

# Looking through packets, I found ONLY 1 UPD Stream. If we follow the stream, we can see a bunch of track data :

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timestamp,x,y,left_button_holding,right_button_holding1747145724.070235,970,629,False,False1747145724.0813808,977,623,False,False1747145724.092615,979,621,False,False1747145724.1038828,977,619,False,False1747145724.115787,976,618,False,False1747145724.1271524,970,614,False,False1747145724.1384137,967,610,False,False1747145724.149663,969,606,False,False1747145724.16095,1002,565,False,False1747145724.172323,1029,533,False,False1747145724.1836581,1082,461,False,False1747145724.1949596,1101,428,False,False1747145724.2062562,1118,370,False,False1747145724.2176337,1123,321,False,False1747145724.2294087,1114,258,False,False1747145724.2406626,1185,233,False,False1747145724.252014,1066,155,False,False1747145724.2638695,1036,92,False,False1747145724.2748846,906,10,False,False1747145724.2878564,963,52,False,False1747145724.297108,951,44,False,False1747145724.308564,951,13,False,False1747145724.3194215,952,12,False,False1747145724.3311553,953,1,False,False1747145724.3853278,953,1,False,False1747145724.5657015,954,0,False,False1747145724.576763,961,4,False,False1747145724.58803,976,15,False,False1747145724.599646,981,20,False,False1747145724.6117158,985,25,False,False1747145724.6228254,987,26,False,False1747145724.6334002,988,26,False,False1747145724.7463605,988,26,False,False1747145724.7576122,988,26,True,False1747145724.8137362,988,26,False,False1747145724.9031174,987,26,False,False1747145724.914499,978,26,False,False1747145724.9257812,937,28,False,False1747145724.937374,900,28,False,False1747145724.9483287,862,30,False,False1747145724.9606678,743,28,False,False1747145724.9719846,626,21,False,False1747145724.982562,558,19,False,False1747145724.9939365,309,17,False,False1747145725.0054089,336,25,False,False1747145725.0167587,241,50,False,False1747145725.0291042,186,71,False,False1747145725.04138,102,141,False,False1747145725.052629,85,168,False,False1747145725.0641544,65,214,False,False1747145725.0783878,64,214,False,False1747145725.0905989,44,220,False,False1747145725.1016448,22,237,False,False1747145725.112372,14,244,False,False1747145725.122978,5,7,262,False,False1747145725.13352995,7,277,False,False1747145725.146452,32,312,False,False1747145725.1575518,46,327,False,False1747145725.1680077,73,361,False,False1747145725.1786838,84,372,False,False1747145725.1899343,90,378,False,False1747145725.2012375,98,384,False,False1747145725.2126453,99,386,False,False1747145725.2237752,101,387,False,False1747145725.2356437,102,387,False,False1747145725.247869,103,387,False,False1747145725.2607479,106,387,False,False1747145725.2730168,111,385,False,False1747145725.2852733,119,382,False,False1747145725.297596521,125,380,False,False1747145725.31026254,137,373,False,False1747145725.32318928,144,369,False,False1747145725.33543166,162,360,False,False1747145725.3484894,172,359,False,False1747145725.36258207,196,358,False,False1747145725.376872,208,358,False,False1747145725.391429,222,358,False,False1747145725.4062155,230,356,False,False1747145725.4212542,242,354,False,False1747145725.436683,247,353,False,False1747145725.45233516,253,352,False,False1747145725.46841486,254,352,False,False1747145725.485058,255,352,False,False1747145725.5013665,256,352,False,False1747145725.5180584,257,352,False,False1747145725.535184,258,348,False,False1747145725.5527660763,260,343,False,False1747145725.57076144,260,339,False,False1747145725.588923,261,334,False,False1747145725.60790763,261,331,False,False1747145725.627414998,261,328,False,False1747145725.64729766,262,327,False,False1747145725.667342378,262,327,False,False1747145725.687776144,260,339,False,False1747145725.708232,262,326,False,False1747145725.72869858,262,325,False,False1747145725.7494268,262,325,False,False1747145725.77089917,262,324,False,False1747145725.7921847,263,322,False,False1747145725.8133554,263,320,False,False,
```

# The idea is to draw this track data and get the flag thanks to this code :

```
import re
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np

data =
"timestamp,x,y,left_button_holding,right_button_holding1747145724.07023
95,970,629,False,False1747145724.0813808,977..."
matches =
re.findall(r'(\d+\.\d+),(\d+),(\d+),(False|True),(False|True)', data)
df = pd.DataFrame(matches, columns=['timestamp', 'x', 'y',
'left_button', 'right_button'])

df['timestamp'] = df['timestamp'].astype(float)
df['x'] = df['x'].astype(int)
df['y'] = df['y'].astype(int)
df['left_button'] = df['left_button'] == 'True'
df['right_button'] = df['right_button'] == 'True'

print(f"🔍 Analizând {len(df)} puncte pentru pattern-ul Zodiac
Killer...")

plt.figure(figsize=(15, 10))

plt.subplot(2, 2, 1)
plt.plot(df['x'], df['y'], 'b.-', markersize=2, alpha=0.7)
plt.title('Traiectoria Mouse - Vedere generală')
plt.grid(True, alpha=0.3)

plt.subplot(2, 2, 2)
plt.scatter(df[df['left_button']][x], df[df['left_button']][y],
c='red', s=100, alpha=0.7)
plt.title('Click-uri Stânga (selecții)')
plt.grid(True, alpha=0.3)
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plt.subplot(2, 2, 3)
plt.scatter(df[df['right_button']]['x'], df[df['right_button']]['y'],
            c='green', s=100, alpha=0.7, marker='s')
plt.title('Click-uri Dreapta (meniuri)')
plt.grid(True, alpha=0.3)

plt.subplot(2, 2, 4)
plt.hexbin(df['x'], df['y'], gridsize=30, cmap='Blues')
plt.colorbar(label='Densitate')
plt.title('Heatmap - Zone frecventate')

plt.tight_layout()
plt.show()

click_points = df[df['left_button'] | df['right_button']]
if not click_points.empty:
    print("\n 📍 Puncte cu click-uri:")
    for idx, row in click_points.iterrows():
        print(f"      ({row['x']}, {row['y']}) - Left: {row['left_button']}, Right: {row['right_button']}")

print(f"\n 📏 Range coordonate: X({df['x'].min()}-{df['x'].max()}), Y({df['y'].min()}-{df['y'].max()}")

from scipy import stats

coords = df[['x', 'y']].values
if len(coords) > 10:
    from sklearn.cluster import KMeans
    kmeans = KMeans(n_clusters=min(5, len(coords)//10))
    df['cluster'] = kmeans.fit_predict(coords)

    plt.figure(figsize=(10, 8))
    scatter = plt.scatter(df['x'], df['y'], c=df['cluster'],
                          cmap='tab10', alpha=0.6)
    plt.colorbar(scatter, label='Cluster')
    plt.title('Cluster-uri de activitate')
    plt.show()

print("\n 📄 Exportând coordonatele importante...")
important_points = df[(df['left_button'] | df['right_button'] |
(df['x'].diff().abs() > 50) | (df['y'].diff().abs() > 50))

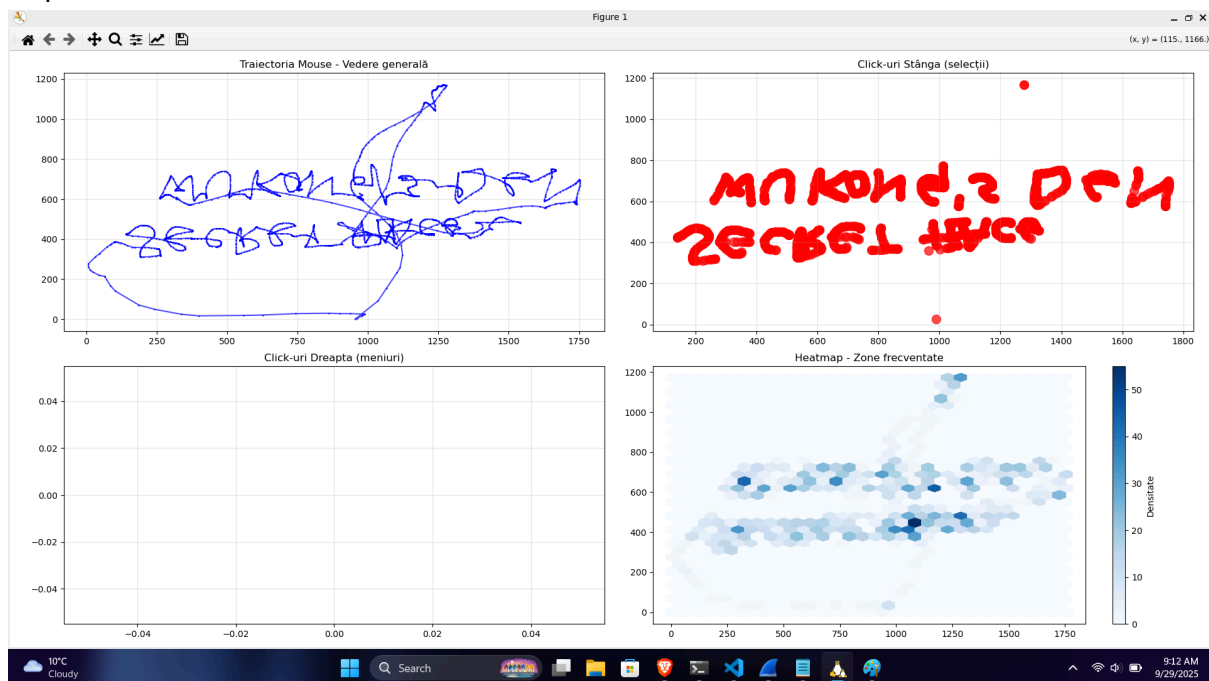
```

```

if not important_points.empty:
    print("📌 Puncte importante (click-uri sau salturi mari):")
    for idx, row in important_points.iterrows():
        print(f"    Timestamp: {row['timestamp']:.2f}, Pos: ({row['x']}, {row['y']}), "
              f"Left: {row['left_button']}, Right: {row['right_button']}")

```

# It's not necessary the whole code anyway, but you can visualise the flag in 4 methods. The output is :



# We got the flag. We can see that it's vertical flipped. If we paste the text from the top right into paint and flip it, we can get the flag :

THE FLAG : ctf{secretplacewukong'sden} ( or ctf{secretplacewukong&#039;sden} )  
~Z4que