

Prediction markets like Polymarket and Kalshi are intriguing because they're a test of how good the crowd pulls together different data points to reach a certain level of certainty/uncertainty for a real-world probability. Whether the stakes are as high as the possibility of Trump vs. Kamala becoming the next President of the United States or as low as what the temperature will be in Chicago, these prediction markets open the doors to bet-making savants using a wide range of tactics--from random luck to highly trained algorithms.

Options trading is nothing new, it's been around for centuries. Yet, this sort of democratized platform has only been recently backed by the government, and now, Kalshi is swiftly becoming one of the largest exchanges in the U.S. market. With millions to be made, it's no wonder that even institutional investment firms are getting in on the action. This begs the question, just how good is the crowd at predicting the future?

First, I opened Colab and imported my modules.

Then I grabbed closed markets data from the Kalshi API. Just for some background information, in Kalshi, an event is like a question that's posed to the community, and it can have multiple markets. A market is a binary outcome within an event that can be traded on. So, because we want to see how people are trading, we need the markets data instead of the events data.

```
# Import modules
import json
import requests
import pandas as pd

endpoint = "https://api.elections.kalshi.com/trade-api/v2"

# Get series information
url = f'{endpoint}/{"markets?status=settled&limit=1000"}'
#stick with 100 for now and then check 500 later
print(url)
response = requests.get(url)
markets_data = response.json()
```

I converted the data to a pandas dataframe.

```
# Extract markets List
markets = markets_data.get("markets", [])

# Convert to DataFrame
df = pd.DataFrame(markets)
##display(df)

df = df[['title', 'last_price', 'volume', 'result']]

display(df)
```

However, since there were a lot of closed markets with no trading volume, I filtered those out.

```
# Extract markets with 0 trading vol
df_nonzero = df[df['volume'] > 0]

print(f"total markets with vol traded: {len(df_nonzero['title'])}")
```

| | title | last_price | volume | result |
|-----|---|------------|--------|--------|
| 0 | Will Mackenzie McDonald win the McDonald vs Ho... | 99 | 133745 | yes |
| 1 | Will Brandon Holt win the McDonald vs Holt match? | 1 | 109177 | no |
| 2 | Will Yoshihito Nishioka win the Nishioka vs Ca... | 1 | 19417 | no |
| 3 | Will Pablo Carreno Busta win the Nishioka vs C... | 99 | 44438 | yes |
| 4 | Will Arthur Rinderknech win the Medjedovic vs ... | 44 | 22282 | no |
| ... | ... | ... | ... | ... |
| 995 | Ethereum price at Aug 17, 2025 at 12pm EDT? | 0 | 0 | yes |
| 996 | Ethereum price at Aug 17, 2025 at 12pm EDT? | 0 | 0 | yes |
| 997 | Ethereum price at Aug 17, 2025 at 12pm EDT? | 0 | 0 | yes |
| 998 | Ethereum price at Aug 17, 2025 at 12pm EDT? | 0 | 0 | yes |
| 999 | Ethereum price at Aug 17, 2025 at 12pm EDT? | 0 | 0 | yes |

1000 rows x 4 columns

In order to figure out how accurate the crowd predicts markets, I created a function called `is_correct` that takes the `last_price` and divides it by 100 to get the percentage. If that percentage is greater than 50% (or 0.5) AND if the value in the result column is a “yes” (meaning that the prediction was true), then the value in the new field is set to “actual_yes”. After that, I just took the mean of the new column called “correct” and got the prediction accuracy of the data.

```
# Calculate if public prediction was correct
def is_correct(row):
    predicted_yes = (row['last_price'] / 100) > 0.5
    actual_yes = row['result'].lower() == "yes"
    return predicted_yes == actual_yes

df_nonzero = df_nonzero.copy()
df_nonzero['correct'] = df_nonzero.apply(is_correct, axis=1)

display(df_nonzero)

# Overall accuracy
accuracy = df_nonzero['correct'].mean()

print(f"Public prediction accuracy: {accuracy:.2%}")

# Optional: see first few entries
print(df_nonzero.head())
```

The end result is that the prediction accuracy of the crowd came out to 97.01%. There are some caveats to this, however, namely that I could only get 133 rows back after removing the markets with 0 trading volumes. Since this is not enough data to make a confident outcome, I need to pull more data. The second caveat is that the API limits the amount of rows I get back. So, in order to get more than 1,000, I need a way to circumvent it.

```
Public prediction accuracy: 97.01%

   title  last_price  volume  \
0  Will Mackenzie McDonald win the McDonald vs Ho...    99  133745
1  Will Brandon Holt win the McDonald vs Holt match?     1   109177
2  Will Yoshihito Nishioka win the Nishioka vs Ca...     1    19417
3  Will Pablo Carreno Busta win the Nishioka vs C...    99   44438
4  Will Arthur Rinderknech win the Medjedovic vs ...    44   22282

   result  correct
0     yes     True
1     no     True
2     no     True
3     yes     True
4     no     True
```