
XLK  -2.603104    0.77132   21.292543  23.190591
XLY  -2.747631    0.161724  24.460886  15.859401
XLP   1.837217    1.338581  10.270877  17.158024
XLE  -8.199665   -1.899128   9.833241  37.431914
XLV   0.350395    1.517398   20.3305   22.442836
VOX   6.043733    0.213879  11.224041  14.276667
XLU  -6.896664    1.818534  16.547704  23.808194
IYR  -8.907485   -1.252402  24.930909  17.723979
```

```
[ ]: 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	36.036106	44.768238	16.104380	38.133728	69.853935	39.717800
2016-01-05	36.019268	44.888088	16.166399	38.034496	69.762993	39.972771
2016-01-06	35.074924	44.194721	15.918324	37.565384	69.081009	39.837318
2016-01-07	34.122169	42.996349	15.470402	36.455727	67.662491	39.359272
2016-01-08	33.776485	42.559792	15.229220	36.167034	66.935020	39.056507
...
2019-12-24	55.754547	75.889633	28.029104	87.496109	119.797127	55.833916
2019-12-26	56.000851	76.065918	28.184414	88.148201	121.259254	55.887169
2019-12-27	55.791042	76.000954	28.111326	88.138618	121.249641	56.135677
2019-12-30	55.617725	75.648346	28.029104	87.630363	120.470467	55.842781
2019-12-31	56.028225	75.601929	28.120462	87.908455	120.643600	55.896042

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208130	61.440052	71.763771	32.787571	56.998505
2016-01-05	42.369129	61.735367	72.527176	33.022896	57.933796
2016-01-06	40.738209	61.231556	72.214882	32.962173	57.742119
2016-01-07	39.744251	59.989372	70.731369	32.742016	56.454197
2016-01-08	39.233269	59.085979	70.176125	32.726841	55.787243
...
2019-12-24	49.058315	95.267303	90.223419	55.464287	81.376297
2019-12-26	49.042477	95.202553	90.923050	55.559498	81.810966
2019-12-27	48.836632	95.230301	90.750580	55.723942	82.032745
2019-12-30	48.682499	94.658569	89.887978	55.715286	82.094872
2019-12-31	48.959751	94.844803	90.022148	55.931694	82.573921

[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	XLV	XLP	\
Date							
2016-01-04	36.036106	44.768238	16.104380	38.133728	69.853935	39.717800	
2016-01-05	36.019268	44.888088	16.166399	38.034496	69.762993	39.972771	
2016-01-06	35.074924	44.194721	15.918324	37.565384	69.081009	39.837318	
2016-01-07	34.122169	42.996349	15.470402	36.455727	67.662491	39.359272	
2016-01-08	33.776485	42.559792	15.229220	36.167034	66.935020	39.056507	
...	
2019-12-24	55.754547	75.889633	28.029104	87.496109	119.797127	55.833916	
2019-12-26	56.000851	76.065918	28.184414	88.148201	121.259254	55.887169	
2019-12-27	55.791042	76.000954	28.111326	88.138618	121.249641	56.135677	
2019-12-30	55.617725	75.648346	28.029104	87.630363	120.470467	55.842781	
2019-12-31	56.028225	75.601929	28.120462	87.908455	120.643600	55.896042	
	XLE	XLV	VOX	XLU	IYR		

Date					
2016-01-04	42.208130	61.440052	71.763771	32.787571	56.998505
2016-01-05	42.369129	61.735367	72.527176	33.022896	57.933796
2016-01-06	40.738209	61.231556	72.214882	32.962173	57.742119
2016-01-07	39.744251	59.989372	70.731369	32.742016	56.454197
2016-01-08	39.233269	59.085979	70.176125	32.726841	55.787243
...
2019-12-24	49.058315	95.267303	90.223419	55.464287	81.376297
2019-12-26	49.042477	95.202553	90.923050	55.559498	81.810966
2019-12-27	48.836632	95.230301	90.750580	55.723942	82.032745
2019-12-30	48.682499	94.658569	89.887978	55.715286	82.094872
2019-12-31	48.959751	94.844803	90.022148	55.931694	82.573921

[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   36.036106   NaN                0.0
1   2016-01-05   36.019268   NaN                0.0
2   2016-01-06   35.074924   NaN                0.0
3   2016-01-07   34.122169   NaN                0.0
4   2016-01-08   33.776485   NaN                0.0
..      ...      ...      ...      ...
```

971	2019-12-24	55.754547	NaN	0.0
972	2019-12-26	56.000851	NaN	0.0
973	2019-12-27	55.791042	NaN	0.0
974	2019-12-30	55.617725	NaN	0.0
975	2019-12-31	56.028225	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	
..		
971		0.0		18.529910		0.332348	
972		0.0		18.611768		0.332348	
973		0.0		18.542039		0.332348	
974		0.0		18.484437		0.332348	
975		0.0		18.620866		0.332348	

	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
..
971	94.521647	113.051557	13.051557
972	94.521647	113.133416	13.133416
973	94.521647	113.063686	13.063686
974	94.521647	113.006085	13.006085
975	94.521647	113.142513	13.142513

[976 rows x 10 columns]

```
[ ]: 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
26.210723876953125
Sell
XLF
17.423070907592773
Sell

```

XLV
26.444028854370117
Sell
IYR
37.08415985107422
Sell
XLE
44.0315055847168
Sell
XLP
17.8033504486084
Sell
XLE
45.17206954956055
Sell
XLE
45.71231460571289
Buy
VOX
42.74323272705078
Sell
XLB
29.478364944458008
Sell
XLE
46.246578216552734
Sell
XLB
29.617834091186523
Sell
XLP
17.925077438354492
Sell
XLE
47.032981872558594
Buy
XLV
24.614343643188477
Buy
XLU
20.866392135620117
Buy
XLF
14.957542419433594
Buy
XLF
14.875361442565918
Buy

XLF
14.757949829101562
Buy
XLF
14.247235298156738
Buy
XLY
24.497135162353516
Buy
XLV
24.09654426574707
Buy
IYR
32.50901794433594
Buy
XLI
25.594240188598633
Buy
XLF
14.276589393615723
Buy
XLY
24.263818740844727
Buy
XLV
23.818885803222656
Buy
XLB
27.016590118408203
Buy
XLI
25.1845645904541
Buy
XLF
13.871541023254395
Buy
XLK
17.246307373046875
Buy
XLY
23.98224639892578
Buy
XLV
23.2635555267334
Buy
VOX
40.314579010009766
Buy

IYR
32.30278015136719
Buy
XLV
23.488685607910156
Buy
XLE
43.31116485595703
Buy
XLB
26.88408660888672
Buy
XLE
42.440738677978516
Sell
XLK
18.359859466552734
Sell
XLP
17.988718032836914
Sell
IYR
36.88877868652344
Sell
IYR
37.17963409423828
Sell
VOX
44.08867263793945
Sell
XLU
21.749008178710938
Sell
XLU
22.02840805053711
Sell
XLU
21.911060333251953
Sell
XLV
24.091337203979492
Sell
XLE
49.60659408569336
Sell
XLK
18.86677360534668
Sell

XLK
18.985591888427734
Buy
XLP
17.808372497558594
Sell
XLK
19.642993927001953
Sell
XLY
26.79303550720215
Sell
VOX
46.738128662109375
Sell
VOX
46.94511032104492
Sell
XLK
20.14198112487793
Sell
XLP
18.355831146240234
Sell
XLB
32.11679458618164
Sell
XLP
18.349395751953125
Sell
XLE
53.54983901977539
Sell
XLP
18.45244026184082
Sell
XLE
53.88093185424805
Sell
XLU
23.04545021057129
Sell
XLE
54.416770935058594
Sell
XLU
23.201919555664062
Buy

XLF
14.723109245300293
Buy
XLI
27.281721115112305
Sell
VOX
48.29054641723633
Buy
XLI
26.718612670898438
Buy
XLF
13.805872917175293
Buy
XLF
13.616510391235352
Buy
IYR
36.3619384765625
Buy
XLV
23.33000373840332
Buy
XLI
26.328779220581055
Buy
XLF
13.261449813842773
Buy
XLK
18.95391082763672
Buy
XLV
23.096336364746094
Buy
VOX
44.98562240600586
Buy
IYR
35.7527961730957
Buy
XLV
22.900348663330078
Buy
VOX
44.86832809448242
Buy

XLP
17.660247802734375
Buy
XLY
24.238353729248047
Buy
XLP
17.517038345336914
Buy
XLK
18.690265655517578
Buy
XLY
23.817949295043945
Buy
XLP
17.45235252380371
Buy
IYR
34.71562576293945
Buy
XLB
30.127506256103516
Buy
XLB
29.47394561767578
Buy
XLU
22.557621002197266
Buy
XLB
29.445837020874023
Buy
XLI
24.442975997924805
Buy
XLF
12.280471801757812
Buy
XLK
18.22161102294922
Buy
XLY
23.130733489990234
Buy
XLP
17.18067169189453
Buy

XLU
22.36621856689453
Buy
XLB
29.32636833190918
Buy
XLB
28.78523063659668
Buy
XLB
27.555400848388672
Buy
XLI
23.898998260498047
Buy
XLB
27.724056243896484
Buy
XLE
49.960933685302734
Buy
IYR
32.25193405151367
Buy
XLE
49.13401412963867
Sell
XLV
23.552480697631836
Buy
XLE
48.19839096069336
Sell
XLV
23.66607666015625
Sell
XLV
23.79482078552246
Buy
XLF
10.578997611999512
Buy
XLF
10.250641822814941
Buy
XLE
47.60684585571289
Buy

XLE
46.38151550292969
Buy
XLU
22.017183303833008
Buy
XLE
45.6209716796875
Sell
XLV
24.01443862915039
Buy
XLU
21.66815185546875
Buy
XLU
21.6906681060791
Buy
XLU
21.465492248535156
Sell
XLB
28.58846092224121
Sell
XLP
18.002174377441406
Buy
XLB
26.655855178833008
Sell
XLP
18.163902282714844
Sell
XLV
25.006519317626953
Sell
XLK
18.22956085205078
Sell
XLP
18.357952117919922
Sell
XLV
25.104976654052734
Sell
XLK
18.547286987304688
Sell

XLV
24.56175994873047
Sell
XLP
18.377361297607422
Sell
XLV
25.233713150024414
Sell
XLK
18.66642951965332
Sell
XLV
25.313642501831055
Sell
XLP
18.539072036743164
Sell
VOX
43.12273025512695
Sell
XLK
18.70614242553711
Sell
XLP
18.668455123901367
Sell
XLU
21.4992618560791
Buy
XLK
17.729141235351562
Buy
XLB
26.128787994384766
Buy
XLI
24.493751525878906
Buy
XLK
17.093685150146484
Buy
XLV
24.249204635620117
Buy
XLU
20.350841522216797
Buy

XLB
26.156896591186523
Buy
XLI
24.486492156982422
Buy
XLK
17.093685150146484
Buy
XLV
24.120473861694336
Buy
XLU
19.922992706298828
Buy
XLB
26.107702255249023
Sell
XLF
13.540162086486816
Buy
XLB
25.278438568115234
Buy
XLI
24.145610809326172
Buy
XLE
38.178443908691406
Buy
XLU
19.782255172729492
Buy
XLI
23.746675491333008
Buy
XLF
11.396899223327637
Buy
XLK
16.44234848022461
Buy
XLV
23.85540771484375
Buy
VOX
39.37622833251953
Buy

VOX
39.17613220214844
Buy
XLI
23.01412010192871
Buy
XLF
11.07451057434082
Buy
XLK
15.822773933410645
Buy
XLY
23.567325592041016
Buy
XLV
23.438886642456055
Buy
VOX
36.97513198852539
Buy
XLU
18.577531814575195
Sell
IYR
37.25215148925781
Buy
XLY
23.496219635009766
Buy
XLY
23.163572311401367
Buy
XLP
17.7014217376709
Buy
XLV
22.876066207885742
Buy
XLY
23.082441329956055
Buy
XLB
23.116416931152344
Buy
XLK
15.143781661987305
Buy

XLV
22.149404525756836
Buy
XLP
17.362762451171875
Buy
XLE
36.12153625488281
Buy
XLB
23.611265182495117
Buy
XLB
23.222455978393555
Buy
XLB
21.554113388061523
Buy
XLI
20.616601943969727
Buy
XLK
15.064074516296387
Buy
XLE
35.55231475830078
Buy
IYR
31.980106353759766
Buy
XLB
21.3420352935791
Buy
XLI
20.28842544555664
Buy
XLK
14.848875045776367
Buy
XLV
21.054101943969727
Buy
XLE
35.1284294128418
Buy
IYR
30.27328872680664
Buy

XLB
20.28872299194336
Buy
XLI
19.756053924560547
Buy
XLF
10.72862720489502
Buy
XLK
14.02791690826416
Buy
XLY
20.461837768554688
Buy
XLE
33.23908233642578
Buy
XLV
21.712099075317383
Buy
VOX
33.518428802490234
Buy
XLU
17.35043716430664
Buy
IYR
29.71747398376465
Buy
XLB
19.24247169494629
Buy
XLI
19.099716186523438
Buy
XLF
9.595491409301758
Buy
XLK
13.31058406829834
Buy
XLY
19.147472381591797
Buy
XLP
16.672420501708984
Buy

XLE
31.416358947753906
Buy
XLV
21.187170028686523
Buy
VOX
32.08329772949219
Buy
XLU
16.64051628112793
Buy
IYR
27.20779800415039
Buy
XLI
18.808006286621094
Buy
XLF
9.209742546081543
Buy
XLK
13.191020965576172
Buy
XLY
18.77425765991211
Buy
XLP
16.21653938293457
Buy
XLV
20.806798934936523
Buy
VOX
30.786178588867188
Buy
XLU
16.350873947143555
Buy
IYR
26.753015518188477
Buy
XLI
17.735965728759766
Buy
XLF
8.251398086547852
Buy

XLK
12.752653121948242
Buy
XLY
17.58159828186035
Buy
XLP
15.23963451385498
Buy
XLE
27.4014949798584
Buy
XLV
19.209196090698242
Buy
VOX
28.84047508239746
Buy
XLU
15.249068260192871
Buy
IYR
24.838483810424805
Buy
XLI
17.167144775390625
Buy
XLP
15.369885444641113
Buy
XLE
26.281221389770508
Buy
XLV
18.36475372314453
Buy
VOX
27.99871253967285
Buy
XLU
14.630023002624512
Buy
XLF
7.534147262573242
Buy
XLY
15.1719388961792
Buy

XLI
14.98659896850586
Buy
XLF
6.340738773345947
Buy
XLV
18.448440551757812
Buy
IYR
15.563353538513184
Buy
XLB
14.0536527633667
Buy
XLI
14.585505485534668
Buy
XLF
5.659653663635254
Buy
XLK
10.512970924377441
Buy
XLY
13.249074935913086
Buy
XLP
14.288786888122559
Buy
XLE
24.198102951049805
Buy
XLV
17.923507690429688
Buy
VOX
24.479904174804688
Buy
XLU
14.885594367980957
Buy
IYR
14.204642295837402
Buy
XLV
17.946334838867188
Sell

XLV
19.825420379638672
Sell
XLI
17.245573043823242
Sell
XLP
15.678484916687012
Sell
XLI
17.878849029541016
Sell
XLK
12.812870025634766
Sell
XLY
18.516361236572266
Sell
XLP
15.901808738708496
Sell
XLV
20.734567642211914
Sell
XLU
17.086584091186523
Sell
XLI
17.73893165588379
Sell
XLY
18.43460464477539
Sell
XLP
15.967491149902344
Sell
XLE
31.24455451965332
Sell
XLU
17.328125
Sell
XLI
18.12920570373535
Sell
XLK
13.069290161132812
Sell

XLV
18.74525260925293
Sell
XLE
31.585412979125977
Sell
VOX
33.122528076171875
Buy
XLF
6.698451995849609
Buy
IYR
18.54128074645996
Buy
XLF
6.398705005645752
Buy
IYR
18.109416961669922
Buy
XLF
6.105075359344482
Buy
XLF
5.921553134918213
Buy
XLF
4.942783832550049
Buy
IYR
17.228422164916992
Sell
XLV
20.72690773010254
Buy
XLP
14.338550567626953
Sell
XLK
12.796845436096191
Sell
XLV
20.979488372802734
Sell
XLK
12.828898429870605
Buy

XLP
14.174348831176758
Buy
IYR
16.35894203186035
Buy
XLI
14.219131469726562
Buy
XLF
4.875494956970215
Buy
XLY
14.93570613861084
Buy
XLP
13.957594871520996
Buy
XLE
26.62451171875
Buy
VOX
29.1290340423584
Buy
XLU
15.608551979064941
Buy
IYR
15.328232765197754
Buy
XLI
14.241226196289062
Buy
XLF
4.875494956970215
Buy
XLY
14.837606430053711
Buy
XLE
26.47234535217285
Buy
VOX
28.59514045715332
Buy
XLU
15.37275218963623
Buy

IYR
15.391568183898926
Buy
XLI
13.92458438873291
Buy
XLF
4.618566989898682
Buy
XLY
14.682280540466309
Buy
VOX
28.71615219116211
Buy
XLU
15.44175910949707
Buy
IYR
14.798478126525879
Buy
XLI
13.711033821105957
Buy
XLF
4.551278114318848
Buy
XLE
25.79669189453125
Buy
XLU
15.09094524383545
Buy
XLB
13.7667236328125
Buy
XLI
13.180864334106445
Buy
XLF
4.392227649688721
Buy
XLK
11.114106178283691
Buy
XLY
14.257185935974121
Buy

XLP
13.629180908203125
Buy
XLE
24.591463088989258
Buy
XLV
19.402769088745117
Buy
VOX
28.05414581298828
Buy
XLU
14.728628158569336
Buy
XLV
19.287973403930664
Buy
XLV
18.323570251464844
Buy
XLV
17.588788986206055
Buy
XLB
12.936713218688965
Buy
XLI
11.76705265045166
Buy
XLP
13.116853713989258
Buy
XLE
23.203630447387695
Buy
XLV
16.831045150756836
Buy
XLP
12.959218978881836
Buy
XLV
16.792776107788086
Buy
VOX
27.057538986206055
Buy

VOX
26.032474517822266
Sell
XLF
5.756387710571289
Sell
XLK
12.267980575561523
Sell
XLY
15.728689193725586
Sell
VOX
31.079505920410156
Sell
XLE
27.379308700561523
Sell
XLB
16.12531280517578
Sell
XLK
12.829147338867188
Sell
XLY
16.323017120361328
Sell
XLE
28.474477767944336
Sell
VOX
32.33949279785156
Sell
XLI
14.609048843383789
Sell
XLY
16.972322463989258
Sell
IYR
17.25750732421875
Sell
IYR
16.980775833129883
Sell
XLF
6.5679216384887695
Sell

IYR
17.946393966674805
Sell
XLF
6.845962047576904
Sell
IYR
18.17601776123047
Sell
XLV
19.053312301635742
Sell
XLB
18.06899642944336
Sell
XLB
18.47932243347168
Sell
XLK
14.077430725097656
Sell
XLE
28.914995193481445
Sell
XLU
15.42628002166748
Sell
XLB
19.56633949279785
Sell
XLI
16.891483306884766
Sell
XLK
14.33514404296875
Sell
XLY
19.668176651000977
Sell
XLP
14.819907188415527
Sell
XLE
30.071338653564453
Sell
VOX
34.59605407714844
Sell

XLU
15.658859252929688
Sell
XLB
19.451156616210938
Sell
XLE
29.667537689208984
Sell
XLV
19.114917755126953
Sell
VOX
34.8025016784668
Sell
XLU
15.629786491394043
Sell
XLI
17.21116828918457
Sell
XLF
7.71097469329834
Sell
XLE
30.817779541015625
Sell
VOX
35.058773040771484
Sell
XLV
19.384469985961914
Sell
XLI
17.478822708129883
Sell
XLF
8.044623374938965
Sell
XLP
15.037952423095703
Sell
XLE
31.717166900634766
Sell
XLV
19.707935333251953
Sell

XLU
15.844927787780762
Sell
XLP
15.143657684326172
Sell
XLB
20.156641006469727
Sell
XLK
14.617006301879883
Sell
XLP
15.57973861694336
Sell
XLE
32.78175735473633
Sell
XLB
20.358205795288086
Sell
XLP
15.738312721252441
Sell
XLE
32.69607925415039
Sell
XLV
20.14691162109375
Sell
XLU
16.385690689086914
Buy
XLV
19.130319595336914
Buy
XLB
17.91180992126465
Buy
XLF
7.042744159698486
Buy
XLE
28.74911880493164
Buy
IYR
18.2761173248291
Buy

XLE
28.921300888061523
Sell
VOX
35.73502731323242
Sell
VOX
35.85605239868164
Buy
XLB
44.260658264160156
Buy
XLI
61.03276824951172
Buy
XLF
20.8391056060791
Buy
XLK
78.78868103027344
Buy
XLY
103.33873748779297
Buy
XLE
27.67645263671875
Buy
VOX
77.8409423828125
Buy
IYR
75.13089752197266
Buy
XLE
28.98932456970215
Buy
XLE
27.456275939941406
Buy
XLU
52.6512565612793
Buy
IYR
73.4897232055664
Buy
XLB
39.644840240478516
Buy

XLI
54.17505645751953
Buy
XLF
18.609939575195312
Buy
XLK
72.25812530517578
Buy
XLY
92.67106628417969
Buy
XLP
46.30194091796875
Buy
XLE
24.0313777923584
Buy
XLV
78.94112396240234
Buy
VOX
70.62300872802734
Buy
XLU
47.33679962158203
Buy
IYR
66.33059692382812
Buy
XLB
37.756561279296875
Buy
XLI
51.780887603759766
Buy
XLK
69.58259582519531
Buy
XLY
85.9376449584961
Buy
XLP
46.83445358276367
Buy
XLV
76.09185028076172
Buy

VOX
68.0294189453125
Buy
XLU
44.24678421020508
Buy
IYR
59.84568405151367
Buy
IYR
56.49233627319336
Buy
XLP
44.73102951049805
Buy
XLU
41.39048767089844
Buy
XLP
43.40730285644531
Buy
XLV
69.81805419921875
Buy
XLU
39.278377532958984
Sell
XLP
40.57829666137695
Sell
XLU
34.80690383911133
Sell
XLU
34.95872497558594
Sell
XLU
35.39144515991211
Sell
XLB
34.63648223876953
Buy
XLY
63.79787826538086
Buy
XLV
55.941436767578125
Buy

XLV
62.56121063232422
Buy
XLV
55.17701721191406
Buy
IYR
52.13811111450195
Buy
XLV
62.461181640625
Buy
IYR
51.294822692871094
Buy
XLV
62.35203552246094
Buy
IYR
51.56315231323242
Buy
XLF
13.547800064086914
Buy
IYR
50.804176330566406
Sell
XLI
44.0406494140625
Sell
XLI
44.6740837097168
Sell
XLP
41.28738784790039
Sell
XLB
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Sell
XLF
15.022486686706543
Sell
VOX
77.46354675292969
Sell
XLF
15.187868118286133
Sell

XLE
41.63417053222656
Sell
VOX
78.5653305053711
Sell
XLF
15.291236877441406
Sell
XLE
42.264129638671875
Sell
XLE
42.670127868652344
Sell
XLE
43.67107009887695
Sell
XLU
36.31760025024414
Sell
XLU
36.48461151123047
Sell
XLU
37.228572845458984
Sell
XLI
47.45603561401367
Sell
XLU
37.43355941772461
Sell
XLI
47.86300277709961
Sell
XLI
48.146934509277344
Sell
VOX
80.68221282958984
Sell
XLP
42.716915130615234
Sell
VOX
80.9002685546875
Sell

VOX
80.88285827636719
Sell
XLP
42.94115447998047
Sell
VOX
81.75516510009766
Sell
XLV
60.47484588623047
Sell
VOX
81.66793060302734
Sell
XLV
61.294307708740234
Sell
XLE
45.08966827392578
Sell
XLB
38.74171829223633
Sell
XLF
15.871312141418457
Sell
XLB
39.1224479675293
Sell
XLY
73.26412200927734
Sell
XLB
39.960060119628906
Sell
XLI
48.61154556274414
Sell
XLF
16.168935775756836
Sell
XLE
46.443206787109375
Sell
XLB
39.841609954833984
Sell

XLF
16.29353141784668
Sell
XLE
46.85913848876953
Buy
XLU
36.65951919555664
Buy
XLP
41.459598541259766
Buy
XLU
35.89466094970703
Buy
IYR
58.826202392578125
Buy
XLK
39.38733673095703
Buy
XLP
41.611759185791016
Buy
XLU
36.21590042114258
Buy
XLK
39.39640426635742
Buy
XLK
39.20600128173828
Buy
XLK
39.024662017822266
Buy
XLK
38.53504180908203
Buy
XLK
38.199546813964844
Sell
IYR
61.68879318237305
Sell
IYR
62.185279846191406
Sell

XLV
73.5197982788086
Sell
XLP
43.293514251708984
Sell
IYR
62.301673889160156
Buy
XLV
71.31929016113281
Buy
XLV
70.95406341552734
Buy
XLV
70.5431900024414
Buy
VOX
79.31263732910156
Buy
XLV
70.47927856445312
Buy
VOX
78.62348175048828
Sell
XLK
39.39640426635742
Sell
XLB
40.36616897583008
Sell
XLF
16.466562271118164
Sell
XLK
39.66842269897461
Sell
XLK
39.795352935791016
Sell
XLF
16.480409622192383
Sell
XLK
39.98577117919922
Sell

XLV
62.05275344848633
Sell
XLK
40.06737518310547
Sell
XLV
62.200958251953125
Sell
XLV
62.42758560180664
Sell
XLV
63.22962951660156
Sell
XLB
40.738441467285156
Sell
XLE
47.94477462768555
Sell
XLI
48.861053466796875
Sell
XLE
49.03044509887695
Sell
XLI
49.17079162597656
Sell
XLE
48.91763687133789
Buy
XLF
15.684428215026855
Buy
XLF
15.705190658569336
Sell
VOX
82.06048583984375
Sell
VOX
82.2611312866211
Sell
VOX
82.9415512084961
Sell

VOX
83.57620239257812
Sell
VOX
84.86659240722656
Sell
IYR
62.51293182373047
Buy
XLB
39.13101577758789
Buy
XLI
47.04548263549805
Buy
XLF
15.364690780639648
Buy
XLK
38.52220916748047
Buy
XLY
69.79479217529297
Buy
XLV
60.665771484375
Buy
XLB
37.813045501708984
Buy
XLI
45.9381217956543
Buy
XLF
14.926299095153809
Buy
XLK
37.74774932861328
Buy
XLY
68.51195526123047
Buy
XLE
45.869102478027344
Buy
XLV
59.85176467895508
Buy

XLB
38.13616180419922
Sell
IYR
62.97479248046875
Sell
IYR
63.781028747558594
Sell
XLP
44.432167053222656
Sell
VOX
86.37639617919922
Sell
XLU
40.460243225097656
Sell
IYR
64.49337005615234
Sell
XLP
44.22269821166992
Sell
VOX
86.73631286621094
Sell
XLU
40.46793746948242
Sell
IYR
64.44641876220703
Sell
XLP
44.472450256347656
Sell
XLU
40.768672943115234
Sell
IYR
64.93955993652344
Sell
XLP
44.512733459472656
Sell
XLU
40.85348892211914
Sell

XLV
73.87232208251953
Sell
XLV
64.49951171875
Sell
XLV
74.30298614501953
Buy
XLP
43.65872573852539
Buy
XLP
43.85208511352539
Buy
XLE
46.23811340332031
Sell
XLF
16.714662551879883
Buy
VOX
86.28864288330078
Buy
XLU
39.118499755859375
Sell
XLF
16.735549926757812
Buy
VOX
85.96385955810547
Buy
XLU
39.10307693481445
Sell
XLF
16.749462127685547
Buy
XLV
64.98091888427734
Buy
VOX
83.58497619628906
Buy
XLU
38.19316101074219
Buy

IYR
64.67342376708984
Buy
VOX
83.47087097167969
Sell
XLE
50.3822135925293
Buy
IYR
64.2037582397461
Sell
XLB
41.95402908325195
Buy
XLV
64.25444030761719
Buy
XLV
63.71174621582031
Buy
XLP
43.75541305541992
Buy
XLV
63.95682907104492
Buy
XLU
37.90013885498047
Sell
XLF
17.076519012451172
Buy
XLU
37.80760192871094
Sell
XLF
17.090435028076172
Sell
XLK
43.14158248901367
Sell
XLK
43.360252380371094
Sell
XLK
43.4695930480957
Sell

XLE
50.97828674316406
Buy
XLB
40.33843994140625
Buy
XLI
49.41592788696289
Buy
XLK
42.057342529296875
Buy
XLY
71.86563110351562
Buy
XLP
42.450233459472656
Buy
XLV
62.591407775878906
Buy
VOX
81.65379333496094
Buy
XLU
37.36806869506836
Buy
IYR
62.51293182373047
Buy
XLB
40.721092224121094
Buy
XLB
39.964324951171875
Buy
XLI
49.31210708618164
Buy
XLY
71.83814239501953
Buy
XLP
42.716102600097656
Buy
VOX
81.85568237304688
Buy

IYR
61.730159759521484
Buy
XLB
39.87078094482422
Buy
XLI
49.268856048583984
Buy
XLY
71.84730529785156
Buy
XLP
42.58720397949219
Buy
XLE
47.94826889038086
Buy
IYR
61.91802215576172
Sell
XLU
39.40541076660156
Sell
XLK
43.832374572753906
Sell
XLU
39.64649200439453
Buy
XLU
36.77682876586914
Buy
IYR
60.414737701416016
Sell
XLF
16.973094940185547
Buy
XLV
61.84961700439453
Buy
XLV
61.55963897705078
Buy
XLB
39.46091842651367
Buy

XLV
61.58600616455078
Buy
XLV
61.17304992675781
Buy
XLY
71.96488189697266
Buy
XLV
60.970943450927734
Buy
VOX
80.7886962890625
Buy
VOX
80.1157455444336
Buy
IYR
59.49899673461914
Buy
XLV
59.5562858581543
Buy
XLE
48.9876594543457
Buy
XLV
59.18724822998047
Sell
XLU
38.441078186035156
Buy
XLK
43.008975982666016
Buy
XLY
71.33023071289062
Buy
XLV
58.87092590332031
Buy
VOX
79.36311340332031
Buy
IYR
59.167442321777344
Buy

XLK
42.73451232910156
Buy
XLY
70.89790344238281
Buy
XLE
48.45224380493164
Buy
VOX
77.37969207763672
Buy
IYR
58.40959930419922
Buy
XLI
49.07709503173828
Buy
XLK
42.32280731201172
Buy
XLY
70.7139663696289
Buy
XLV
58.00980758666992
Buy
VOX
77.51251983642578
Buy
IYR
58.070133209228516
Buy
XLK
42.24961471557617
Buy
XLP
41.837646484375
Sell
XLI
50.32969665527344
Sell
XLF
17.19687843322754
Sell
XLI
50.63413619995117
Sell

XLB
41.24721908569336
Sell
XLI
51.90412139892578
Sell
XLF
17.93707847595215
Buy
XLU
36.83126449584961
Sell
XLB
41.72585678100586
Sell
XLI
53.00883865356445
Sell
XLF
18.599828720092773
Buy
XLP
41.01076889038086
Buy
XLU
35.944705963134766
Sell
XLI
53.10450744628906
Sell
XLF
18.651470184326172
Buy
XLP
40.97024917602539
Buy
XLU
35.79695510864258
Sell
XLI
53.3306770324707
Sell
XLF
19.107641220092773
Buy
XLK
42.103233337402344
Buy

XLP
40.89728546142578
Buy
XLU
35.773616790771484
Sell
XLI
53.53074645996094
Sell
XLF
19.090423583984375
Sell
XLE
51.272132873535156
Sell
XLY
74.91742706298828
Sell
XLE
51.986026763916016
Sell
XLY
76.06716918945312
Sell
VOX
83.73724365234375
Sell
VOX
84.29507446289062
Sell
VOX
84.79978942871094
Sell
XLB
43.71726989746094
Sell
XLI
55.71406555175781
Sell
XLF
20.209339141845703
Sell
IYR
60.77783966064453
Sell
XLB
44.00787353515625
Sell

XLF
20.398693084716797
Sell
IYR
61.08573913574219
Sell
XLF
20.441730499267578
Sell
XLP
42.18620681762695
Sell
IYR
61.03837585449219
Sell
XLP
42.3564567565918
Sell
XLU
37.68672180175781
Sell
IYR
61.417320251464844
Sell
XLK
44.93024444580078
Sell
XLP
42.55100631713867
Sell
XLU
38.0755729675293
Sell
XLV
62.12095642089844
Sell
VOX
92.92740631103516
Sell
IYR
62.6870002746582
Sell
XLV
62.438663482666016
Sell
IYR
62.90312576293945
Sell

XLV
62.61515808105469
Buy
XLE
53.67469024658203
Sell
XLV
62.879920959472656
Buy
XLP
42.010833740234375
Buy
XLE
53.18667984008789
Sell
XLV
63.10055160522461
Sell
XLB
43.9199333190918
Sell
XLK
45.60637283325195
Buy
XLF
19.842870712280273
Sell
XLU
38.50697708129883
Sell
XLP
42.941871643066406
Sell
XLB
45.17603302001953
Sell
XLI
55.766448974609375
Sell
XLP
43.21137619018555
Sell
XLB
45.47714614868164
Sell
XLI
56.35280990600586
Sell

XLK
46.571250915527344
Sell
XLB
45.59758377075195
Sell
XLI
56.484100341796875
Sell
XLI
56.440338134765625
Buy
XLE
52.296756744384766
Buy
XLE
52.31828308105469
Sell
XLU
38.616920471191406
Buy
XLE
51.930747985839844
Buy
VOX
88.2154312133789
Buy
IYR
60.941917419433594
Buy
VOX
87.33193969726562
Buy
VOX
86.8053970336914
Buy
XLE
51.49297332763672
Buy
VOX
86.51986694335938
Sell
XLU
38.78965377807617
Sell
XLY
79.3210220336914
Sell

XLI
57.21923828125
Sell
XLF
20.7939395904541
Sell
XLU
38.89174270629883
Sell
IYR
63.07123947143555
Sell
XLI
57.24551010131836
Sell
XLF
21.036035537719727
Sell
XLY
79.86695098876953
Sell
XLI
57.551822662353516
Sell
XLF
21.200313568115234
Sell
XLY
80.28327941894531
Sell
XLP
44.19957733154297
Sell
XLV
65.00679779052734
Sell
XLP
44.47726058959961
Sell
XLK
48.20693588256836
Sell
XLY
80.59786224365234
Sell
XLP
44.877445220947266
Sell

XLU
39.331459045410156
Sell
IYR
63.855743408203125
Sell
XLU
39.49635314941406
Sell
XLU
39.90467071533203
Sell
XLU
40.5092887878418
Sell
XLU
40.28157043457031
Sell
XLU
40.6506233215332
Sell
XLB
45.82987976074219
Sell
XLF
21.822832107543945
Buy
VOX
84.77069091796875
Buy
XLE
49.9858512878418
Buy
VOX
84.33342742919922
Buy
IYR
61.422218322753906
Buy
IYR
61.27012634277344
Sell
XLY
80.97723388671875
Buy
XLI
56.75849151611328
Buy

XLF
20.451557159423828
Buy
XLF
20.408172607421875
Sell
XLU
41.03075408935547
Buy
XLF
20.451557159423828
Sell
XLY
81.39576721191406
Sell
XLY
81.6092300415039
Sell
IYR
64.40260314941406
Sell
IYR
64.75817108154297
Buy
XLB
44.28253936767578
Buy
XLI
56.283748626708984
Buy
XLF
19.87019920349121
Buy
XLK
48.30958938598633
Sell
XLP
45.343379974365234
Sell
IYR
65.29158020019531
Sell
XLP
45.548641204833984
Buy
XLV
65.04763793945312
Buy

XLE
48.95004653930664
Buy
XLV
65.24250793457031
Sell
XLY
82.0824966430664
Sell
XLI
58.32338333129883
Sell
XLK
49.628726959228516
Sell
XLY
82.42585754394531
Sell
XLP
45.56504440307617
Sell
XLB
46.30206298828125
Sell
XLI
58.604732513427734
Sell
XLK
49.88700485229492
Sell
XLY
83.07545471191406
Sell
XLP
45.74567794799805
Sell
XLB
46.293426513671875
Sell
XLI
58.6135139465332
Sell
XLY
83.4652328491211
Sell
XLV
66.55335235595703
Sell

XLK
50.03460693359375
Sell
XLY
83.9106674194336
Sell
XLV
66.69507598876953
Sell
XLK
50.16374588012695
Sell
XLV
66.87220764160156
Sell
XLK
50.54196548461914
Sell
XLV
67.02277374267578
Sell
XLK
50.652652740478516
Sell
XLV
67.20880889892578
Buy
VOX
85.02809143066406
Buy
VOX
83.33598327636719
Buy
IYR
62.972137451171875
Buy
XLB
44.84351348876953
Buy
XLI
57.3299446105957
Buy
XLF
20.009031295776367
Buy
XLY
81.79483032226562
Buy

XLI
57.409080505371094
Buy
XLF
20.08712387084961
Sell
XLP
45.6963996887207
Sell
XLU
41.560855865478516
Sell
XLP
45.74567794799805
Sell
XLU
41.67161178588867
Sell
XLP
45.92628479003906
Sell
XLU
41.90898132324219
Sell
XLK
52.036354064941406
Sell
XLP
46.213645935058594
Buy
XLE
48.0114631652832
Sell
XLU
42.24917984008789
Sell
XLP
46.38604736328125
Sell
XLU
42.24917984008789
Sell
XLP
46.369625091552734
Buy
XLE
47.44831848144531
Sell

XLU
42.3836784362793
Sell
XLP
46.50098419189453
Buy
XLE
47.24617004394531
Sell
XLU
42.59730529785156
Sell
XLB
46.36246109008789
Sell
XLY
85.29340362548828
Sell
XLP
46.87863540649414
Sell
XLV
68.12991333007812
Sell
VOX
85.49610900878906
Sell
XLU
42.8979606628418
Sell
XLB
46.47466278076172
Sell
XLK
52.75588607788086
Sell
XLY
85.59967041015625
Sell
XLP
47.01820373535156
Buy
XLE
46.99348449707031
Sell
XLV
68.57282257080078
Sell

VOX
86.12617492675781
Sell
IYR
64.60465240478516
Sell
XLV
68.3779525756836
Sell
XLB
47.147830963134766
Sell
XLF
21.076303482055664
Sell
XLF
21.119688034057617
Sell
XLB
47.553470611572266
Sell
XLF
21.232479095458984
Sell
XLF
21.267192840576172
Sell
IYR
65.65524291992188
Sell
XLI
61.03741455078125
Sell
XLV
70.92594909667969
Buy
XLP
45.891578674316406
Sell
XLV
71.66400146484375
Sell
XLV
71.55731201171875
Buy
XLP
45.69301223754883
Buy

XLU
41.84220886230469
Buy
XLP
45.37036895751953
Buy
XLU
41.50722122192383
Buy
XLU
41.44340896606445
Sell
XLF
21.80145263671875
Buy
XLU
41.251991271972656
Buy
XLU
41.05259323120117
Buy
XLY
82.29559326171875
Buy
IYR
63.858673095703125
Buy
IYR
64.16850280761719
Buy
IYR
63.69561004638672
Buy
IYR
63.62222671508789
Sell
XLB
47.715553283691406
Sell
XLB
47.66353988647461
Sell
XLB
47.90631866455078
Sell
XLB
48.00168228149414
Sell

XLV
84.5389175415039
Sell
XLB
48.26182556152344
Sell
XLV
84.94849395751953
Sell
XLE
47.949440002441406
Sell
XLV
72.09973907470703
Sell
XLP
46.17286682128906
Sell
XLE
48.37833786010742
Sell
VOX
85.75904846191406
Sell
VOX
85.19648742675781
Sell
XLF
22.010496139526367
Sell
XLF
22.045337677001953
Sell
XLF
22.11501693725586
Buy
XLB
46.97853088378906
Buy
XLB
46.48430633544922
Buy
XLI
59.90675354003906
Buy
XLK
52.52388000488281
Buy

XLV
83.21709442138672
Buy
XLV
69.69877624511719
Buy
IYR
64.71481323242188
Buy
XLB
46.371578216552734
Buy
XLV
83.64531707763672
Buy
XLE
46.48101043701172
Buy
IYR
64.40494537353516
Buy
XLE
46.34288787841797
Buy
XLV
83.46841430664062
Buy
XLE
46.16842269897461
Sell
XLP
46.2142333984375
Buy
XLE
45.72498321533203
Buy
XLI
59.55341720581055
Buy
XLF
21.435626983642578
Buy
XLV
82.55622863769531
Buy
XLE
45.0780029296875
Buy

XLI
59.31492233276367
Buy
XLY
82.14665985107422
Buy
XLV
69.36088562011719
Buy
XLP
45.0807991027832
Buy
XLP
45.09735107421875
Sell
XLB
47.750240325927734
Sell
XLK
54.487388610839844
Sell
XLV
72.2864761352539
Sell
XLB
48.06239700317383
Sell
XLV
72.2331314086914
Buy
XLF
21.113353729248047
Sell
XLE
47.229766845703125
Buy
XLF
20.799789428710938
Sell
XLE
47.31699752807617
Sell
XLV
73.06900787353516
Buy
VOX
81.53053283691406
Sell

XLV
73.3980484008789
Buy
VOX
81.1131362915039
Sell
XLB
48.322509765625
Sell
XLV
73.96711730957031
Buy
VOX
80.69573211669922
Sell
XLU
44.53013610839844
Sell
IYR
67.16087341308594
Sell
XLB
48.730037689208984
Sell
XLI
61.11690139770508
Sell
XLB
48.71269989013672
Sell
XLE
48.14571762084961
Sell
XLI
61.320068359375
Sell
XLE
48.37833786010742
Sell
XLI
61.573856353759766
Sell
XLI
61.919918060302734
Sell
XLF
22.084796905517578
Sell

XLI
62.43459701538086
Sell
XLF
22.215999603271484
Buy
XLU
43.14186096191406
Buy
XLU
43.133811950683594
Buy
XLU
42.78019332885742
Buy
XLU
42.51497268676758
Sell
XLY
84.66053771972656
Sell
XLY
85.09957885742188
Sell
XLK
55.63941955566406
Sell
XLY
85.57598876953125
Sell
XLK
55.723079681396484
Sell
XLY
85.67872619628906
Sell
XLK
55.86249923706055
Sell
IYR
67.07685089111328
Sell
XLU
44.05805206298828
Sell
XLI
64.74172973632812
Buy

XLE
49.656192779541016
Sell
XLF
23.44923973083496
Buy
XLE
49.405792236328125
Sell
XLB
51.80828094482422
Buy
IYR
65.16085052490234
Sell
XLK
58.13045883178711
Sell
XLY
86.3139419555664
Buy
XLP
44.20656204223633
Sell
XLK
58.26058578491211
Buy
XLP
43.83194351196289
Buy
XLV
72.52581024169922
Sell
XLK
58.51155090332031
Buy
XLV
72.39193725585938
Sell
XLK
58.52083969116211
Buy
VOX
79.7900619506836
Buy
VOX
78.78285217285156
Sell

XLE
51.74055099487305
Buy
VOX
77.71150207519531
Sell
XLE
51.67426300048828
Buy
VOX
77.87633514404297
Sell
XLU
44.73314666748047
Sell
IYR
67.83338928222656
Buy
XLI
62.96699142456055
Sell
XLU
45.14302062988281
Sell
XLU
45.70559310913086
Buy
XLB
50.151939392089844
Buy
XLI
62.3192253112793
Sell
XLP
45.74672317504883
Sell
XLY
87.37884521484375
Sell
XLY
88.08880615234375
Sell
XLY
88.1728744506836
Sell
XLK
59.952266693115234
Sell

XLV
88.39706420898438
Sell
XLI
64.44001770019531
Sell
XLV
89.44330596923828
Sell
XLV
73.5789794921875
Sell
XLI
65.00794219970703
Sell
XLF
23.912805557250977
Sell
XLV
89.82627868652344
Sell
XLV
73.94490051269531
Sell
VOX
83.56254577636719
Sell
XLB
51.921607971191406
Sell
XLI
66.11711883544922
Sell
XLF
24.07024574279785
Sell
XLV
90.28404235839844
Sell
XLV
74.49825286865234
Sell
VOX
83.91967010498047
Sell
XLF
24.12272071838379
Sell

XLV
74.34654998779297
Sell
XLB
52.026222229003906
Sell
XLI
65.85092163085938
Sell
XLF
24.49007225036621
Buy
XLK
58.083988189697266
Sell
XLY
91.29289245605469
Sell
XLP
47.22026443481445
Buy
IYR
66.61637115478516
Sell
XLP
47.445045471191406
Buy
IYR
66.5916976928711
Sell
XLB
52.517860412597656
Sell
XLK
60.76355743408203
Buy
XLU
44.13615798950195
Buy
XLU
43.33309555053711
Buy
XLU
42.99239730834961
Buy
IYR
66.1758804321289
Sell

XLE
53.249114990234375
Buy
XLU
42.481353759765625
Buy
IYR
65.93485260009766
Sell
XLB
52.85951232910156
Sell
XLE
53.36033248901367
Buy
XLU
42.54624557495117
Sell
XLE
53.827423095703125
Buy
XLU
42.2947883605957
Sell
XLB
53.77933883666992
Sell
XLB
54.156044006347656
Sell
XLE
55.27321243286133
Sell
XLB
54.62909698486328
Sell
XLI
68.77812194824219
Sell
XLF
24.893779754638672
Sell
XLB
55.06711196899414
Sell
XLI
69.25099182128906
Sell

XLF
24.964078903198242
Sell
XLK
61.85512924194336
Sell
XLY
95.39970397949219
Sell
XLV
76.39112091064453
Sell
XLB
55.14594650268555
Sell
XLI
69.53649139404297
Sell
XLK
62.08836364746094
Sell
XLI
69.98260498046875
Sell
XLF
25.12224006652832
Sell
XLV
77.00940704345703
Sell
XLF
25.33313751220703
Sell
XLV
76.87499237060547
Buy
VOX
82.96897888183594
Buy
IYR
64.70492553710938
Sell
XLI
70.86582946777344
Sell
XLF
25.456148147583008
Sell

XLV
97.18997192382812
Sell
XLV
77.20655059814453
Buy
IYR
64.48056030273438
Sell
XLI
71.52603912353516
Sell
XLF
25.684616088867188
Sell
XLV
98.44595336914062
Sell
XLV
77.7979507446289
Buy
IYR
63.95699691772461
Sell
XLV
78.18327331542969
Sell
XLF
25.80763816833496
Sell
XLK
63.02134323120117
Sell
XLP
48.27572250366211
Sell
XLV
78.93598937988281
Sell
XLP
48.133148193359375
Sell
XLP
48.66991424560547
Sell
XLP
49.0389518737793
Sell

VOX
85.71173095703125
Sell
XLP
48.87959289550781
Sell
XLV
82.02747344970703
Sell
VOX
86.165771484375
Buy
XLB
54.39256286621094
Buy
XLB
52.96463394165039
Buy
XLE
53.7236213684082
Buy
XLB
50.94102096557617
Buy
XLI
66.42279052734375
Buy
XLF
24.498361587524414
Buy
XLK
59.429439544677734
Buy
XLP
45.6422004699707
Buy
XLE
51.469696044921875
Buy
XLV
74.41077423095703
Buy
VOX
81.3196029663086
Buy
XLU
39.796356201171875
Buy

IYR
61.49711227416992
Buy
XLI
67.63614654541016
Buy
XLP
46.14542007446289
Buy
XLE
51.87749099731445
Buy
VOX
81.51417541503906
Buy
XLU
39.20420455932617
Buy
IYR
61.71318435668945
Buy
XLE
51.010005950927734
Buy
XLU
39.01762771606445
Buy
IYR
61.472190856933594
Buy
XLB
50.301513671875
Buy
XLI
65.14696502685547
Buy
XLF
23.865692138671875
Buy
XLK
57.85273742675781
Buy
XLY
93.88125610351562
Buy
XLP
44.9544677734375
Buy

XLE
49.46785354614258
Buy
XLV
72.53794860839844
Buy
VOX
78.91041564941406
Buy
XLU
38.5796012878418
Buy
IYR
59.660491943359375
Buy
XLE
49.4307861328125
Buy
VOX
79.06790924072266
Sell
IYR
63.05116653442383
Buy
XLP
44.47321319580078
Buy
XLP
44.346702575683594
Buy
XLP
43.79848098754883
Buy
XLB
50.247467041015625
Buy
XLI
66.12615966796875
Buy
XLF
24.393522262573242
Buy
XLK
61.80530548095703
Buy
XLY
96.0660171508789
Buy

XLP
43.43581771850586
Buy
XLV
73.16148376464844
Buy
VOX
78.74211120605469
Buy
XLB
49.262569427490234
Buy
XLI
65.15870666503906
Buy
XLF
23.652721405029297
Buy
XLK
60.158164978027344
Buy
XLY
94.17645263671875
Buy
XLP
42.89602279663086
Buy
XLV
71.64178466796875
Buy
VOX
77.3490219116211
Buy
XLK
60.43893814086914
Buy
XLY
93.90384674072266
Buy
XLY
92.53131866455078
Sell
XLE
52.20203399658203
Sell
XLE
52.74713897705078
Sell

XLE
52.73966979980469
Sell
XLE
53.32209396362305
Sell
XLE
53.8671875
Sell
XLB
52.37556076049805
Sell
XLE
54.07626724243164
Sell
XLB
52.75368881225586
Sell
XLI
68.204345703125
Sell
XLE
54.92751693725586
Buy
XLP
42.583961486816406
Buy
XLP
42.533355712890625
Buy
XLP
42.26346969604492
Sell
XLU
42.271854400634766
Buy
XLF
23.740909576416016
Sell
IYR
64.30310821533203
Sell
IYR
64.6550521850586
Sell
XLK
64.650390625
Sell

XLE
56.786800384521484
Sell
XLF
24.94029998779297
Sell
XLK
65.49266815185547
Sell
XLE
57.21243667602539
Sell
IYR
65.32537841796875
Sell
XLE
57.29457092285156
Sell
XLE
57.690303802490234
Sell
XLE
58.780494689941406
Buy
XLU
40.04012680053711
Sell
XLI
68.49996185302734
Sell
XLP
42.567100524902344
Sell
XLK
66.5314712524414
Sell
XLK
67.06494140625
Sell
XLY
101.2740249633789
Sell
IYR
66.3225326538086
Sell
XLK
67.29891204833984
Sell

XLV
101.86624908447266
Sell
XLB
53.615474700927734
Sell
XLK
67.73876190185547
Sell
XLV
102.81574249267578
Buy
XLU
39.54146957397461
Sell
XLV
103.11656188964844
Sell
XLV
76.03003692626953
Sell
XLV
103.33277893066406
Sell
XLP
42.87071990966797
Sell
XLV
76.47066497802734
Sell
XLV
103.74641418457031
Sell
XLP
43.2249641418457
Sell
XLV
76.61453247070312
Sell
VOX
79.67707824707031
Sell
XLP
43.30928421020508
Sell
VOX
80.18194580078125
Sell

VOX
80.64006805419922
Sell
XLP
43.806129455566406
Sell
VOX
81.10755920410156
Buy
XLI
65.8607177734375
Buy
XLI
65.9056625366211
Buy
XLI
65.07823944091797
Sell
IYR
67.62133026123047
Buy
XLI
64.47567749023438
Sell
XLU
42.550994873046875
Buy
XLF
23.640037536621094
Buy
XLF
23.347740173339844
Buy
XLK
64.48489379882812
Sell
IYR
68.00857543945312
Sell
IYR
69.167724609375
Sell
XLV
77.62945556640625
Sell
VOX
82.4318618774414
Sell

IYR
69.45539093017578
Sell
XLV
78.19805145263672
Sell
VOX
82.79037475585938
Sell
XLP
44.74106216430664
Sell
XLE
58.16269302368164
Sell
XLV
78.49590301513672
Sell
VOX
83.0545425415039
Sell
XLI
67.04786682128906
Sell
XLF
24.738346099853516
Sell
XLB
52.584022521972656
Sell
XLI
68.35195922851562
Sell
XLI
69.17935180664062
Sell
XLP
46.14348220825195
Sell
XLV
81.05918884277344
Sell
XLU
43.961395263671875
Sell
XLP
46.18596649169922
Sell

XLU
43.99437713623047
Buy
XLB
50.93194580078125
Buy
XLE
54.05815887451172
Sell
XLP
46.406944274902344
Buy
XLE
54.449058532714844
Sell
XLU
44.7367057800293
Sell
XLP
46.76393127441406
Sell
XLU
44.9676399230957
Sell
IYR
70.36070251464844
Sell
XLP
46.73843765258789
Sell
XLI
69.57508850097656
Sell
XLI
69.87190246582031
Sell
XLF
25.349485397338867
Sell
XLK
70.40180969238281
Sell
XLY
108.98612976074219
Sell
XLK
70.52391052246094
Sell

XLV
109.2029037475586
Sell
XLK
71.16255187988281
Sell
XLV
110.42821502685547
Sell
XLV
83.8210220336914
Sell
XLK
70.94654846191406
Buy
VOX
80.12974548339844
Buy
VOX
79.56364440917969
Sell
XLU
45.1738395690918
Sell
XLV
84.69650268554688
Sell
XLI
71.1130142211914
Sell
XLI
71.1399917602539
Sell
XLI
71.78753662109375
Sell
XLB
53.29963684082031
Sell
XLF
25.44691276550293
Buy
IYR
68.65159606933594
Sell
XLB
53.87388610839844
Sell

XLF
25.668346405029297
Sell
XLP
47.0189208984375
Sell
XLV
85.30123138427734
Sell
XLB
53.75761032104492
Sell
XLI
72.29702758789062
Sell
XLV
85.41631317138672
Sell
XLE
57.67700958251953
Sell
XLV
85.58847045898438
Buy
IYR
68.08472442626953
Sell
XLE
58.047916412353516
Buy
XLU
43.16655349731445
Buy
IYR
67.97472381591797
Buy
XLU
42.74213409423828
Buy
IYR
67.35273742675781
Buy
IYR
67.53215789794922
Buy
XLF
24.53670883178711
Buy

XLV
106.91063690185547
Buy
IYR
66.56666564941406
Buy
XLV
106.10708618164062
Buy
XLK
68.59557342529297
Buy
XLV
106.3812484741211
Buy
XLB
49.443504333496094
Buy
XLV
106.06925964355469
Buy
XLB
48.14749526977539
Buy
XLI
68.13993072509766
Buy
XLF
24.20753288269043
Buy
XLK
65.50460052490234
Buy
XLV
102.4958267211914
Buy
XLV
83.52259063720703
Buy
VOX
77.4473648071289
Buy
XLB
47.5882682800293
Buy
XLI
66.34154510498047
Buy

XLF
23.486907958984375
Buy
XLK
64.67529296875
Buy
XLY
100.69017791748047
Buy
XLP
44.586307525634766
Buy
XLE
55.103511810302734
Buy
XLV
81.26644897460938
Buy
VOX
76.38750457763672
Buy
IYR
64.67842864990234
Buy
XLB
47.72142028808594
Buy
XLI
66.78435516357422
Buy
XLF
23.51360511779785
Buy
XLP
44.83453369140625
Buy
IYR
64.5502700805664
Buy
XLF
23.406843185424805
Buy
XLE
54.793182373046875
Buy
XLV
81.94601440429688
Buy

XLE
52.14396667480469
Buy
XLI
62.62728500366211
Buy
XLF
22.45490837097168
Buy
XLE
50.085140228271484
Buy
XLV
79.09188079833984
Buy
VOX
74.75035095214844
Sell
XLU
45.96278381347656
Buy
VOX
73.69046783447266
Sell
XLP
47.53076171875
Sell
IYR
68.53180694580078
Buy
XLK
61.82931900024414
Buy
XLK
60.50056457519531
Buy
VOX
72.84822845458984
Buy
XLE
48.3745231628418
Sell
XLV
86.86604309082031
Sell
IYR
69.87321472167969
Sell

XLU
46.72841262817383
Sell
IYR
70.1978988647461
Sell
XLU
46.76169204711914
Buy
XLF
22.775188446044922
Sell
XLU
46.81163024902344
Sell
IYR
70.84725189208984
Buy
XLB
46.07920837402344
Buy
XLI
61.47957992553711
Buy
XLF
22.33926010131836
Buy
XLB
46.2034912109375
Buy
XLF
22.027875900268555
Buy
XLF
21.81435775756836
Buy
XLB
44.774330139160156
Buy
XLP
45.57065200805664
Buy
XLE
46.14162063598633
Buy
XLV
79.00125122070312
Buy

VOX
71.67264556884766
Buy
IYR
66.10066223144531
Buy
XLP
45.031402587890625
Buy
XLE
45.05167007446289
Buy
XLV
78.3126220703125
Buy
XLP
44.59486770629883
Buy
XLE
44.521820068359375
Buy
XLV
77.28875732421875
Buy
VOX
70.76129150390625
Buy
IYR
65.96315002441406
Buy
XLI
57.693016052246094
Buy
XLK
57.78652572631836
Buy
XLY
91.0475082397461
Buy
XLP
43.79884338378906
Buy
XLE
43.28804016113281
Buy
XLV
76.20145416259766
Buy

VOX
69.57467651367188
Buy
IYR
65.00055694580078
Buy
XLI
56.60367965698242
Buy
XLK
56.03083038330078
Buy
XLY
88.9842529296875
Buy
XLP
43.3444938659668
Buy
XLE
42.86785125732422
Buy
XLV
75.25485229492188
Buy
VOX
67.36278533935547
Buy
IYR
64.19267272949219
Buy
XLB
42.29587936401367
Buy
XLI
54.866920471191406
Buy
XLK
54.53541564941406
Buy
XLY
87.29492950439453
Buy
XLP
42.09201431274414
Buy
XLE
41.13357162475586
Buy

XLV
73.45266723632812
Buy
VOX
66.03375244140625
Buy
XLU
43.27302551269531
Buy
IYR
61.88072967529297
Sell
XLF
22.756057739257812
Sell
XLF
23.27527618408203
Sell
XLU
45.371212005615234
Sell
XLP
46.11723327636719
Sell
XLU
45.95869445800781
Sell
XLP
45.97037887573242
Sell
XLE
49.57573699951172
Sell
VOX
77.64378356933594
Sell
XLK
64.11366271972656
Sell
XLP
46.264076232910156
Sell
XLE
49.69033432006836
Sell
VOX
78.30829620361328
Sell

XLI
66.7787094116211
Sell
XLK
64.65313720703125
Sell
XLE
49.7667350769043
Sell
VOX
78.79244995117188
Sell
XLK
64.87081909179688
Sell
XLU
46.5294075012207
Sell
XLF
23.66021728515625
Sell
XLE
50.515445709228516
Sell
XLV
84.51152801513672
Sell
XLB
48.978885650634766
Sell
XLF
23.696025848388672
Sell
XLB
49.81873321533203
Sell
XLF
23.848207473754883
Sell
XLB
49.62217712402344
Sell
XLB
49.83658981323242
Sell
XLB
50.15823745727539
Sell

VOX
79.73225402832031
Sell
IYR
73.34586334228516
Sell
VOX
80.2164077758789
Sell
XLU
48.9800910949707
Sell
IYR
73.64669036865234
Sell
VOX
80.44424438476562
Sell
IYR
73.98186492919922
Sell
IYR
74.09358215332031
Sell
XLK
69.3057861328125
Sell
XLP
47.50762939453125
Sell
XLF
24.203889846801758
Sell
XLK
69.60016632080078
Sell
XLY
106.34364318847656
Sell
XLK
69.74258422851562
Sell
XLY
106.87693786621094
Sell
XLY
107.029296875
Sell

XLK
71.29979705810547
Sell
XLY
108.49584197998047
Sell
XLP
47.898475646972656
Sell
XLE
51.81252670288086
Sell
IYR
74.78568267822266
Buy
XLF
22.800247192382812
Buy
XLF
22.701274871826172
Sell
XLP
48.341407775878906
Sell
XLB
50.54538345336914
Sell
XLI
70.03526306152344
Sell
XLB
50.71588134765625
Sell
XLI
70.00785064697266
Sell
XLB
51.37987518310547
Sell
XLB
51.90032196044922
Sell
VOX
81.67703247070312
Sell
XLB
51.88237762451172
Sell

XLV
111.91459655761719
Sell
VOX
81.85770416259766
Sell
XLE
52.28992462158203
Buy
XLV
82.04894256591797
Sell
VOX
83.3411865234375
Buy
XLV
80.68771362304688
Sell
XLP
49.34888458251953
Buy
XLV
78.3672103881836
Buy
IYR
73.62582397460938
Buy
XLV
78.4951171875
Sell
XLE
52.82891845703125
Buy
XLV
78.54080963134766
Buy
IYR
73.40077209472656
Sell
XLP
50.121864318847656
Sell
XLU
49.639278411865234
Buy
XLB
50.617164611816406
Buy

XLE
49.88755798339844
Buy
XLB
50.356956481933594
Buy
XLE
49.01747131347656
Buy
XLE
49.471771240234375
Buy
XLB
50.12364959716797
Buy
XLB
49.24429702758789
Buy
XLB
49.199424743652344
Buy
XLB
48.81357955932617
Buy
XLB
48.36492156982422
Buy
XLI
67.76721954345703
Buy
XLF
24.005949020385742
Buy
XLK
69.60964965820312
Buy
XLY
108.37203216552734
Buy
VOX
80.8211898803711
Buy
XLY
109.46717834472656
Buy
VOX
81.00186920166016
Sell

XLP
50.321617126464844
Sell
XLU
50.23112487792969
Buy
XLE
47.26960754394531
Sell
XLU
50.66232681274414
Buy
XLE
47.44669723510742
Buy
XLE
46.95390701293945
Buy
XLP
48.78435134887695
Buy
XLE
46.65360641479492
Buy
XLE
46.06071853637695
Buy
XLF
23.403093338012695
Buy
XLP
48.297996520996094
Buy
XLE
45.25223159790039
Buy
VOX
79.47084045410156
Buy
XLK
67.0649185180664
Buy
VOX
77.39775848388672
Sell
XLB
50.19542694091797
Sell

XLB
50.563323974609375
Sell
IYR
76.81977081298828
Sell
XLB
51.164527893066406
Sell
XLU
51.161170959472656
Sell
XLB
51.62215805053711
Sell
XLV
83.14527130126953
Sell
IYR
77.166015625
Sell
XLB
51.71188735961914
Sell
XLV
83.3919448852539
Sell
IYR
78.5616226196289
Sell
XLI
71.17845153808594
Sell
XLE
49.03287887573242
Sell
XLE
49.38719177246094
Sell
XLB
53.21268844604492
Sell
XLF
25.258703231811523
Sell
XLF
25.19540023803711
Sell

XLB
53.4293327331543
Sell
XLF
25.394351959228516
Sell
XLP
52.210384368896484
Sell
XLF
25.466707229614258
Sell
XLY
118.56912994384766
Sell
XLY
118.95134735107422
Sell
XLI
72.16766357421875
Sell
XLB
53.67304229736328
Sell
XLF
25.946012496948242
Sell
VOX
87.22039794921875
Buy
XLY
115.35832977294922
Buy
XLF
24.969308853149414
Buy
XLY
113.79118347167969
Buy
XLE
47.6156005859375
Buy
XLY
112.8547134399414
Buy
XLE
46.93182373046875
Buy

XLB
50.77546691894531
Buy
XLI
67.71288299560547
Buy
XLF
24.12826156616211
Buy
XLK
72.18061828613281
Buy
XLY
109.82550048828125
Buy
XLP
50.486366271972656
Buy
XLE
45.53318786621094
Buy
XLV
81.57329559326172
Buy
VOX
81.59880828857422
Buy
XLB
50.838653564453125
Buy
XLK
73.3812484741211
Buy
XLY
111.49776458740234
Buy
XLP
50.941436767578125
Buy
XLE
45.478790283203125
Buy
XLF
24.19156265258789
Buy
XLE
45.13690185546875
Sell

IYR
79.7740249633789
Sell
IYR
79.7652816772461
Buy
XLB
50.2067756652832
Buy
XLF
23.49519920349121
Buy
XLE
44.00246810913086
Buy
XLV
81.78431701660156
Buy
VOX
80.7793960571289
Sell
XLU
52.3110466003418
Sell
XLU
52.6434211730957
Sell
XLU
52.907623291015625
Sell
XLU
54.27974319458008
Sell
XLU
54.33087158203125
Sell
IYR
82.06798553466797
Sell
XLI
70.7623519897461
Sell
XLF
24.824607849121094
Sell
XLK
77.72636413574219
Sell

XLY
117.12617492675781
Sell
VOX
84.63826751708984
Sell
XLI
70.9093246459961
Sell
XLY
117.41285705566406
Sell
XLF
25.19540023803711
Sell
XLE
46.784183502197266
Sell
XLI
71.77273559570312
Sell
XLF
25.285831451416016
Sell
XLE
47.33586502075195
Sell
XLB
52.400272369384766
Sell
XLI
72.44322967529297
Sell
XLF
25.430532455444336
Sell
XLE
47.38249588012695
Sell
XLB
52.80647659301758
Sell
XLB
53.384193420410156
Sell
XLE
49.05308151245117
Sell

XLU
55.506832122802734
Sell
XLU
55.76448059082031
Buy
VOX
82.0639419555664
Buy
XLB
50.63156509399414
Buy
XLI
68.64424133300781
Buy
XLF
24.40578842163086
Buy
XLK
74.82379150390625
Buy
XLY
112.69217681884766
Buy
XLE
44.23239517211914
Buy
XLV
81.02766418457031
Buy
VOX
81.00341033935547
Buy
XLB
50.81301498413086
Buy
XLI
69.09671020507812
Buy
XLF
24.505773544311523
Buy
XLB
50.014671325683594
Buy
XLF
24.342161178588867
Sell

XLK
78.781005859375
Sell
IYR
83.16313934326172
Sell
IYR
83.76925659179688
Sell
IYR
83.49694061279297
Sell
XLK
80.26256561279297
Sell
XLV
86.905517578125
Sell
XLV
87.393798828125
Sell
XLI
74.93248748779297
Sell
XLE
47.99618911743164
Sell
XLE
48.05892562866211
Buy
XLU
53.78056335449219
Buy
IYR
80.76496887207031
Buy
XLU
53.25666427612305
Buy
IYR
80.22911071777344
Buy
XLU
53.03336715698242
Buy
IYR
80.07975769042969
Buy

XLU
52.70701217651367
Sell
XLV
89.78913879394531
Sell
XLP
54.27108383178711
Buy
XLY
115.48216247558594
Buy
XLY
115.21368408203125
Buy
XLY
114.56175994873047
Sell
XLV
91.58567810058594
Sell
XLY
118.16668701171875
Buy
XLI
74.50774383544922
Buy
XLI
73.6951675415039
Buy
XLE
45.48699951171875
Buy
XLI
73.98140716552734
Sell
XLF
27.596269607543945
Sell
XLB
55.25836181640625
Sell
XLF
28.01439094543457
Sell
XLK
84.97489929199219
Sell

XLE
47.651180267333984
Buy
IYR
79.5087661743164
Sell
XLK
85.53884887695312
Buy
IYR
79.58782196044922
Sell
XLK
86.30354309082031
Sell
XLE
47.925621032714844
Sell
XLV
93.9441909790039
Sell
VOX
88.59414672851562
Sell
XLU
55.103172302246094
Sell
XLU
55.28352355957031
Sell
VOX
89.10209655761719
Sell
XLU
55.506832122802734
Sell
VOX
90.09883880615234
Sell
XLU
55.52401351928711
Sell
XLP
56.00253677368164
Sell
XLV
95.00826263427734
Sell

VOX
90.48218536376953
Sell
XLU
55.90571212768555
Sell
XLE
49.08208084106445
Sell
XLV
95.38754272460938
Sell
VOX
90.30968475341797
Sell
XLY
121.2592544555664
Sell
VOX
90.92304992675781
Buy
XLB
57.4619140625
Buy
XLI
70.60094451904297
Buy
XLF
22.012054443359375
Buy
XLK
108.02774047851562
Buy
XLY
141.0135498046875
Buy
XLP
56.557220458984375
Buy
XLE
23.78299903869629
Buy
XLV
96.72146606445312
Buy
IYR
69.72926330566406
Buy

XLF
22.17987060546875
Buy
XLP
56.53912353515625
Buy
XLV
95.92906188964844
Buy
XLK
107.39803314208984
Buy
XLY
138.80963134765625
Buy
XLP
56.34003829956055
Buy
XLV
95.9007568359375
Sell
VOX
104.93042755126953
Sell
VOX
107.06359100341797
Sell
VOX
107.47863006591797
Sell
XLB
64.50318145751953
Sell
XLF
25.18194580078125
Sell
XLE
28.374813079833984
Sell
XLB
65.26390838623047
Sell
XLI
80.70967864990234
Sell
XLF
25.312461853027344
Sell

XLE
29.29317283630371
Sell
XLU
58.91129684448242
Sell
IYR
76.40554809570312
Sell
XLF
25.209915161132812
Sell
XLE
28.992774963378906
Sell
XLU
59.13356018066406
Sell
IYR
76.89539337158203
Sell
IYR
77.95671081542969
Sell
XLP
61.66999435424805
Sell
XLE
30.992563247680664
Sell
IYR
78.5916976928711
Sell
XLE
31.310134887695312
Sell
XLE
34.59735870361328
Sell
VOX
114.26421356201172
Sell
XLK
122.10399627685547
Sell
XLY
156.09161376953125
Sell

XLF
27.632192611694336
Sell
XLV
107.45464324951172
Buy
XLI
81.82002258300781
Sell
XLB
68.3497085571289
Sell
XLV
107.76721954345703
Sell
XLB
71.146728515625
Sell
XLF
28.5882568359375
Sell
XLY
157.82054138183594
Sell
XLV
109.24491882324219
Sell
XLB
71.67816162109375
Sell
XLI
85.05834197998047
Sell
XLF
29.000682830810547
Sell
XLY
160.86509704589844
Sell
XLV
110.66575622558594
Sell
VOX
116.74928283691406
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
36.59086227416992
Sell
XLV
111.71721649169922
Sell
XLI
85.66435241699219
Sell
XLF
29.375608444213867
Sell
XLY
163.5789794921875
Sell
XLE
37.869407653808594
Sell
XLE
38.686981201171875
Buy
XLP
59.88682556152344
Buy
XLP
59.622196197509766
Sell
XLK
127.82608795166016
Sell
VOX
119.11849212646484
Sell

IYR
78.6277847290039
Sell
XLK
129.47686767578125
Sell
VOX
119.3505859375
Sell
VOX
119.46661376953125
Sell
XLK
130.0594940185547
Sell
VOX
120.22090148925781
Sell
XLU
57.47247314453125
Sell
VOX
121.13958740234375
Buy
XLI
80.83525848388672
Buy
XLI
80.26709747314453
Buy
XLP
58.481590270996094
Buy
XLP
58.53633499145508
Sell
VOX
124.76592254638672
Buy
XLU
53.98467254638672
Sell
XLE
43.74030303955078
Buy
XLU
53.796390533447266
Buy

XLV
156.09884643554688
Buy
XLV
107.59672546386719
Buy
XLU
53.312225341796875
Buy
XLP
57.76072692871094
Buy
XLV
106.66841888427734
Buy
XLU
52.325958251953125
Buy
XLK
125.67044830322266
Buy
XLV
154.8538360595703
Buy
XLV
106.38424682617188
Buy
IYR
78.66432189941406
Buy
XLK
122.89330291748047
Buy
XLV
151.5758056640625
Buy
XLV
104.95391845703125
Buy
IYR
77.88775634765625
Sell
XLE
46.053855895996094
Sell
XLI
89.40452575683594
Buy

XLK
122.18445587158203
Sell
XLB
72.77830505371094
Sell
XLI
90.35140228271484
Sell
XLB
73.1698989868164
Sell
XLB
73.36569213867188
Sell
XLI
91.62968444824219
Sell
XLI
92.39666748046875
Sell
IYR
84.1644515991211
Sell
XLP
62.91705322265625
Sell
XLV
111.23042297363281
Sell
XLP
63.550071716308594
Sell
XLV
111.75325012207031
Sell
XLK
131.8325653076172
Sell
XLK
134.55718994140625
Sell
XLY
168.8074493408203
Sell
XLK
133.98306274414062
Sell

XLV
169.5381317138672
Sell
XLK
134.69342041015625
Sell
XLK
136.6395721435547
Sell
XLK
137.95323181152344
Sell
XLV
171.44764709472656
Sell
XLV
174.3704071044922
Sell
XLV
114.61431884765625
Sell
XLB
77.39252471923828
Sell
XLV
115.46981048583984
Sell
XLV
115.49832153320312
Buy
XLE
41.37404251098633
Sell
XLV
117.31380462646484
Sell
XLI
97.4585189819336
Sell
XLF
34.43914031982422
Sell
XLE
44.53840255737305
Sell
VOX
135.69032287597656
Sell

XLI
97.80994415283203
Sell
XLE
44.60872268676758
Sell
XLI
98.23734283447266
Sell
XLF
34.58034896850586
Buy
XLK
133.1267547607422
Sell
XLB
80.7818374633789
Sell
XLF
34.862789154052734
Buy
XLK
132.8056640625
Sell
XLE
46.076629638671875
Sell
XLB
81.46532440185547
Sell
XLI
99.01618194580078
Sell
XLF
35.380611419677734
Sell
XLP
64.80694580078125
Sell
XLE
46.3139533996582
Sell
XLB
82.27051544189453
Sell
XLI
100.06095123291016
Sell

XLF
35.56889343261719
Sell
XLE
47.14020919799805
Sell
XLI
100.15592956542969
Buy
XLK
131.87149047851562
Buy
XLY
169.96681213378906
Sell
XLP
65.30237579345703
Buy
XLY
168.04754638671875
Buy
XLK
127.77481079101562
Buy
XLY
162.35794067382812
Buy
VOX
127.70000457763672
Buy
XLU
58.12744140625
Buy
IYR
87.3157958984375
Buy
XLY
163.507568359375
Buy
XLV
115.55535125732422
Sell
IYR
93.43983459472656
Sell
XLE
48.54659652709961
Buy

XLV
115.32721710205078
Sell
IYR
94.55997467041016
Sell
XLE
48.678443908691406
Sell
IYR
94.37635040283203
Sell
XLE
49.00366973876953
Sell
XLV
119.23387145996094
Buy
XLB
79.63958740234375
Sell
XLK
139.54908752441406
Buy
XLB
79.4710464477539
Buy
XLB
78.5909423828125
Buy
XLP
64.02713775634766
Buy
XLB
76.84011840820312
Buy
XLI
95.8533706665039
Buy
XLF
33.987220764160156
Buy
XLB
75.5948715209961
Buy
XLI
94.609130859375
Buy

XLF
33.16813659667969
Buy
XLP
63.118892669677734
Buy
XLU
57.901615142822266
Sell
XLY
170.6091766357422
Sell
XLY
171.9263916015625
Buy
XLU
57.67768096923828
Sell
XLY
172.51181030273438
Sell
VOX
139.17933654785156
Sell
XLY
173.60458374023438
Sell
VOX
139.5576629638672
Sell
XLY
173.64358520507812
Sell
VOX
140.566650390625
Sell
XLK
146.09275817871094
Sell
XLY
176.7365264892578
Sell
XLV
122.41873168945312
Buy
XLE
46.2189826965332
Sell

XLV
123.07715606689453
Sell
IYR
97.2594223022461
Sell
IYR
97.96996307373047
Sell
XLP
65.2279052734375
Buy
XLE
45.11788558959961
Sell
XLP
65.49568176269531
Buy
XLE
44.487430572509766
Sell
XLU
59.72589111328125
Buy
XLE
43.226505279541016
Sell
XLU
60.32671356201172
Buy
XLB
74.61597442626953
Buy
XLI
95.07028198242188
Buy
XLF
33.18609619140625
Buy
XLE
41.69919967651367
Buy
VOX
135.2404327392578
Buy
XLE
42.25861740112305
Sell

XLP
65.9296646118164
Sell
XLV
125.46275329589844
Sell
VOX
143.39952087402344
Sell
XLU
60.863792419433594
Sell
XLV
128.02964782714844
Sell
XLF
35.7854118347168
Sell
XLF
35.87993621826172
Sell
XLF
36.258018493652344
Sell
XLB
81.34880828857422
Sell
XLI
100.54888153076172
Sell
XLF
36.67390441894531
Sell
XLF
36.74007034301758
Sell
XLP
66.95463562011719
Sell
XLP
67.34246063232422
Buy
XLY
172.14102172851562
Sell
XLP
67.37939453125
Buy

XLE
42.63156509399414
Sell
XLV
130.54879760742188
Buy
XLY
172.75570678710938
Buy
XLE
41.74359130859375
Buy
XLY
171.65318298339844
Buy
XLE
40.660274505615234
Buy
XLE
40.74906539916992
Sell
XLK
153.784423828125
Sell
XLK
153.6089324951172
Sell
VOX
142.75921630859375
Sell
VOX
143.8457794189453
Sell
XLK
155.68539428710938
Sell
VOX
144.8935546875
Sell
IYR
99.91698455810547
Sell
VOX
145.41746520996094
Sell
IYR
100.38761138916016
Sell

VOX
146.1644744873047
Sell
IYR
102.19621276855469
Sell
IYR
102.64837646484375
Sell
IYR
102.6760482788086
Buy
XLV
127.09449768066406
Buy
XLV
126.31201171875
Buy
XLI
96.23271179199219
Buy
XLV
126.29293823242188
Sell
XLE
44.6295051574707
Buy
XLU
61.391788482666016
Buy
XLB
76.47785949707031
Buy
XLI
95.59432983398438
Buy
XLU
60.445045471191406
Buy
XLB
75.0082778930664
Buy
XLI
94.49794006347656
Buy
XLF
34.6967658996582
Buy

XLK
148.81069946289062
Buy
XLP
65.23491668701172
Buy
VOX
139.159912109375
Buy
XLU
60.33406066894531
Buy
XLB
74.82884979248047
Buy
XLI
94.0008773803711
Buy
XLF
34.64929962158203
Buy
XLK
148.8692626953125
Buy
XLP
65.16056823730469
Buy
VOX
138.95619201660156
Buy
XLU
60.16896057128906
Sell
XLE
45.405391693115234
Sell
XLE
45.746925354003906
Sell
XLE
47.37368392944336
Buy
XLK
147.06263732910156
Buy
XLP
64.54735565185547
Sell

XLE
47.535465240478516
Buy
XLV
122.4478988647461
Buy
VOX
137.6173553466797
Buy
XLU
58.29785919189453
Buy
XLK
146.8770751953125
Sell
XLE
47.535465240478516
Buy
XLK
145.8223876953125
Buy
XLY
175.34954833984375
Buy
XLP
63.96199035644531
Buy
XLK
144.59188842773438
Buy
XLV
120.07305908203125
Sell
XLB
79.23941802978516
Sell
XLI
97.4133529663086
Sell
XLB
79.47554016113281
Sell
XLI
98.3501205444336
Sell
XLY
184.69107055664062
Sell

XLB
79.41886901855469
Sell
XLI
98.41702270507812
Sell
XLY
186.94830322265625
Sell
XLB
79.83442687988281
Sell
XLI
99.00011444091797
Sell
XLF
37.88639831542969
Sell
XLY
186.420654296875
Sell
XLB
80.47665405273438
Sell
XLI
99.62144470214844
Sell
XLF
38.19017028808594
Sell
XLU
61.37051773071289
Sell
IYR
101.0955581665039
Sell
XLY
189.01988220214844
Sell
XLU
61.37051773071289
Sell
IYR
101.25284576416016
Sell
XLF
38.56039810180664
Sell

XLV
126.08677673339844
Sell
XLU
61.682350158691406
Sell
XLY
193.01641845703125
Sell
XLP
67.3719253540039
Sell
XLP
67.4369888305664
Sell
XLP
67.82720947265625
Sell
XLB
83.98056030273438
Sell
XLB
84.36780548095703
Buy
XLF
37.639583587646484
Buy
XLF
37.44972229003906
Buy
XLF
37.041526794433594
Buy
XLE
49.135250091552734
Buy
VOX
134.90370178222656
Buy
IYR
100.98452758789062
Buy
VOX
134.3687744140625
Sell
IYR
103.02937316894531
Buy

XLI
98.656005859375
Buy
XLF
36.804203033447266
Buy
VOX
132.24844360351562
Buy
IYR
100.17953491210938
Buy
XLI
98.82805633544922
Buy
XLF
36.91810989379883
Buy
XLB
79.94776916503906
Buy
XLI
96.32366180419922
Buy
XLF
36.0352783203125
Buy
XLP
65.30924987792969
Buy
XLE
49.0633544921875
Buy
XLV
124.22903442382812
Buy
VOX
129.08738708496094
Buy
XLU
60.32489013671875
Buy
IYR
99.18023681640625
Buy
XLB
79.13554382324219
Buy

XLI
94.98542785644531
Buy
XLF
35.63656997680664
Buy
XLP
64.99332427978516
Buy
XLE
48.54206466674805
Buy
XLV
124.00877380371094
Buy
VOX
125.81938171386719
Buy
IYR
97.65353393554688
Sell
XLU
62.764678955078125
Sell
XLK
168.47894287109375
Sell
XLU
63.23244857788086
Sell
XLK
169.2504119873047
Sell
XLK
170.78366088867188
Sell
XLP
69.83414459228516
Sell
XLV
130.08953857421875
Sell
XLU
64.2046890258789
Sell
XLP
69.8805923461914
Sell

XLP
70.58675384521484
Sell
XLV
132.21539306640625
Sell
XLU
64.8650894165039
Sell
XLP
71.08849334716797
Sell
XLV
133.0006103515625
Sell
XLU
65.19527435302734
Buy
XLY
187.74693298339844
Sell
XLK
172.83856201171875
Sell
XLF
38.697444915771484
Sell
XLE
53.89556884765625
Sell
XLE
53.88646697998047
Sell
XLF
38.811912536621094
Sell
XLE
55.08819580078125
Sell
XLF
39.26975631713867
Sell
XLE
55.84382629394531
Sell
XLE
57.564476013183594
Buy

XLU
63.3874397277832
Buy
XLK
156.07815551757812
Buy
XLY
185.2710418701172
Buy
IYR
99.98063659667969
Buy
XLB
81.76729583740234
Buy
XLI
98.00151062011719
Buy
XLK
154.0626220703125
Buy
XLY
181.89480590820312
Buy
VOX
125.55397033691406
Buy
IYR
98.7373046875
Buy
XLB
79.77388000488281
Buy
XLI
97.09961700439453
Buy
XLK
151.0001220703125
Buy
XLY
176.56137084960938
Buy
VOX
121.14242553710938
Buy
XLB
79.82134246826172
Buy

XLI
97.65611267089844
Buy
VOX
121.9622573852539
Buy
XLB
79.09992218017578
Buy
XLI
96.6966323852539
Buy
XLP
70.04157257080078
Buy
VOX
119.54175567626953
Buy
XLU
62.03778076171875
Buy
XLB
78.27409362792969
Buy
XLI
95.852294921875
Buy
XLP
69.50833892822266
Buy
VOX
117.6580581665039
Buy
XLU
61.52933883666992
Buy
XLI
94.99835205078125
Sell
XLE
62.15288543701172
Buy
XLI
93.4439926147461
Buy
XLI
91.72650909423828
Buy

XLK
144.0729217529297
Buy
XLY
165.29754638671875
Buy
VOX
111.75318908691406
Buy
IYR
92.74501037597656
Buy
XLP
68.79734802246094
Sell
XLE
64.25590515136719
Buy
XLF
35.38760757446289
Sell
XLE
64.90229034423828
Sell
XLE
66.38623046875
Sell
XLE
66.56832122802734
Sell
XLE
68.4892578125
Sell
XLU
65.53208923339844
Buy
XLB
76.10982513427734
Buy
XLF
34.21437454223633
Buy
XLK
141.15721130371094
Buy
XLY
159.69989013671875
Sell

XLE
69.49980926513672
Buy
VOX
108.7861328125
Sell
XLU
66.38255310058594
Buy
XLB
75.72064208984375
Buy
XLF
34.01407241821289
Buy
XLP
67.80570983886719
Sell
XLE
70.59228515625
Buy
VOX
108.77635955810547
Buy
XLP
68.26411437988281
Buy
XLP
67.61859893798828
Buy
XLP
66.83277893066406
Sell
XLV
128.8399200439453
Sell
XLB
81.23571014404297
Sell
XLI
98.29896545410156
Sell
XLV
130.87783813476562
Sell
IYR
98.74663543701172
Sell

XLB
81.72930908203125
Sell
XLI
98.67316436767578
Sell
XLV
131.68533325195312
Sell
XLB
82.4086685180664
Sell
XLB
82.85649871826172
Sell
XLB
84.13326263427734
Sell
XLB
85.0765380859375
Sell
IYR
100.50959014892578
Sell
XLU
68.79896545410156
Sell
IYR
103.37272644042969
Sell
XLU
69.36663055419922
Sell
IYR
102.66866302490234
Sell
XLU
69.29219818115234
Sell
XLU
70.26000213623047
Sell
XLU
71.55352783203125
Sell
XLV
137.72744750976562
Sell

XLE
74.46600341796875
Sell
XLB
86.2770767211914
Buy
VOX
110.01597595214844
Buy
VOX
107.2013168334961
Buy
XLB
81.69405364990234
Buy
XLV
128.89471435546875
Buy
VOX
104.37689208984375
Buy
XLB
81.46538543701172
Buy
XLE
67.71976470947266
Buy
XLB
80.20767211914062
Buy
XLI
92.68629455566406
Buy
XLF
33.82158279418945
Buy
XLY
164.78700256347656
Buy
XLV
127.47721862792969
Buy
VOX
102.13885498046875
Buy
XLU
67.93350982666016
Buy

XLF
33.79286193847656
Buy
XLY
164.80661010742188
Buy
XLV
127.19757843017578
Buy
VOX
99.97899627685547
Buy
XLU
67.60780334472656
Buy
XLI
91.5888442993164
Buy
XLF
33.04594802856445
Buy
XLY
159.64138793945312
Buy
XLV
125.63545227050781
Buy
XLU
66.31427764892578
Buy
IYR
97.39302062988281
Buy
XLF
33.05552291870117
Buy
XLU
65.63495635986328
Buy
IYR
94.98988342285156
Buy
IYR
96.41675567626953
Buy
IYR
93.71321868896484
Buy

XLB
77.99715423583984
Buy
XLI
89.73088073730469
Buy
XLK
132.45872497558594
Buy
XLY
148.3994598388672
Buy
IYR
89.74237823486328
Buy
XLB
77.51121520996094
Buy
IYR
88.00574493408203
Buy
XLK
130.23358154296875
Buy
XLY
142.6559600830078
Buy
XLK
128.8906707763672
Buy
XLP
67.50243377685547
Buy
XLP
66.29955291748047
Buy
XLP
66.44049835205078
Sell
XLU
68.91065979003906
Sell
XLU
68.86410522460938
Sell
XLU
69.05953979492188
Sell

XLE
81.36849975585938
Sell
XLV
129.23219299316406
Sell
XLU
70.1390380859375
Buy
XLV
121.00691986083984
Buy
IYR
87.11387634277344
Buy
XLB
74.77665710449219
Buy
XLI
84.82124328613281
Buy
XLF
30.22109603881836
Buy
XLK
122.80342102050781
Buy
XLV
117.34268188476562
Buy
VOX
90.9388656616211
Buy
XLU
63.33637619018555
Buy
IYR
82.81800842285156
Buy
XLB
74.2049560546875
Buy
XLF
29.962554931640625
Buy
XLV
116.22411346435547
Buy

VOX
90.62611389160156
Buy
XLU
61.735740661621094
Buy
IYR
82.16797637939453
Buy
XLU
62.13589859008789
Buy
XLB
71.50850677490234
Buy
XLI
82.57821655273438
Buy
XLE
71.45133972167969
Buy
XLV
115.67448425292969
Buy
VOX
89.31651306152344
Buy
XLU
60.9354362487793
Buy
XLB
71.38462829589844
Buy
XLE
67.54513549804688
Buy
XLU
60.367774963378906
Buy
XLE
68.20037078857422
Buy
XLE
65.67237091064453
Buy
XLB
68.05070495605469
Sell

XLI
86.44095611572266
Sell
XLF
31.393014907836914
Sell
XLK
132.77345275878906
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Sell
XLI
87.10810089111328
Sell
XLK
134.8471221923828
Sell
XLY
149.48922729492188
Sell
VOX
98.06852722167969
Sell
XLI
87.7365951538086
Sell
XLF
31.71068572998047
Sell
XLK
136.74388122558594
Sell
XLY
152.90792846679688
Sell
XLY
152.02378845214844
Sell
IYR
89.82706451416016
Sell
XLP
69.95974731445312
Sell
IYR
90.76913452148438
Sell

XLB
73.97023010253906
Sell
XLI
90.60828399658203
Sell
XLK
139.5939178466797
Sell
XLP
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Sell
XLV
128.63511657714844
Sell
XLU
68.7773208618164
Sell
IYR
93.7837905883789
Sell
XLB
74.95844268798828
Sell
XLI
92.47441101074219
Sell
XLF
32.451961517333984
Sell
XLK
141.7363739013672
Sell
XLY
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Sell
XLP
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Sell
XLE
72.88461303710938
Sell
XLU
69.36829376220703
Sell
IYR
94.33019256591797
Sell

XLI
92.57109832763672
Sell
XLY
160.7571563720703
Sell
XLP
71.40835571289062
Sell
XLU
69.44334411621094
Sell
XLF
33.70344161987305
Sell
XLB
77.8270492553711
Sell
XLF
34.23291778564453
Sell
VOX
101.52516174316406
Sell
XLB
77.77909088134766
Sell
XLF
34.223289489746094
Sell
XLV
130.03919982910156
Sell
VOX
101.96581268310547
Sell
XLF
34.47358322143555
Sell
XLP
73.01793670654297
Sell
XLE
76.36991882324219
Buy
XLV
125.25559997558594
Sell

XLE
77.30863189697266
Buy
XLV
125.4105224609375
Buy
XLK
137.4711151123047
Buy
XLV
123.26080322265625
Buy
XLK
135.65298461914062
Buy
XLV
122.39897155761719
Buy
XLK
134.23779296875
Buy
XLY
154.2930908203125
Buy
XLV
121.5855484008789
Buy
IYR
89.1581802368164
Buy
XLI
89.85411071777344
Buy
XLK
132.93069458007812
Buy
XLY
152.77040100097656
Buy
XLV
120.81087493896484
Buy
XLB
71.3990249633789
Buy
XLI
86.2572250366211
Buy

IYR
83.99561309814453
Buy
VOX
85.47579956054688
Buy
IYR
82.72380065917969
Buy
XLB
67.40321350097656
Buy
XLI
83.9109878540039
Buy
XLF
30.532339096069336
Buy
XLY
147.5380096435547
Buy
VOX
84.79034423828125
Buy
IYR
81.90418243408203
Buy
XLB
66.02349853515625
Buy
XLI
82.33712005615234
Buy
XLF
30.0484676361084
Buy
XLY
144.14170837402344
Buy
XLP
66.11695098876953
Buy
XLE
66.21929168701172
Buy
VOX
83.12567901611328
Buy

XLU
67.76990509033203
Buy
IYR
80.83023071289062
Buy
XLB
64.9525375366211
Buy
XLI
81.47245788574219
Buy
XLF
29.574275970458984
Buy
XLY
143.8168182373047
Buy
XLE
64.5938491821289
Buy
VOX
81.6960220336914
Buy
XLU
66.13610076904297
Buy
IYR
78.64351654052734
Buy
XLF
29.44846534729004
Buy
XLP
65.0210189819336
Buy
XLE
65.31730651855469
Buy
XLU
65.0217056274414
Buy
IYR
77.52017211914062
Buy
XLU
63.08570861816406
Buy

XLP
63.59157180786133
Buy
XLU
61.8674201965332
Sell
XLP
66.85071563720703
Sell
XLV
125.3951416015625
Sell
XLB
71.0888900756836
Sell
XLI
88.48688507080078
Sell
XLP
67.72746276855469
Sell
XLV
126.34791564941406
Sell
VOX
87.17216491699219
Sell
XLB
71.59059143066406
Sell
XLP
68.17535400390625
Sell
XLV
127.74787139892578
Sell
XLI
89.83731079101562
Sell
XLP
68.23252868652344
Sell
XLI
91.92611694335938
Sell
XLF
33.087188720703125
Sell

XLP
69.72868347167969
Sell
XLV
129.1672821044922
Buy
VOX
77.8189697265625
Buy
XLY
129.98544311523438
Sell
XLB
77.45677947998047
Sell
XLF
34.43235397338867
Sell
IYR
84.01271057128906
Sell
XLB
78.39266967773438
Sell
XLF
34.71299362182617
Sell
XLK
131.17027282714844
Sell
IYR
83.81278991699219
Sell
XLB
78.28653717041016
Sell
XLP
71.84428405761719
Sell
XLP
72.36841583251953
Sell
XLV
132.0255889892578
Sell
XLP
72.61617279052734
Sell

XLV
132.55056762695312
Sell
XLU
66.6082992553711
Sell
XLV
133.3380584716797
Sell
XLU
66.99549865722656
Sell
XLV
135.15611267089844
Sell
XLV
135.5449676513672
Buy
XLE
82.33250427246094
Buy
XLE
80.16214752197266
Buy
XLE
79.9742431640625
Buy
XLE
79.6172103881836
Buy
XLE
77.68175506591797
Buy
XLF
32.86460494995117
Buy
VOX
80.9876480102539
Buy
XLB
76.29898834228516
Buy
XLF
32.61299133300781
Buy
XLY
131.8263702392578
Buy

IYR
81.18733215332031
Buy
XLB
75.30750274658203
Buy
XLI
94.8052749633789
Buy
XLK
123.91927337646484
Buy
XLY
129.7099151611328
Buy
VOX
79.03992462158203
Buy
IYR
80.22675323486328
Buy
XLY
128.19961547851562
Buy
IYR
80.0058364868164
Sell
XLF
34.45349884033203
Sell
XLB
80.57077026367188
Sell
XLI
99.54945373535156
Sell
XLF
34.843021392822266
Sell
VOX
87.17508697509766
Sell
IYR
86.0093994140625
Sell
XLB
80.87181854248047
Sell

XLI
100.13514709472656
Sell
XLE
85.25927734375
Sell
VOX
87.9128646850586
Sell
IYR
86.94115447998047
Sell
XLB
81.3670654296875
Sell
XLY
137.90316772460938
Sell
IYR
86.46086883544922
Buy
XLP
69.82559967041016
Buy
XLV
129.75794982910156
Buy
XLP
69.16333770751953
Buy
XLU
65.5251693725586
Sell
XLK
132.72268676757812
Sell
XLE
88.3822250366211
Sell
XLY
145.98780822753906
Buy
XLV
128.52792358398438
Sell
XLY
149.57115173339844
Sell

XLK
141.2493896484375
Sell
XLY
154.15145874023438
Sell
VOX
99.55979919433594
Sell
IYR
91.48463439941406
Buy
XLU
63.211509704589844
Buy
XLV
127.70792388916016
Buy
XLB
77.64781188964844
Buy
XLF
34.706687927246094
Buy
XLV
127.18075561523438
Buy
IYR
85.356201171875
Buy
XLF
34.66773986816406
Buy
XLV
126.75121307373047
Buy
IYR
84.48209381103516
Buy
XLV
125.4528579711914
Buy
IYR
83.55035400390625
Buy
XLV
125.07212829589844
Buy

XLP
69.13453674316406
Buy
XLV
124.14473724365234
Buy
XLU
61.88804626464844
Buy
XLP
68.6258544921875
Buy
XLV
123.93972778320312
Buy
XLU
60.86928176879883
Sell
XLB
82.15364074707031
Buy
XLF
32.66168212890625
Buy
XLB
75.9192886352539
Buy
XLI
96.64047241210938
Buy
XLF
32.06765365600586
Buy
XLY
136.42247009277344
Buy
XLP
68.25151824951172
Buy
VOX
86.46682739257812
Buy
IYR
78.86274719238281
Buy
XLB
75.14242553710938
Buy

XLI
96.09381103515625
Buy
XLF
30.801698684692383
Buy
XLF
31.42494010925293
Buy
XLB
73.63723754882812
Buy
XLI
94.71742248535156
Buy
XLF
30.587461471557617
Buy
XLE
73.43196105957031
Sell
XLK
141.94102478027344
Buy
XLE
74.22929382324219
Buy
XLI
94.36600494384766
Sell
XLK
141.74342346191406
Buy
XLE
73.06175994873047
Sell
XLK
143.2742919921875
Sell
VOX
93.05757904052734
Buy
IYR
76.5093765258789
Buy
IYR
76.0562973022461
Sell

XLP
70.74957275390625
Sell
XLP
71.27035522460938
Sell
XLP
71.4728775024414
Sell
XLK
149.53244018554688
Sell
XLY
148.0670623779297
Sell
XLP
72.05152893066406
Sell
XLV
126.87319946289062
Sell
XLP
72.42765808105469
Sell
XLE
83.04151153564453
Sell
XLV
128.2942352294922
Sell
XLV
128.31382751464844
Sell
XLV
130.52867126464844
Sell
XLU
66.4876937866211
Sell
XLV
130.85208129882812
Sell
XLU
66.95767974853516
Sell
XLF
32.549766540527344
Sell

XLF
32.64762878417969
Buy
XLK
142.5613250732422
Buy
XLB
76.61035919189453
Buy
XLI
95.19424438476562
Buy
VOX
92.32125854492188
Sell
XLP
74.68437957763672
Buy
XLE
77.21959686279297
Buy
XLE
75.7616958618164
Buy
XLU
65.28877258300781
Buy
XLF
30.87628173828125
Buy
XLE
74.91767883300781
Buy
XLV
128.2452392578125
Buy
XLU
63.92679214477539
Buy
IYR
79.19593048095703
Sell
XLY
149.00770568847656
Buy
XLU
63.69660186767578
Sell

XLK
156.00845336914062
Sell
XLY
151.3246612548828
Buy
XLP
73.17025756835938
Sell
VOX
100.20630645751953
Buy
XLU
63.5047721862793
Sell
XLK
155.9391326904297
Buy
XLP
72.10939025878906
Buy
XLP
71.57896423339844
Buy
XLV
127.40239715576172
Buy
XLB
74.25011444091797
Buy
XLI
95.36088562011719
Buy
XLP
71.11605072021484
Buy
XLV
126.53018951416016
Buy
IYR
77.77584075927734
Buy
XLB
73.98677062988281
Sell
XLK
158.66221618652344
Buy

XLP
70.57597351074219
Buy
XLV
125.236572265625
Buy
XLU
61.95095443725586
Buy
IYR
77.7854995727539
Sell
XLK
163.16770935058594
Buy
XLV
124.98175811767578
Sell
XLK
164.03909301757812
Buy
XLP
70.00696563720703
Buy
XLV
124.20755004882812
Buy
XLB
73.16751861572266
Buy
XLI
94.92960357666016
Buy
XLE
73.45978546142578
Sell
XLI
98.93850708007812
Sell
XLY
155.45359802246094
Sell
XLY
155.91896057128906
Sell
XLF
32.33446502685547
Sell

XLY
157.54281616210938
Sell
XLI
100.45777130126953
Sell
XLF
32.46168518066406
Sell
XLE
78.77338409423828
Sell
XLI
100.63420104980469
Sell
XLY
158.79039001464844
Sell
XLY
162.35494995117188
Sell
XLB
79.19490814208984
Sell
XLI
102.26129150390625
Sell
XLY
164.03817749023438
Sell
XLI
103.52571105957031
Sell
VOX
105.5353775024414
Sell
XLB
81.2200927734375
Sell
XLF
33.138179779052734
Sell
XLB
81.52391815185547
Sell
XLF
33.32496643066406
Sell

IYR
84.7139663696289
Sell
IYR
85.0051498413086
Buy
XLV
126.94279479980469
Sell
XLI
107.24624633789062
Sell
XLE
80.51220703125
Sell
VOX
106.8108139038086
Sell
XLF
33.777156829833984
Sell
XLE
81.25724029541016
Sell
VOX
108.2356185913086
Sell
XLB
82.08257293701172
Sell
XLK
174.8910369873047
Sell
XLY
173.0989990234375
Sell
VOX
109.71979522705078
Sell
XLK
176.86569213867188
Sell
XLF
34.37681198120117
Sell
XLK
178.87010192871094
Sell

XLP
73.20372009277344
Sell
XLV
132.7290496826172
Sell
XLU
65.21446228027344
Sell
XLP
73.45623779296875
Sell
XLV
134.06735229492188
Sell
XLU
66.19099426269531
Sell
XLP
73.73789978027344
Sell
XLE
82.88277435302734
Sell
XLV
133.7721405029297
Sell
XLU
66.01695251464844
Sell
XLB
83.81732940673828
Sell
XLE
83.31817626953125
Sell
VOX
111.11491394042969
Sell
VOX
111.43152618408203
Buy
XLU
61.869144439697266
Buy
IYR
83.22895812988281
Buy

XLU
61.859474182128906
Buy
XLK
169.0067596435547
Buy
XLK
166.82371520996094
Buy
XLB
79.92637634277344
Buy
XLI
105.82914733886719
Buy
XLF
33.62969970703125
Buy
XLP
71.51372528076172
Buy
XLB
79.3873291015625
Buy
XLI
105.23869323730469
Buy
XLF
33.58055114746094
Buy
XLY
164.5368194580078
Buy
XLP
71.3486099243164
Buy
IYR
81.0548095703125
Buy
XLI
104.3530044555664
Buy
XLF
33.41343307495117
Buy
XLY
161.7489013671875
Buy

XLP
70.65901184082031
Buy
IYR
80.49185943603516
Buy
XLI
104.54981231689453
Buy
XLY
161.38182067871094
Buy
VOX
104.44602966308594
Buy
XLP
70.4453353881836
Buy
XLF
33.04970932006836
Buy
XLP
70.04712677001953
Sell
XLK
173.46214294433594
Sell
XLK
174.3055877685547
Sell
XLK
174.84141540527344
Sell
XLE
87.7980728149414
Sell
XLE
88.26250457763672
Buy
XLU
59.635704040527344
Sell
XLE
88.30120849609375
Buy
XLV
129.3734130859375
Buy

XLU
59.771060943603516
Sell
XLY
171.92825317382812
Sell
XLE
89.96544647216797
Sell
XLF
34.41613006591797
Sell
XLU
63.05837631225586
Buy
XLB
77.25874328613281
Buy
XLI
100.92451477050781
Buy
XLK
163.1427459716797
Buy
XLP
68.95729064941406
Buy
IYR
78.3080062866211
Buy
XLB
77.1799545288086
Buy
XLI
100.57868194580078
Buy
XLF
33.23694610595703
Buy
XLY
159.94937133789062
Buy
XLP
68.5857162475586
Buy
VOX
104.21846771240234
Buy

IYR
77.83242797851562
Buy
XLP
68.34125518798828
Buy
VOX
104.2877197265625
Buy
IYR
77.68682098388672
Buy
XLB
76.6678466796875
Buy
XLI
99.54117584228516
Buy
XLF
32.87159729003906
Buy
XLK
161.064453125
Buy
XLY
158.00131225585938
Buy
XLP
67.8327865600586
Buy
VOX
103.16964721679688
Buy
IYR
76.25363159179688
Buy
XLF
32.82222366333008
Buy
XLY
157.39503479003906
Buy
XLP
67.2754135131836
Buy
XLV
127.56230163574219
Buy

XLU
58.608177185058594
Buy
IYR
75.70391845703125
Buy
XLU
57.34107971191406
Buy
XLV
127.20659637451172
Buy
XLU
57.43854904174805
Buy
XLE
86.3503189086914
Buy
XLU
54.76789093017578
Buy
XLF
31.963153839111328
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
153.14112854003906
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
149.47361755371094
Buy
VOX
102.421875
Buy
IYR
71.9344253540039
Buy
XLK
159.29440307617188
Buy
XLY
147.13790893554688
Buy
XLV
123.76803588867188
Buy
VOX
100.18820190429688
Buy
XLF
31.054719924926758
Buy

XLV
121.67328643798828
Buy
VOX
99.97972106933594
Sell
XLP
67.1482925415039
Sell
XLU
59.94350814819336
Sell
XLP
67.22652435302734
Sell
XLU
60.294395446777344
Sell
XLK
178.51634216308594
Sell
XLB
78.32234191894531
Sell
XLI
103.45404815673828
Sell
XLY
166.52903747558594
Sell
XLP
68.34125518798828
Sell
IYR
80.21944427490234
Sell
XLB
78.6670150756836
Sell
XLI
103.67143249511719
Sell
XLP
68.88883972167969
Sell
IYR
84.98040008544922
Buy

XLE
79.83920288085938
Buy
XLE
79.29335021972656
Sell
XLK
187.23728942871094
Sell
XLK
188.48028564453125
Buy
XLE
79.14714050292969
Sell
XLB
82.7244644165039
Sell
XLI
110.40039825439453
Sell
XLF
36.73244857788086
Sell
XLK
190.14097595214844
Sell
XLY
175.3946990966797
Sell
XLP
70.69784545898438
Sell
XLV
134.3504638671875
Sell
XLU
64.2906265258789
Sell
IYR
88.13145446777344
Sell
XLB
84.09334564208984
Sell
XLI
111.82325744628906
Sell

XLF
37.09779739379883
Sell
XLK
189.67359924316406
Sell
XLY
177.750244140625
Sell
VOX
114.30508422851562
Sell
XLU
63.452388763427734
Sell
IYR
90.56591796875
Sell
XLB
83.87670135498047
Sell
XLK
190.62823486328125
Sell
XLY
178.1179962158203
Sell
XLY
179.22320556640625
Sell
VOX
115.25812530517578
Sell
XLB
84.7801284790039
Sell
XLY
180.6271209716797
Sell
VOX
116.6006851196289
Sell
VOX
117.05848693847656
Sell
XLP
71.76583862304688
Sell

XLV
137.74095153808594
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
199.4900360107422
Sell
VOX
120.08396911621094
Sell
XLF
37.81731414794922
Sell
XLK
200.36705017089844
Sell
VOX
120.49201202392578
Sell
XLF
37.876853942871094
Sell
XLK
201.17430114746094
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
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Sell
XLI
114.82942962646484
Sell
XLY
176.55477905273438
Sell
XLP
73.07622528076172
Sell
VOX
128.065673828125
Buy

XLB
80.30757904052734
Sell
XLV
141.36361694335938
Buy
IYR
84.48051452636719
Sell
XLV
142.9020233154297
Sell
XLI
115.99182891845703
Sell
XLV
143.2891082763672
Sell
XLY
177.85911560058594
Sell
XLY
179.12362670898438
Buy
IYR
84.46072387695312
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
88.65802001953125
Sell
XLK
210.04405212402344
Sell
IYR
89.51925659179688
Sell
XLP
74.64278411865234
Sell
XLU
62.564491271972656
Sell
XLE
87.66191101074219
Sell
XLE
88.92153930664062
Sell
XLE
89.83672332763672
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
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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

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[ ]: portfolio_data
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[ ]: {'trough': {'Adjusted Close':
XLK      XLY      XLP \      XLB      XLI      XLF
Date
2008-01-02  28.801893  27.678568  16.648193  20.682899  25.905018  18.187738
2008-01-03  29.324924  27.700150  16.542530  20.714579  25.615387  18.091646
2008-01-04  28.439268  27.132332  16.072903  19.906897  24.810888  18.014763
2008-01-07  28.048733  26.794527  16.113997  19.732691  24.899384  18.226175
2008-01-08  27.616346  26.197977  15.526975  19.210064  24.416687  18.091646
...
2009-06-24  18.324320  16.016405  7.210425  14.505185  18.439779  15.126430
2009-06-25  18.715124  16.510376  7.365685  14.715517  19.083601  15.386086
2009-06-26  18.686176  16.443016  7.402947  14.691250  18.951530  15.332821
2009-06-29  18.852627  16.607672  7.496105  14.844954  19.190903  15.426026
2009-06-30  18.671703  16.435526  7.421580  14.731701  19.050579  15.306191
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XLE      XLV      VOX      XLU      IYR
Date
2008-01-02  47.723316  26.220287  51.236687  23.351957  35.358307
2008-01-03  48.287582  26.377869  51.098686  23.318651  34.213158
2008-01-04  46.522724  26.107716  49.870571  23.496197  33.127712
2008-01-07  46.342640  26.625517  50.408741  23.984434  33.437073
2008-01-08  45.532238  26.843159  48.635532  23.989969  32.221371
...
2009-06-24  29.038141  19.861145  34.930630  16.102041  18.738127
2009-06-25  29.646954  20.410694  35.735027  16.372564  19.036978
2009-06-26  29.450172  20.410694  35.542835  16.313755  19.204334
2009-06-29  29.726898  20.534536  35.856052  16.525473  19.252157
2009-06-30  29.548555  20.364252  35.393341  16.401966  19.377668
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[377 rows x 11 columns],
'Bollinger Signal':
XLB  XLI  XLF  XLK  XLY  XLP  XLE  XLV  VOX
XLU  IYR
Date
2008-01-02  nan  nan  nan  nan  nan  nan  nan  nan
2008-01-03  nan  nan  nan  nan  nan  nan  nan  nan
2008-01-04  nan  nan  nan  nan  nan  nan  nan  nan
2008-01-07  nan  nan  nan  nan  nan  nan  nan  nan
2008-01-08  nan  nan  nan  nan  nan  nan  nan  nan
...
2009-06-24  nan  nan  nan  nan  nan  nan  nan  nan
2009-06-25  nan  nan  nan  nan  nan  nan  nan  nan
2009-06-26  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

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[377 rows x 11 columns]],
'contraction': {'Adjusted Close':
XLK          XLY          XLP \
Date
2020-02-03  53.674709  75.240044  27.563166  92.626579  121.403534  56.073540
2020-02-04  54.623413  76.659836  27.828110  95.052765  123.615944  56.410801
2020-02-05  55.635967  77.940430  28.385403  95.608971  124.241188  56.863445
2020-02-06  55.608597  78.190994  28.348860  96.481613  123.962212  56.961075
2020-02-07  54.814972  77.624924  28.248362  95.599388  123.423561  57.032070
2020-02-10  54.787609  78.061073  28.330585  96.893974  124.818344  57.271690
2020-02-11  55.088634  78.358032  28.431084  96.567924  125.799500  57.058697
2020-02-12  55.389671  79.091118  28.449358  97.613190  127.088448  57.032070
2020-02-13  55.188976  78.645683  28.440220  97.354271  126.867203  57.369335
2020-02-14  55.198101  78.543617  28.476763  97.776222  126.674866  57.502453
2020-02-18  55.061268  78.098198  28.230093  97.411835  126.665215  57.298325
2020-02-19  55.207233  78.070343  28.440220  98.572151  127.232773  57.236202
2020-02-20  55.298450  77.958992  28.385403  97.546059  127.280861  57.280575
2020-02-21  55.043030  77.569229  28.111324  95.359627  125.337761  57.378197
2020-02-24  53.492260  75.360664  27.197733  91.418282  121.028389  56.055794
2020-02-25  51.184357  72.289078  26.275000  88.493423  117.796356  55.044010
2020-02-26  51.011032  71.741570  26.083143  88.896217  116.863281  54.733391
2020-02-27  48.621044  69.078300  24.968561  84.101372  112.140274  52.505714
2020-02-28  48.091953  67.816261  24.292498  84.743889  111.418831  51.467312
2020-03-02  50.153553  70.201149  25.534986  89.644188  115.247261  54.218632
2020-03-03  49.715694  68.484390  24.575708  86.239861  112.457710  53.481987
2020-03-04  51.777290  71.314705  25.388813  89.941460  116.343834  56.109043
2020-03-05  50.135307  67.825508  24.164597  87.102936  112.005600  55.052906
2020-03-06  48.830849  67.231613  23.342358  85.261703  110.283768  54.618011
2020-03-09  44.260658  61.032768  20.839106  78.788681  103.338737  52.239460
2020-03-10  46.057716  64.197174  22.063324  84.043823  109.052513  53.739368
2020-03-11  43.868389  60.429596  20.866514  80.073692  103.088646  51.103428
2020-03-12  39.644840  54.175056  18.609940  72.258125  92.671066  46.301941
2020-03-13  42.427097  58.406612  21.058372  80.735390  98.404099  50.242531
2020-03-16  37.756561  51.780888  18.171412  69.582596  85.937645  46.834454
2020-03-17  40.091835  54.165771  19.158094  74.319908  89.246674  50.783920
2020-03-18  37.528503  50.175480  17.531893  71.519730  84.119637  49.479271
2020-03-19  38.486328  50.212616  17.915604  71.778633  87.053482  47.828480
2020-03-20  37.108887  47.697803  17.276085  68.489395  84.465912  44.731030
2020-03-23  35.217163  45.608620  16.270903  67.863777  84.605110  43.407303
2020-03-24  39.358746  51.378662  18.288639  74.814018  92.540771  45.620953
2020-03-25  40.277054  54.081326  18.786165  74.717613  94.164635  45.495995
2020-03-26  42.168781  57.494720  19.965485  79.344696  98.059975  47.986359
2020-03-27  40.644375  55.072609  19.357397  75.758720  94.773582  47.763210
2020-03-30  41.939194  55.876873  19.725937  78.949471  96.755089  49.628750
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2020-03-31	41.360664	55.184830	19.182343	77.474579	94.802574	48.620110
	XLE	XLV	VOX	XLU	IYR	
Date						
2020-02-03	43.006947	93.150146	91.689781	59.895878	84.153000	
2020-02-04	43.161892	94.788933	92.600235	59.298660	85.013504	
2020-02-05	44.784637	96.613953	92.581078	59.541023	85.031258	
2020-02-06	44.327980	96.697762	93.711998	59.558315	85.350632	
2020-02-07	44.018120	95.943550	93.606560	59.367901	85.315132	
2020-02-10	43.797935	96.455666	94.239120	59.592949	86.175659	
2020-02-11	44.287220	97.032951	94.469116	59.809334	86.876488	
2020-02-12	44.882492	97.153999	95.379608	59.852627	87.568443	
2020-02-13	44.743862	96.697762	95.475441	60.519070	88.162827	
2020-02-14	44.507381	96.772232	95.389183	60.925884	88.961227	
2020-02-18	44.140438	96.427719	95.973808	61.436565	88.899124	
2020-02-19	44.727551	96.874672	96.414658	60.770073	87.781364	
2020-02-20	44.678627	96.250801	96.002563	60.986481	88.730583	
2020-02-21	44.148586	96.306686	94.660789	60.873947	88.899124	
2020-02-24	42.109966	93.271179	91.555588	60.164219	87.710381	
2020-02-25	40.250717	90.440552	89.226700	58.900509	85.359489	
2020-02-26	39.035698	90.431252	88.718727	58.303280	84.463501	
2020-02-27	36.948147	87.358521	85.306847	55.680676	80.036728	
2020-02-28	36.915516	86.231857	85.479347	53.819748	77.535027	
2020-03-02	38.407799	90.272949	88.086212	56.987648	81.269821	
2020-03-03	37.233551	88.028938	85.354759	56.286552	81.278702	
2020-03-04	38.114243	93.103569	88.172455	59.480427	84.383644	
2020-03-05	36.719810	90.943375	84.952248	58.562958	82.547302	
2020-03-06	34.656723	90.459183	83.658409	58.086891	81.145622	
2020-03-09	27.676453	85.756981	77.840942	54.927647	75.130898	
2020-03-10	28.989325	88.699356	81.535408	55.438320	78.031807	
2020-03-11	27.456276	85.310051	77.808281	52.651257	73.489723	
2020-03-12	24.031378	78.941124	70.623009	47.336800	66.330597	
2020-03-13	26.249409	84.416153	76.799644	49.916130	71.990471	
2020-03-16	22.677725	76.091850	68.029419	44.246784	59.845684	
2020-03-17	22.832663	80.868538	70.738297	49.907463	62.657864	
2020-03-18	19.554544	78.186920	68.077446	47.734947	56.492336	
2020-03-19	20.883734	76.585358	69.643204	44.956539	56.518948	
2020-03-20	21.087595	73.642982	66.473259	41.390488	54.043858	
2020-03-23	19.650293	69.818054	66.367577	39.278378	51.311508	
2020-03-24	22.801683	75.198044	70.901604	43.500835	55.418900	
2020-03-25	23.877153	76.199196	70.286819	44.611076	58.461552	
2020-03-26	25.336126	81.261032	74.321327	48.413906	62.796700	
2020-03-27	23.618706	79.520721	71.506767	48.676170	62.877312	
2020-03-30	23.860479	83.244606	73.658508	50.477055	64.131264	
2020-03-31	24.227308	82.879715	73.178192	48.440136	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	36.036106	44.768238	16.104380	38.133728	69.853935	39.717800						
2016-01-05	36.019268	44.888088	16.166399	38.034496	69.762993	39.972771						

2016-01-06	35.074924	44.194721	15.918324	37.565384	69.081009	39.837318
2016-01-07	34.122169	42.996349	15.470402	36.455727	67.662491	39.359272
2016-01-08	33.776485	42.559792	15.229220	36.167034	66.935020	39.056507
...
2019-12-24	55.754547	75.889633	28.029104	87.496109	119.797127	55.833916
2019-12-26	56.000851	76.065918	28.184414	88.148201	121.259254	55.887169
2019-12-27	55.791042	76.000954	28.111326	88.138618	121.249641	56.135677
2019-12-30	55.617725	75.648346	28.029104	87.630363	120.470467	55.842781
2019-12-31	56.028225	75.601929	28.120462	87.908455	120.643600	55.896042

	XLE	XLV	VOX	XLU	IYR
Date					
2016-01-04	42.208130	61.440052	71.763771	32.787571	56.998505
2016-01-05	42.369129	61.735367	72.527176	33.022896	57.933796
2016-01-06	40.738209	61.231556	72.214882	32.962173	57.742119
2016-01-07	39.744251	59.989372	70.731369	32.742016	56.454197
2016-01-08	39.233269	59.085979	70.176125	32.726841	55.787243
...
2019-12-24	49.058315	95.267303	90.223419	55.464287	81.376297
2019-12-26	49.042477	95.202553	90.923050	55.559498	81.810966
2019-12-27	48.836632	95.230301	90.750580	55.723942	82.032745
2019-12-30	48.682499	94.658569	89.887978	55.715286	82.094872
2019-12-31	48.959751	94.844803	90.022148	55.931694	82.573921

```
[1006 rows x 11 columns],
'Bollinger Signal':
      XLB  XLI  XLF  XLK  XLY  XLP  XLE  XLV  VOX
XLU  IYR
Date
2016-01-04  nan  nan  nan  nan  nan  nan  nan  nan
2016-01-05  nan  nan  nan  nan  nan  nan  nan  nan
2016-01-06  nan  nan  nan  nan  nan  nan  nan  nan
2016-01-07  nan  nan  nan  nan  nan  nan  nan  nan
2016-01-08  nan  nan  nan  nan  nan  nan  nan  nan
...
2019-12-24  nan  nan  nan  nan  nan  nan  nan  nan
2019-12-26  nan  nan  nan  nan  Sell  nan  nan  nan
2019-12-27  nan  nan  nan  nan  nan  nan  nan  nan
2019-12-30  nan  nan  nan  nan  nan  nan  nan  nan
2019-12-31  nan  nan  nan  nan  nan  nan  nan  nan
```

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[1006 rows x 11 columns]],
'recovery': {'Adjusted Close':
      XLB      XLI      XLF
XLK      XLY  \
Date
2020-10-01  58.204086  72.373734  22.478218  114.247253  144.567032
2020-10-02  58.723598  73.184708  22.655354  111.350616  143.955414
2020-10-05  59.846123  74.363434  23.028284  113.791931  145.858322
```

2020-10-06	59.094681	73.458168	22.795206	112.028763	143.159225
2020-10-07	60.616112	75.080101	23.177456	114.082581	146.431183
...
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	58.330853	24.915937	99.164749	99.959473	53.327785	73.820305
2020-10-02	58.005089	25.156250	98.259125	98.270309	53.959042	74.999542
2020-10-05	58.394203	25.911541	100.277893	99.814690	54.634758	75.416809
2020-10-06	58.014130	25.525312	98.947769	98.057968	55.097084	74.945122
2020-10-07	58.638531	25.885790	100.815605	98.868752	55.434929	75.026764
...
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':
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XLU  IYR
Date
2020-10-01  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-02  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-05  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-06  nan  nan  nan  nan  nan  nan  nan  nan
2020-10-07  nan  nan  nan  nan  nan  nan  nan  nan
...
2024-08-26  nan  nan  nan  nan  nan  nan  nan  nan  Sell
2024-08-27  nan  nan  nan  nan  nan  nan  nan  nan  Sell
2024-08-28  nan  nan  nan  nan  nan  nan  nan  nan  nan
2024-08-29  nan  nan  nan  nan  nan  nan  nan  nan  nan
2024-08-30  nan  nan  nan  nan  nan  nan  nan  nan  nan
```

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[985 rows x 11 columns]]}
```

1.3 Base Model