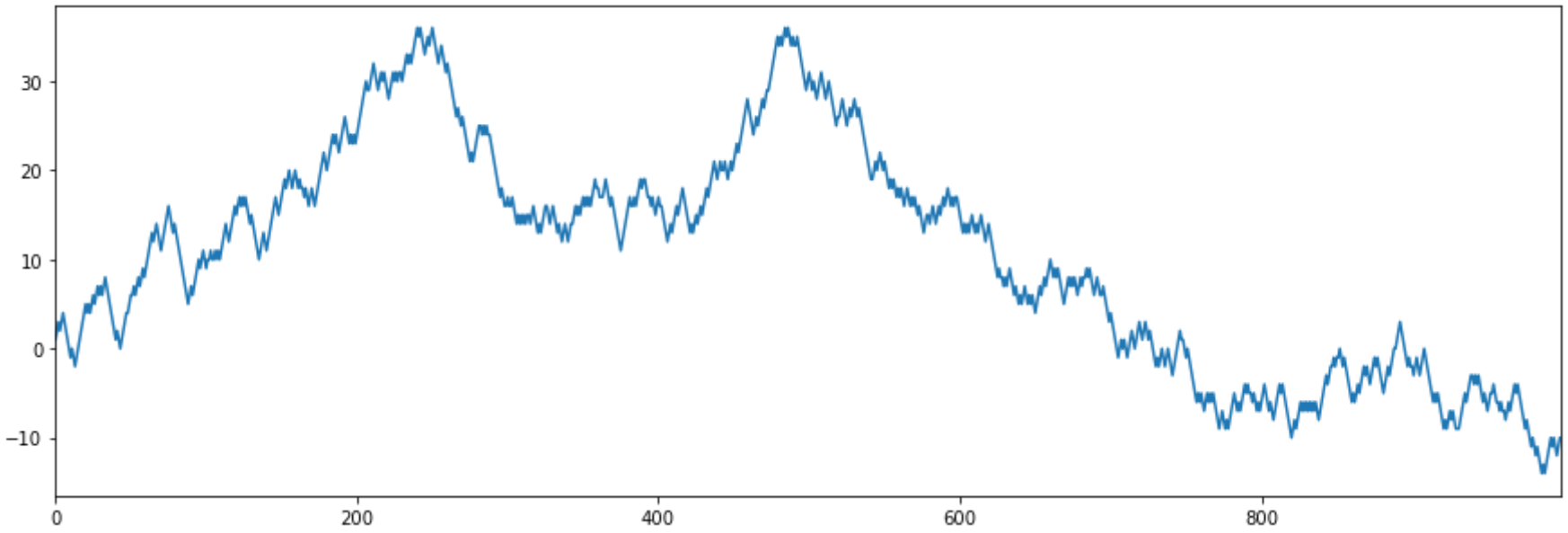
In [29]:
```
from deuces import Deck, Evaluator
#matplotlib.use('Agg')
import matplotlib
import matplotlib.pyplot as plt
import pandas as pd


def build_dataframe(nb_hands):
    decks = [ Deck() for _ in range(nb_hands) ]
    boards = [ deck.draw(5) for deck in decks ]
    player1 = [ deck.draw(2) for deck in decks ]
    player2 = [ deck.draw(2) for deck in decks ]
    player3 = [ deck.draw(2) for deck in decks ]
    player4 = [ deck.draw(2) for deck in decks ]

    e = Evaluator()
    scores = [
        (
            e.evaluate(b, p1),
            e.evaluate(b, p2),
            e.evaluate(b, p3),
            e.evaluate(b, p4)
        )
        for (b, p1, p2, p3, p4) in zip(
            boards,
            player1,
            player2,
            player3,
            player4
        )
    ]

    df = pd.DataFrame(scores)
    return df
```

Generate pnl plot 1

In [30]:
```
%matplotlib inline
# commented out cos it gave me a warning
#matplotlib.use('Agg')
import matplotlib
import matplotlib.pyplot as plt

df = build_dataframe(1000)

pnl = df[1] - df[0]
pnl.ix[pnl != 0] = pnl / abs(pnl)
cum_pnl = pnl.cumsum()

cum_pnl.plot(figsize=(15,5))
```

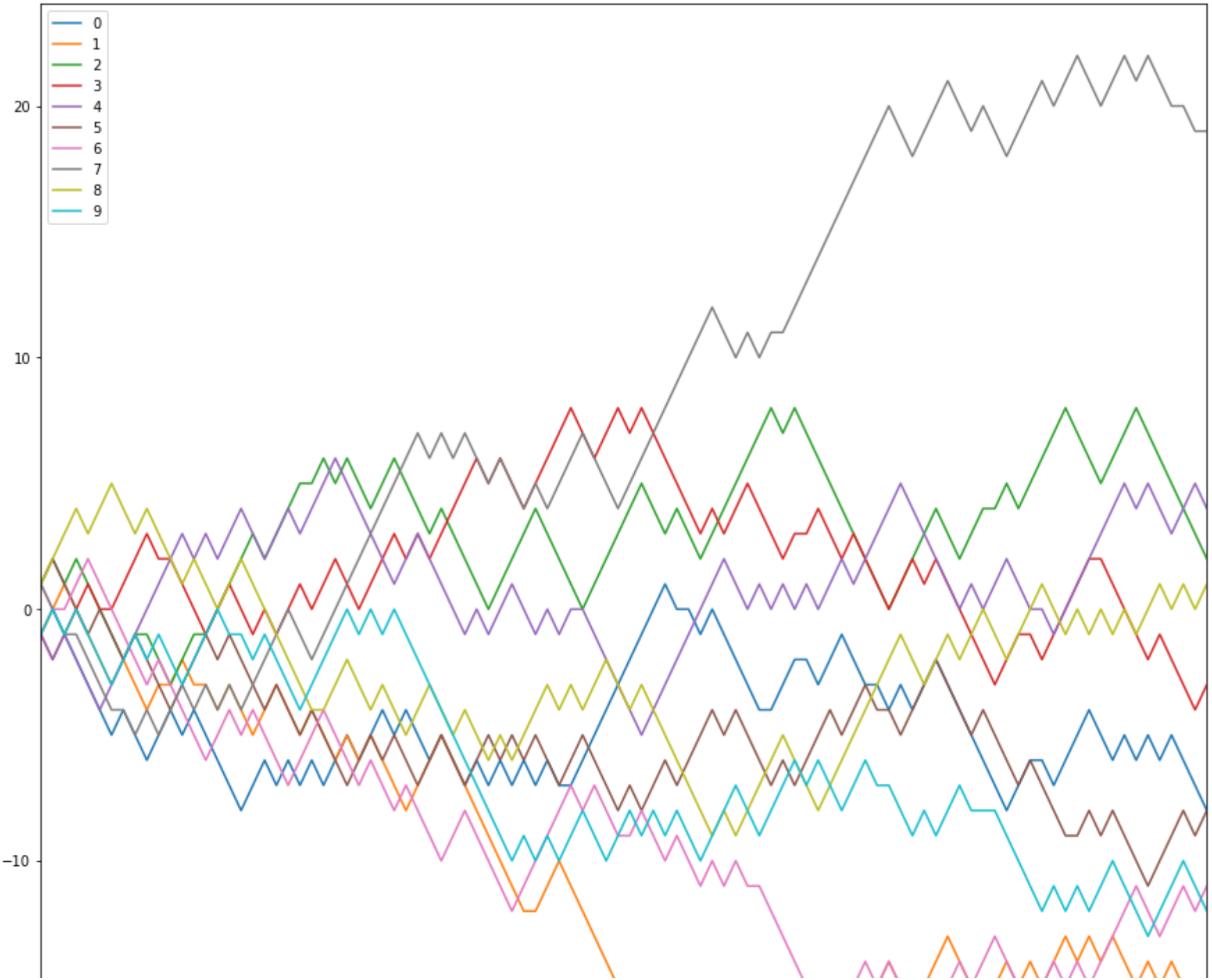
Out[30]: <matplotlib.axes._subplots.AxesSubplot at 0x90ac5de1d0>

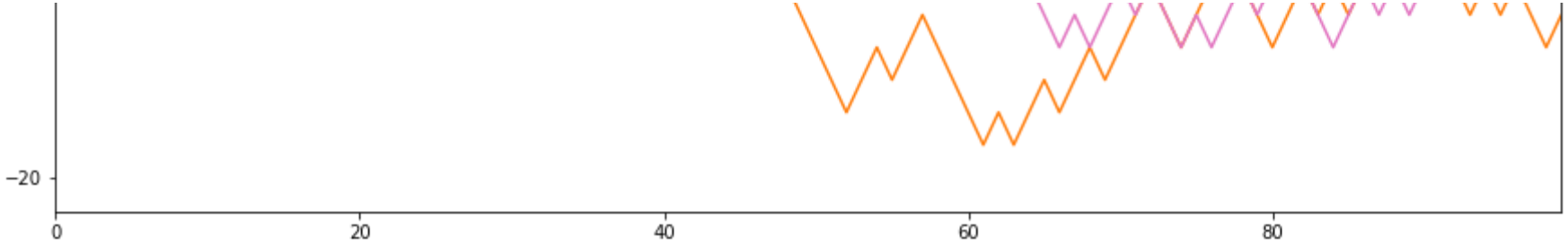


Generate pnl plot 2

In [31]:
```
# generate pnl plot 2
import random
random.seed(0)

df = build_dataframe(1000)

pnl = df[1] - df[0]
pnl.ix[pnl != 0] = pnl / abs(pnl)

pnls = pd.DataFrame(
    pnl.values.reshape(100, 10)
)
cum_pnls = pnls.cumsum()
cum_pnls.plot(figsize=(15,15))
```

```
Out[31]: <matplotlib.axes._subplots.AxesSubplot at 0x90ac5459b0>
```

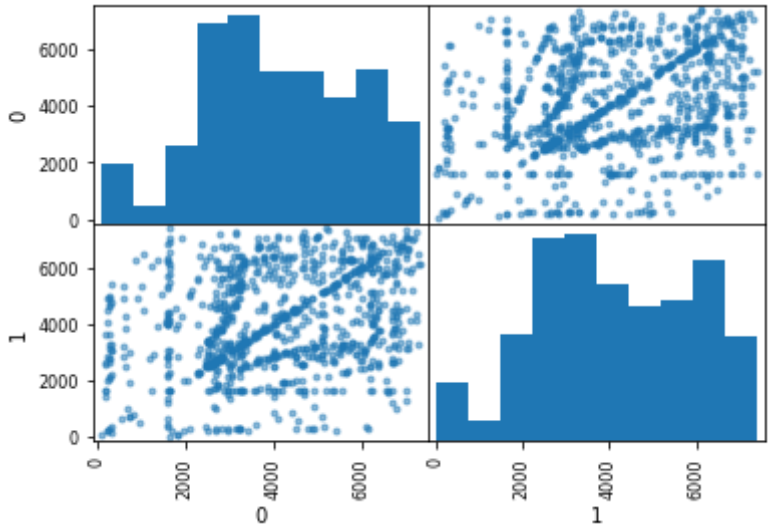

0
1
2
3
4
5
6
7
8
9
20
10
0
−10



Scatter Matrix 1

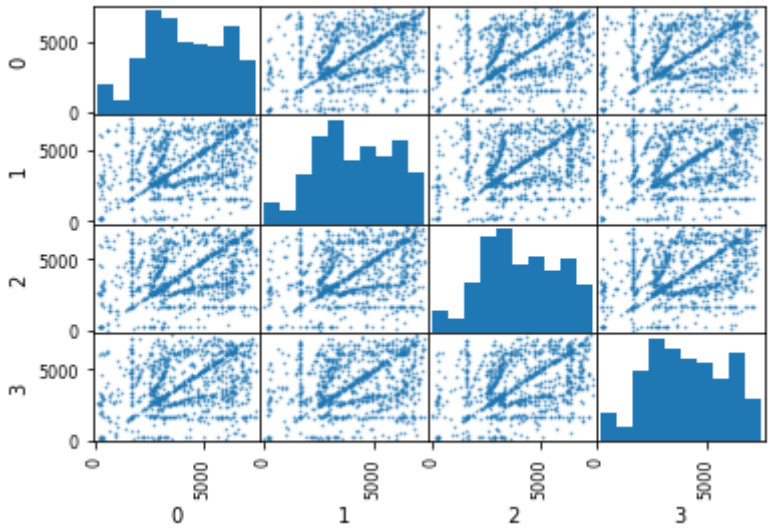
In [32]:
```
random.seed(0)


decks = [ Deck() for _ in range(1000) ]
boards = [ deck.draw(5) for deck in decks ]
player1 = [ deck.draw(2) for deck in decks ]
player2 = [ deck.draw(2) for deck in decks ]

e = Evaluator()
scores = [
    (e.evaluate(b, p1), e.evaluate(b, p2))
    for (b, p1, p2) in zip(boards, player1, player2)
]

df = pd.DataFrame(scores)
pd.scatter_matrix(df)
plt.plot(figsize=(15,15))
```

Out[32]: []



In [ ]:
```
df = build_dataframe(1000)
pd.scatter_matrix(df, s=3)
plt.plot(figsize=(15,15))
```

Out[ ]: []



In [ ]:
```
from collections import Counter
from datetime import datetime
from deuces import (
    Deck,
    Evaluator
)
import random
random.seed(1)


print('Generating the hands.')
print(datetime.now())
hands = [ Deck().draw(5) for _ in range(1000000) ]

e = Evaluator()
print('Scoring them.')
print(datetime.now())
scores = [ e.evaluate(x, []) for x in hands ]
ranks = [ e.get_rank_class(s) for s in scores ]
rank_strings = [ e.class_to_string(r) for r in ranks ]

print('Counting them.')
print(datetime.now())
c = Counter(rank_strings)
for i in c.most_common(10):
    print(i)
```

```
Generating the hands.
2017-04-11 16:10:02.765168
```