

# 未來巢專題期末報告 ( 錢包分類 )

第3小組

組員：

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陳珮婕

# Cryptocurrency wallet Classification

# 流程圖



「分類」or「迴歸」??



# Cryptocurrency wallet Classification

## 錢包資料型態:



data2 - DataFrame

索引	address	n_tx	received_tx	sent_tx	type	wallet_addr	balance	it_used_in_block	total_received	total_sent	lifetime	freq_tx
0	1K8APScnVgryM7Cdu7y0KAsx3z7J2f2	184	91	93	POOL	Glash.io	0	268815	50858974471	50858974471	3986114	122.898
1	1D13AaakhiA4y5UuMacCdeeq2u4u7V	167	82	85	POOL	Glash.io	0	268815	16700000000	16700000000	3921464	118.328
2	1L1LLd6shvB8K04xpQp267z9u448	112	65	67	POOL	Glash.io	0	268815	14633579803	14633579803	2951133	115.936
3	13LChetH8Z4RcLwS4v5eM8C9mW2ZA	118	64	64	POOL	Glash.io	0	268815	3218808999	3218808999	2917137	113.733
4	18eJQmrfurWxAm0T15f8a66uL3D54p	123	62	61	EXCHANGE	Bittrex.com	15	751247	111000000000	111000000000	7842863	4.06546
5	1NcX81rAbyrFclqheqULQ6u6aWVqCQC	62	39	23	POOL	Glash.io	0	237519	427000000000	427000000000	23845648	6.73934
6	16QYKvKCBESdH92cR9p8tTn1j25tR9M	592	302	298	EXCHANGE	Bittrex.com	16.17	751875	47189881516	45692881516	172196386	8.91113
7	1D3aPMLFf8edghJPGQvH5ccr8uBgc	153	138	43	GAMBLING	CloudBet.com	48.8238	695363	17173991365	12291613818	24486937	16.1954
8	1PgkccndwDYRMLbTm9hL3cTvy8Qp	24	12	12	POOL	Glash.io	0	268815	47311254433	47311254433	78388	48.4279
9	19u3Jf8uPCuJpLw3tMkCzaoV2u5G	745	499	246	GAMBLING	CoinGaming.io	0	543151	676858474	676858474	124274320	15.5385
10	1H4Qz265t2jw1MkCMFtybQj1e8BQ	489	258	239	EXCHANGE	Bittrex.com	12.7	751793	27870843358	25880843358	159588597	7.94222
11	14u8uWKC798dFap3d8w138t9u8QFrc	20	11	9	POOL	Glash.io	0	254383	7858616727	7858616727	33793265	1.53483
12	16C9f86Mjra7g6G8L7TfQJ3uag319e3	679	486	193	GAMBLING	CoinGaming.io	0	531482	128254174	128254174	28925744	68.8443
13	1E9yP6f13ERk7BMtYsJYMF388ja36zy7	112	56	56	EXCHANGE	Bittrex.com	12	751473	4573383849	3373383849	11265238	25.7699
14	1H4uK9Mw7cYVAG88Gfcl4q85QqGQ1e	13	7	6	POOL	Glash.io	0	258496	18886168000	18886168000	14224356	2.36889
15	19F2uQz31QhXpM6MP7b19F3Q2yKX8K	487	343	144	GAMBLING	CoinGaming.io	0	539981	19338493376	153849493376	34876112	34.2489
16	1Q8V9HChwF5UCQIar263bv77g34ZEV	188	52	48	EXCHANGE	Bittrex.com	12	751882	4932358000	3682358000	13273816	19.5283
17	1Gp2s6w3489uKxY57e9hKV6T3d9QAM	14	7	7	POOL	Glash.io	0	244924	458817800	458817800	4121530	8.8845
18	12SL9SC3cof8B8GqC77Hn1q625aL8	581	337	244	GAMBLING	CoinGaming.io	0	396437	1898969518	1898969518	13821848	188.954
19	16MFeu81q6kYMH14u2B3vLm2m7	573	278	383	EXCHANGE	Bittrex.com	8.863	751832	28739162461	19993128743	15549837	95.5182
20	1M21La8H8HfL2chngzy8K9TV0aer18	11	6	5	POOL	Glash.io	0	377695	48000000000	48000000000	5792587	4.92222
21	1PM8guQ9qF15H5K1g123H33PK3cvt8	596	316	288	GAMBLING	CoinGaming.io	0	503896	14388000000	14388000000	52316234	29.5287
22	1D6G6dUYeJlB8uov9Q4u3r8L7eawB	248	128	128	EXCHANGE	Bittrex.com	4	752711	839788000	779788000	26285147	24.4355
23	16nZ8kF1u2PQ8u9h211YcFcz2u6g	12	6	6	POOL	Glash.io	0	237584	164152580	164152580	244474	126.136
24	1487u8hF8U7Y1G6pax8u2VcD2j8h7a	553	304	249	GAMBLING	CoinGaming.io	0	136687	687867892	687867892	16899561	89.2537
25	1F9Xk6jYK1K3C0Sej3QzY8hJFczu8u4	126	64	62	EXCHANGE	Bittrex.com	4.30543	751786	2788773466	2657718829	254288843	3.26444
26	1Fw58k65Gz0r3M7y8eF2HmT1CmQ7	12	6	6	POOL	Glash.io	0	237886	6365358000	6365358000	545812	61.4088

格式設置 大小調整 背景顏色 列寬最小最大化 清除所有格式 刷新

本次任務選用sheet2做資料來源(3334筆數與34種特徵)



# Cryptocurrency wallet Classification

讀取錢包資料

觀察特徵

缺失值偵查與處理

特徵擴充與刪減

分類模型選用

分類結果呈現

## ● 特徵選取:

data - DataFrame

索引	balance	total_received	total_sent	average_in_count	average_out_count	type
0	0	-688633081	-688633081	2.02222	2.06667	0
1	0	-503724544	-503724544	2	2.02381	0
2	0	1768677915	1768677915	1.9697	2.0303	0
3	0	-1084886297	-1084886297	2	2	0
4	15	-669149696	-1669149696	1.08772	1.22	1
5	0	1798237696	1798237696	3.54546	0.793103	0
6	14.17	-134758742	-1551758742	1.30736	1.16935	1
7	48.8238	-5877819	-593288870	22	0.623188	2
8	0	436287137	436287137	1.71429	1.33333	0
9	0	676850474	676850474	7.92063	3.78462	2
10	12.7	1301039574	31039574	1.47929	1.29891	1
11	0	1780690991	1780690991	1.375	0.9	0
12	0	128254174	128254174	6.94286	3.16393	2
13	12	278335753	-921664247	1.24444	1.27273	1

格式设置 大小调整 背景颜色 列宽最小最大化 保存并关闭 关闭

1. balance
2. balance, average\_in\_count, average\_out\_count
3. balance, total\_received, total\_sent, average\_in\_count, average\_out\_count



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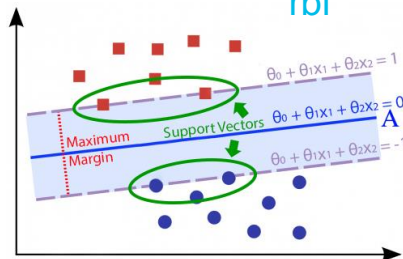
分類模型選用

分類結果呈現

## ● 模型選用:

### 支援向量機(SVM)

rbf



#### SVM的優點與缺點：

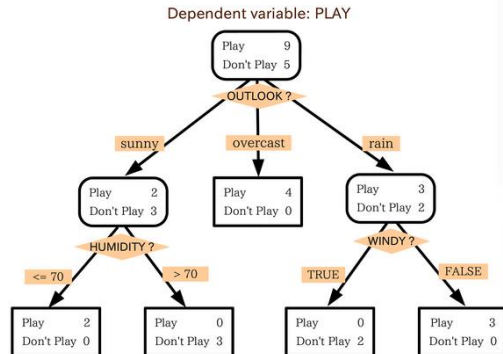
##### 優點：

1. 可以有效處理高維數據
2. 決策函數由少量的支持向量決定，預測效率高
3. 可以透過更換Kernel，做出非線性的決策邊界

##### 缺點：

1. 維度過高容易造成運算負擔
2. 特徵遠大於樣本的情況下容易造成過度擬和的問題

### 決策樹(Decision tree)



#### 優點

- 簡單且高度可解釋性
- **低計算時間複雜度**
- 每個決策階段都相當的明確清楚
- 幾乎沒有要調整的超參數

第13章 決策樹 輸入資料

AI & Data 101

#### 缺點

- 模型容易過度擬合
- 當標籤類別種類多時樹會很複雜

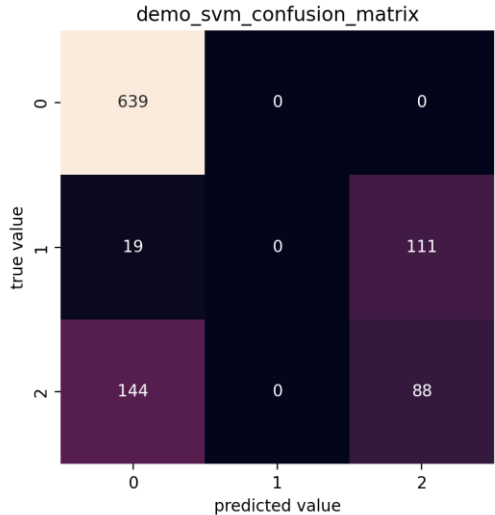


# Cryptocurrency wallet Classification



- 結果呈現(SVM): 1. balance

	A	B	C	D	E	F	G
Train		accuracy	test	precision	recall	fscore	
svm		73.25	72.63	41.3	45.98	43.17	



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分類結果呈現-2(tree3)

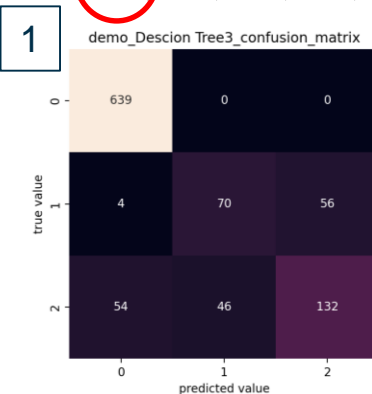
## ● 結果呈現:

1. balance

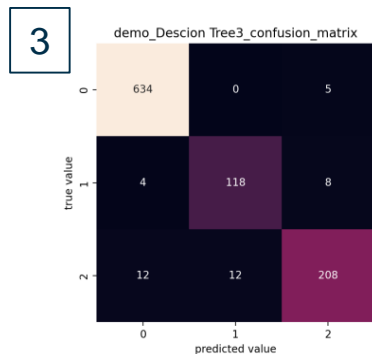
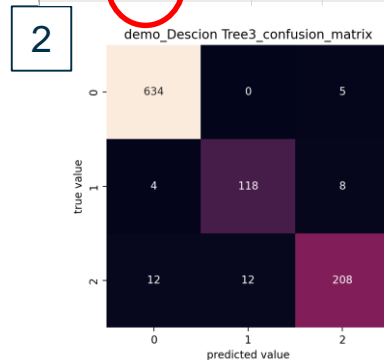
2. balance, average\_in\_count, average\_out\_count

3. balance, total\_received, total\_sent,  
average\_in\_count, average\_out\_count

Train	accuracy	test	precision	recall	fscore
Descion T	84.61	84.02	74.08	70.25	71.81



Train	accuracy	test	precision	recall	fscore
Descion T	95.93	95.9	94.14	93.21	93.66



Train	accuracy	test	precision	recall	fscore
Descion T	95.93	95.9	94.14	93.21	93.66



# Cryptocurrency wallet Classification

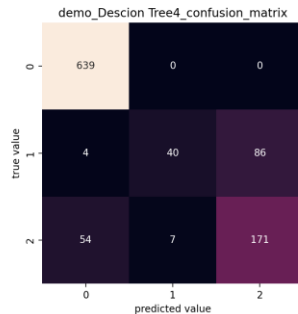


## 結果呈現:

1. balance
2. balance, average\_in\_count, average\_out\_count
3. balance, total\_received, total\_sent, average\_in\_count, average\_out\_count

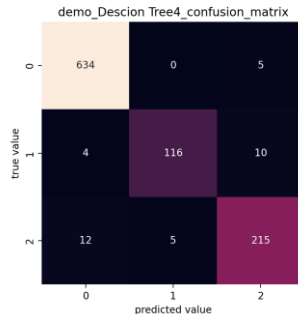
Train	accuracy	test	precision	recall	fscore
Descion	85.34	84.92	81.11	68.16	70.27

1

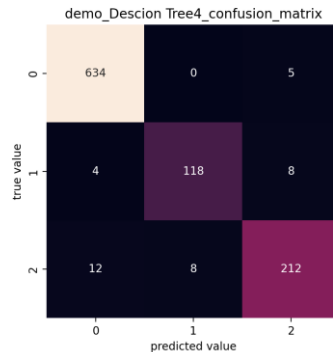


2

Train	accuracy	test	precision	recall	fscore
Descion T	96.53	96.4	95.63	93.71	94.62



3



Train	accuracy	test	precision	recall	fscore
Descion	96.53	96.3	95.14	93.79	94.45





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分類結果呈現-4(tree5)

## 結果呈現:

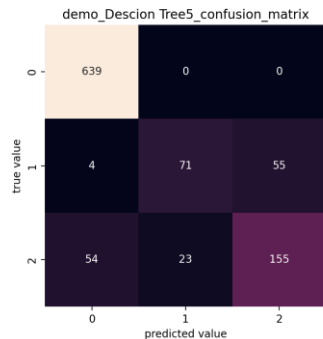
1. balance

2. balance, average\_in\_count, average\_out\_count

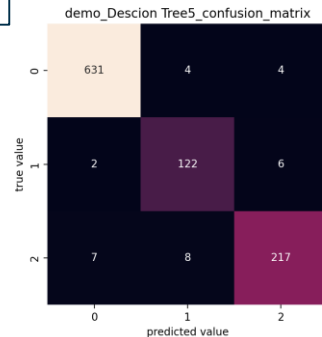
3. balance, total\_received, total\_sent,  
average\_in\_count, average\_out\_count

Train	accuracy	test	precision	recall	f1score
Descion T	86.67	86.41	80.34	73.81	76.4

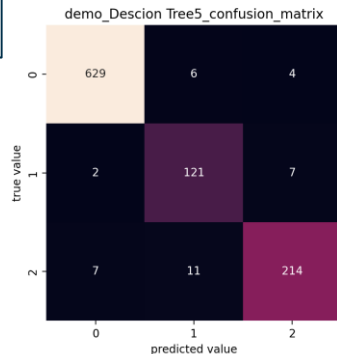
1



2



3



Train	accuracy	test	precision	recall	f1score
Descion T	97.51	96.3	93.79	94.58	94.15



# Cryptocurrency wallet Classification

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分類模型選用

分類結果呈現-5(tree6)

## ● 結果呈現:

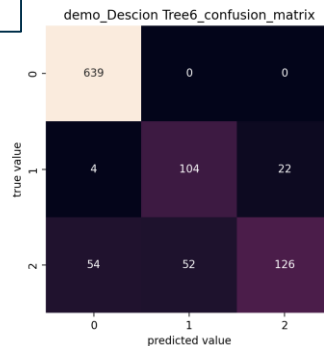
1. balance

2. balance, average\_in\_count, average\_out\_count

3. balance, total\_received, total\_sent,  
average\_in\_count, average\_out\_count

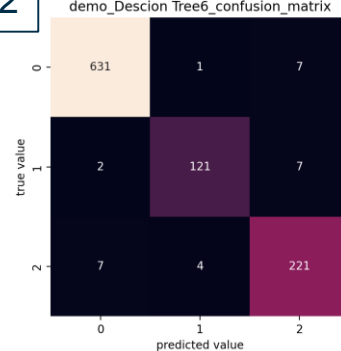
Train	accuracy	test	precision	recall	fscore
Descion T	87.53	86.81	81.16	78.1	78.23

1

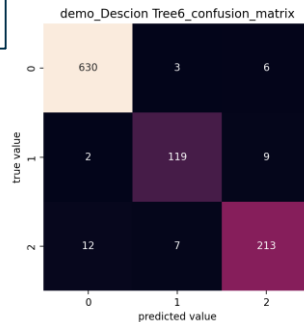


Train	accuracy	test	precision	recall	fscore
Descion T	97.77	97.2	96.22	95.69	95.95

2



3



Train	accuracy	test	precision	recall	fscore
Descion T	97.9	96.1	94.5	93.98	94.24



# Cryptocurrency wallet Classification

## 參考資料:

1. <https://ithelp.ithome.com.tw/articles/10271143>
2. <https://ithelp.ithome.com.tw/articles/10278350?sc=rss.iron>



**Thank You For Listening**

A dark blue diagonal bar that starts from the bottom left corner and extends towards the top right corner, covering the lower half of the slide.