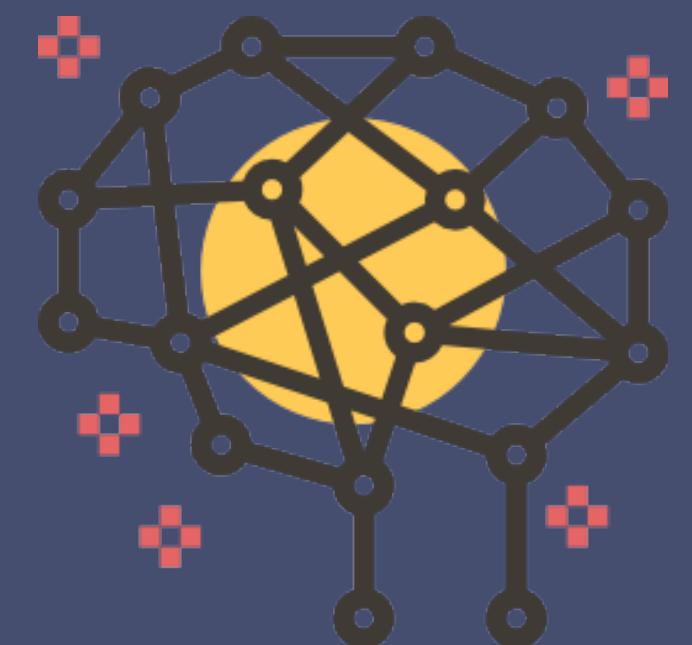


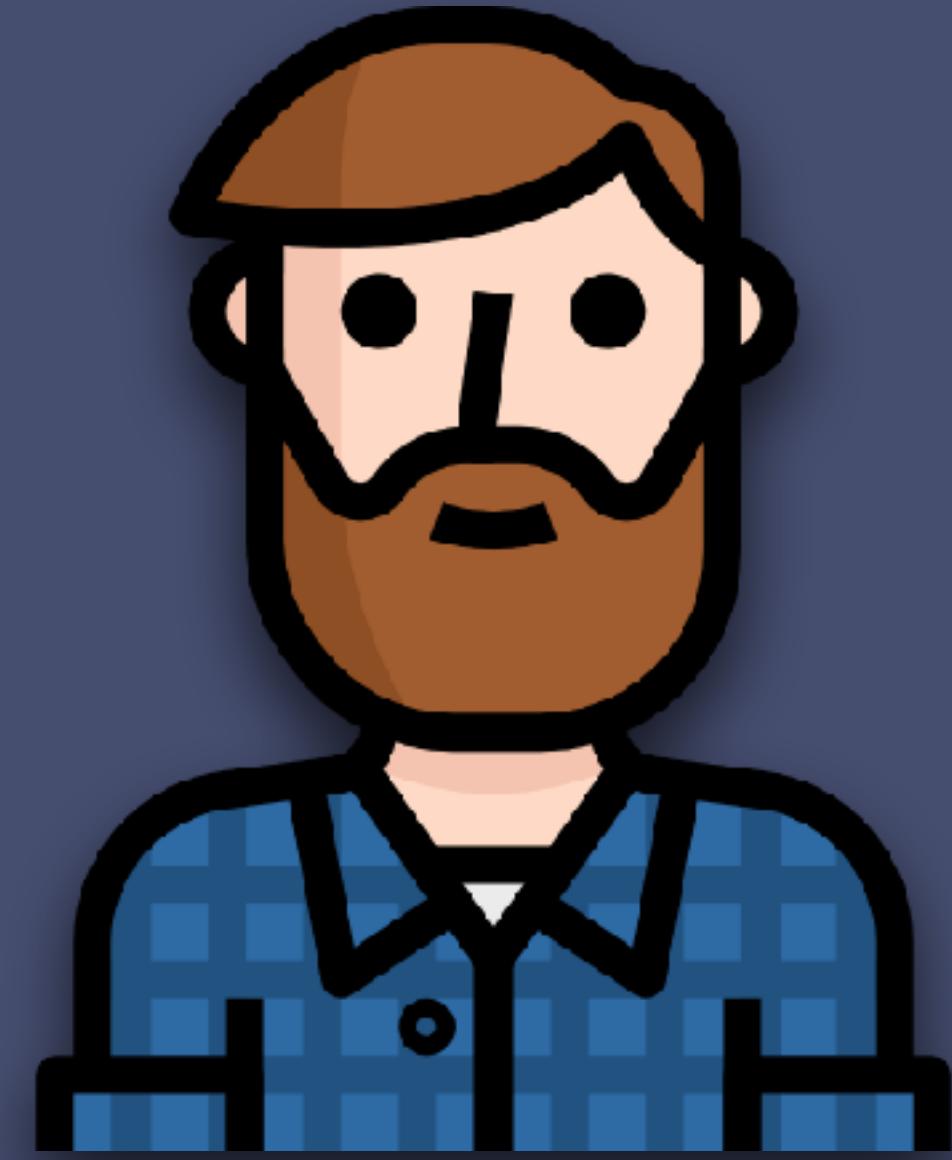


Credit Sense

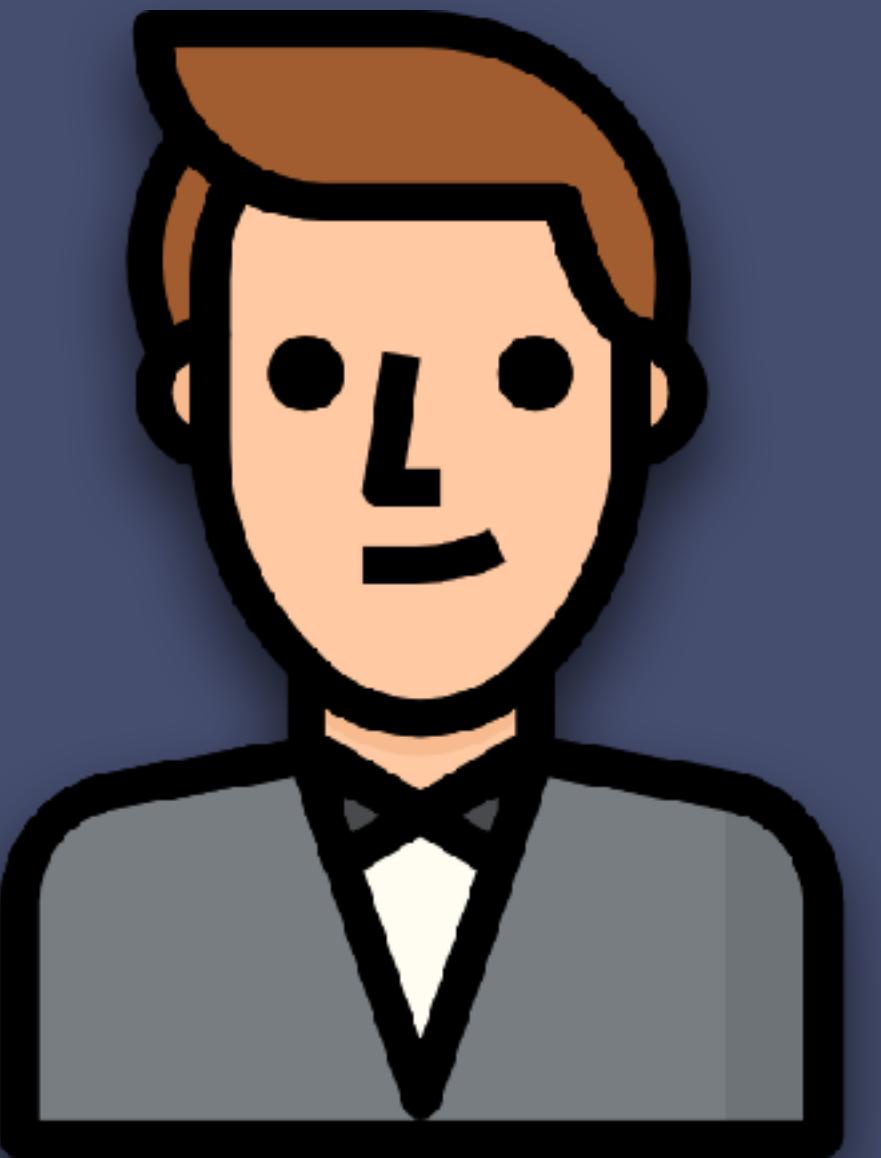
Decentralised Intelligent Credit Scoring



Three Wealthy People



Mr. Blue

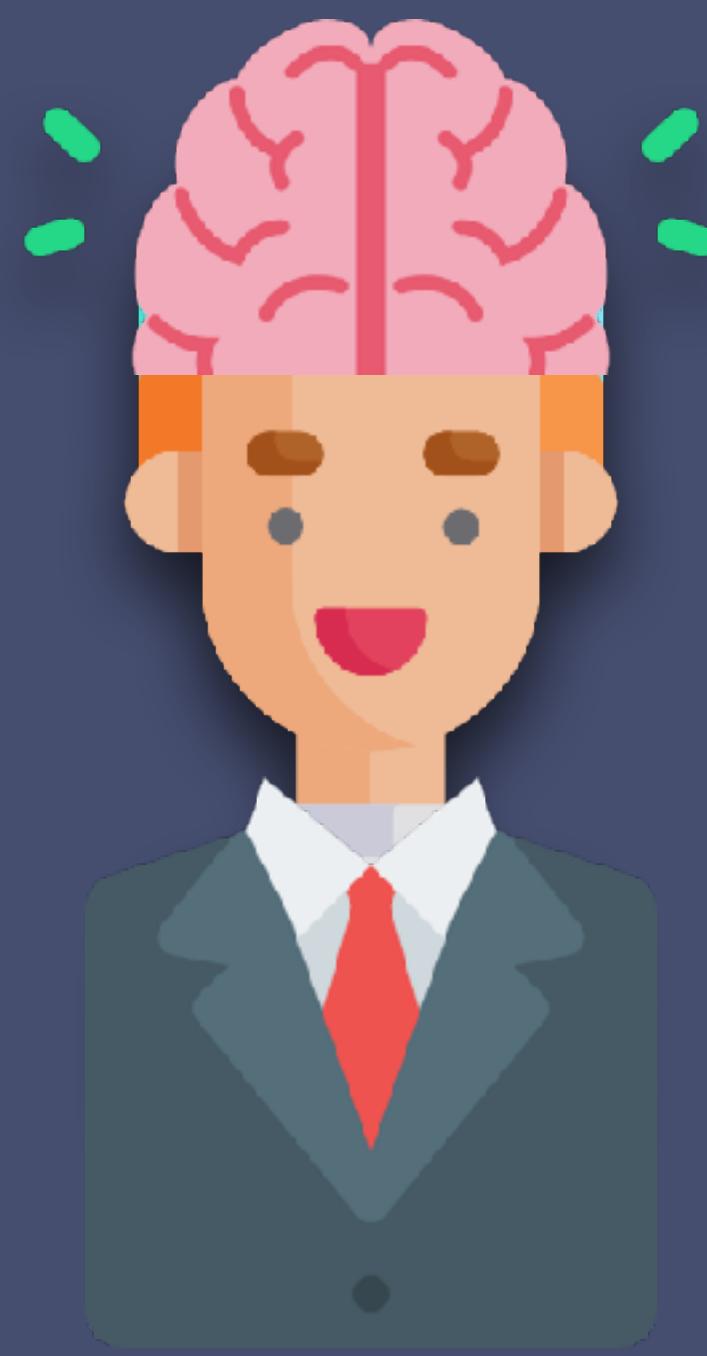


Mr. Grey

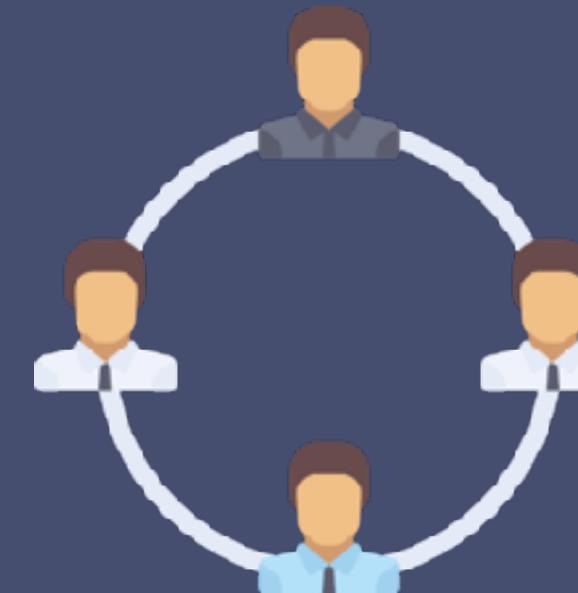


Mr. White

This is Mr. John



John's exceptional
smartness



John's brilliant network of
people

The Tale of Jane



Keeps her promise
and pays her money
on time



Jane runs away with
my money and John
wasn't smart enough



Someone breaks into
John's office and steals
Jane's information

This is Mr. John

Pros

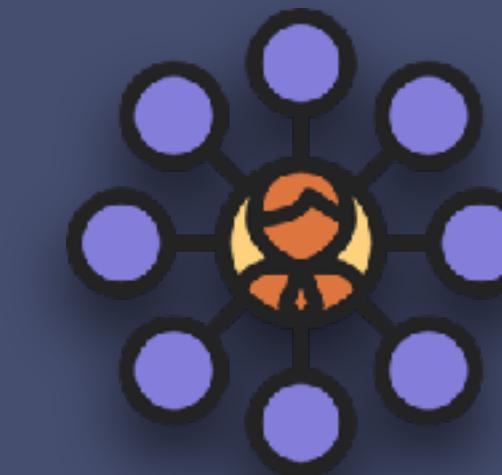


John's exceptional
Artificial Intelligence



John's brilliant network
Blockchain

Cons



Centralised Credit
Scoring

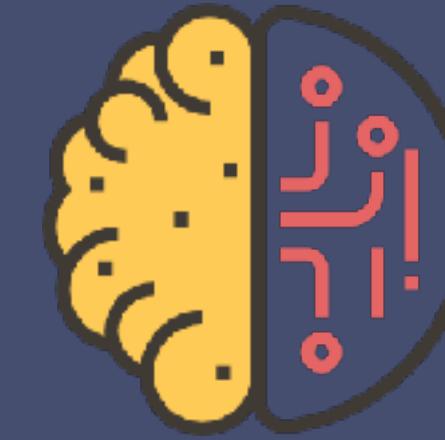
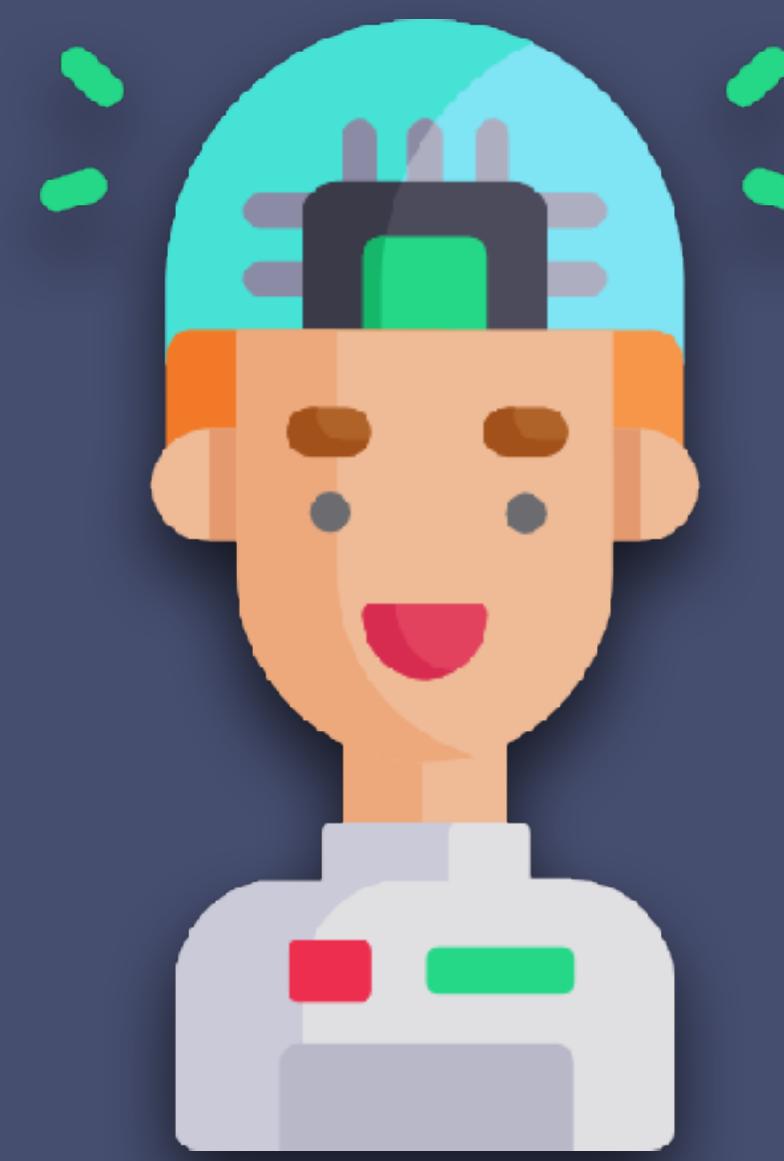


High Risk of Data
Privacy

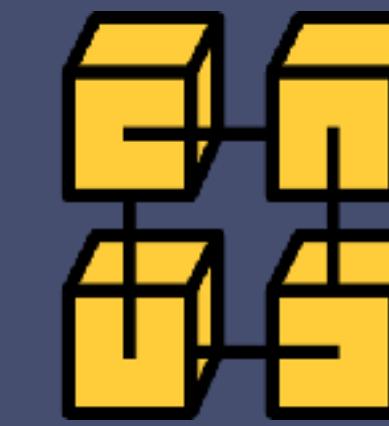


Static Scoring
Methodology

This is Credit Sense



Artificial Intelligence

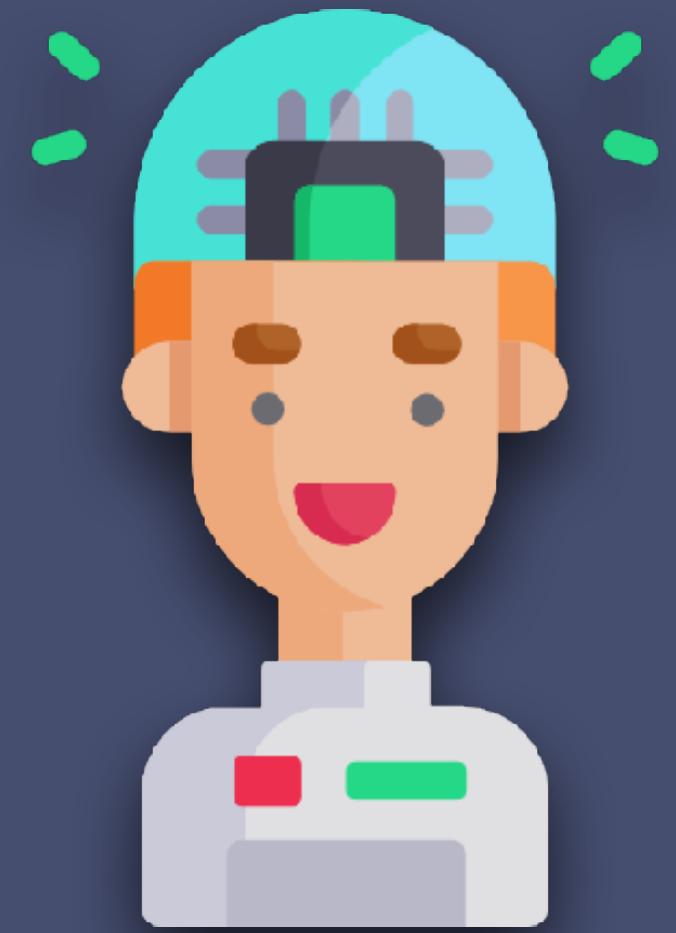


Blockchain

Why Credit Sense makes sense?



Decentralised
Anonymous
Data Sharing

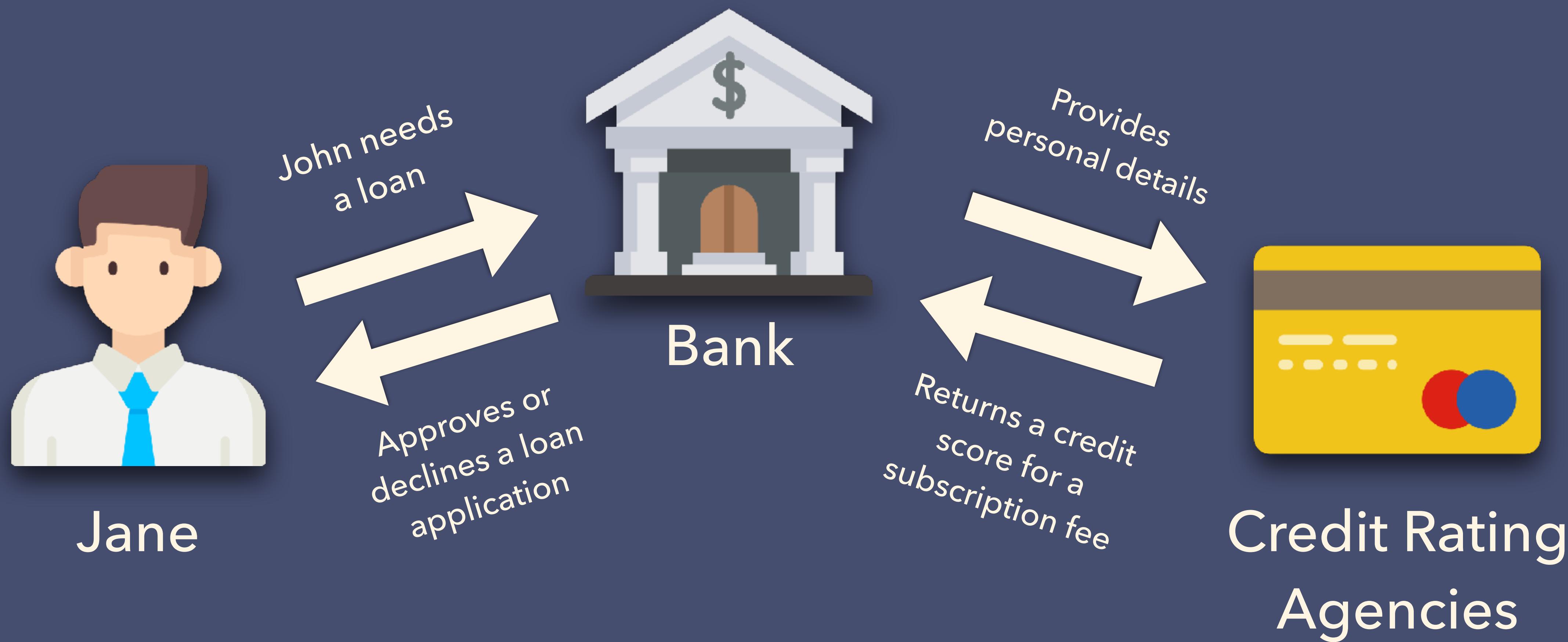


Intelligent Credit
Scoring using
Recurrent Neural
Network



Data Security -
Prime Benefits of
Blockchain

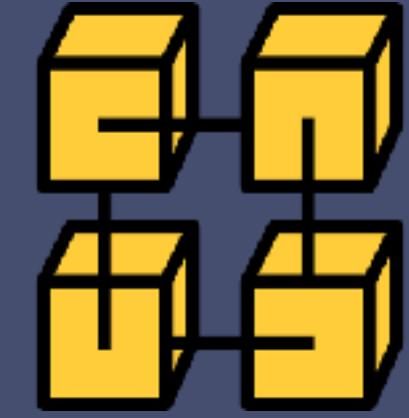
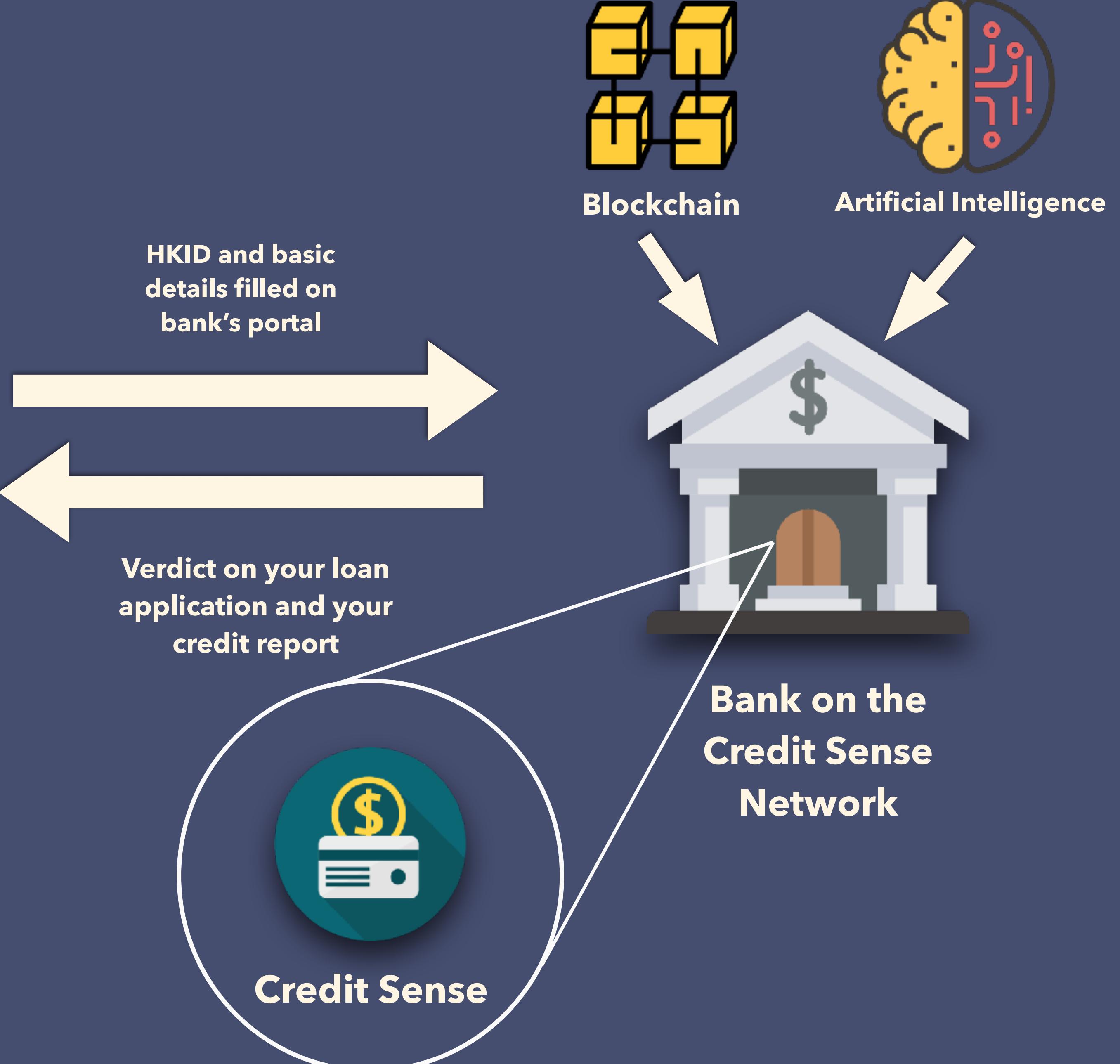
Traditional System



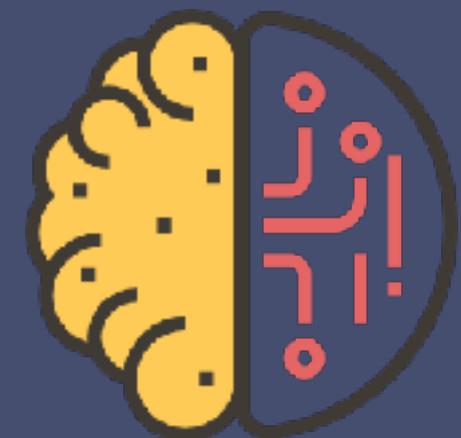
Our Idea



Loan Applicants



Blockchain



Artificial Intelligence



Bank on the
Credit Sense
Network

let's
get
technical

1. blockchain as backend
2. machine learning
3. easy-to-use **frontend**

Links



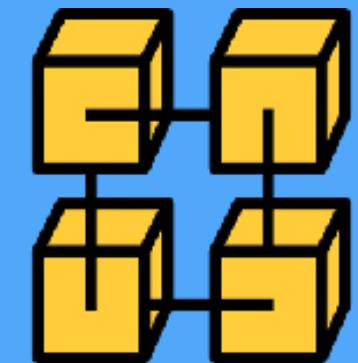
Contoso Bank Node:

contosobank.southeastasia.cloudapp.azure.com/bank/



Wood Grove Bank Node:

woodgrovebank.southeastasia.cloudapp.azure.com/bank/



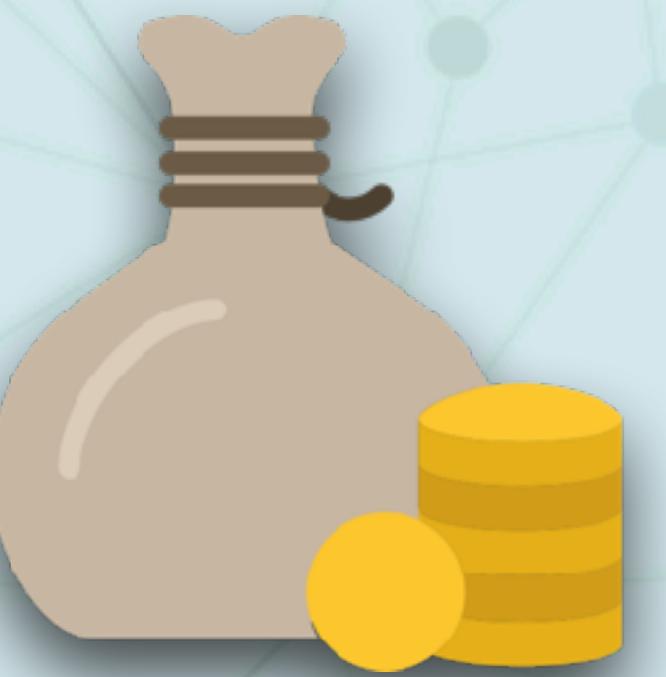
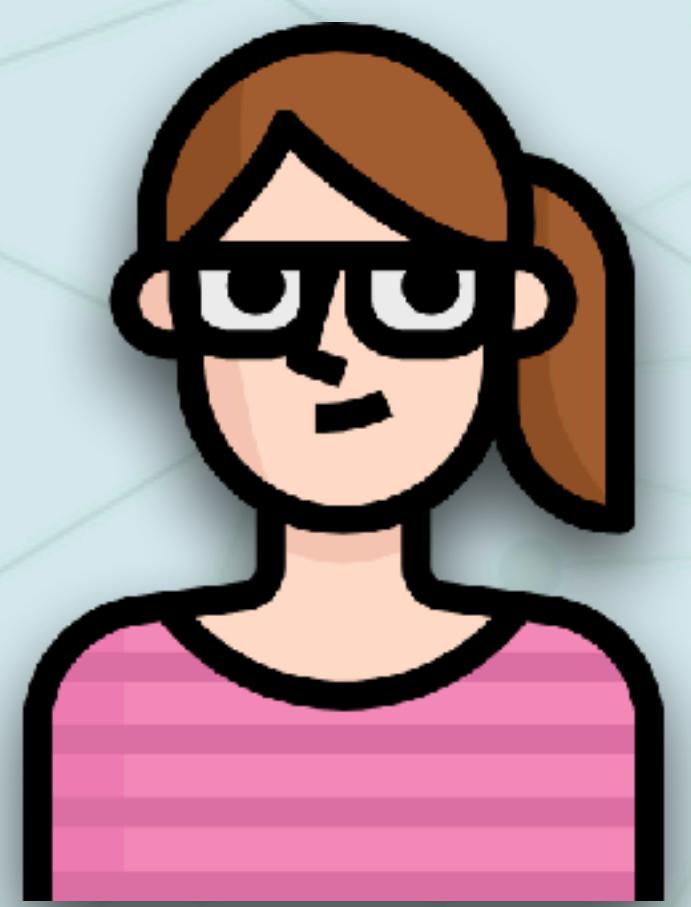
CreditSense Blockchain Explorer

explorecreditsense.southeastasia.cloudapp.azure.com/chains



Source Code

github.com/piy0999/CreditSense

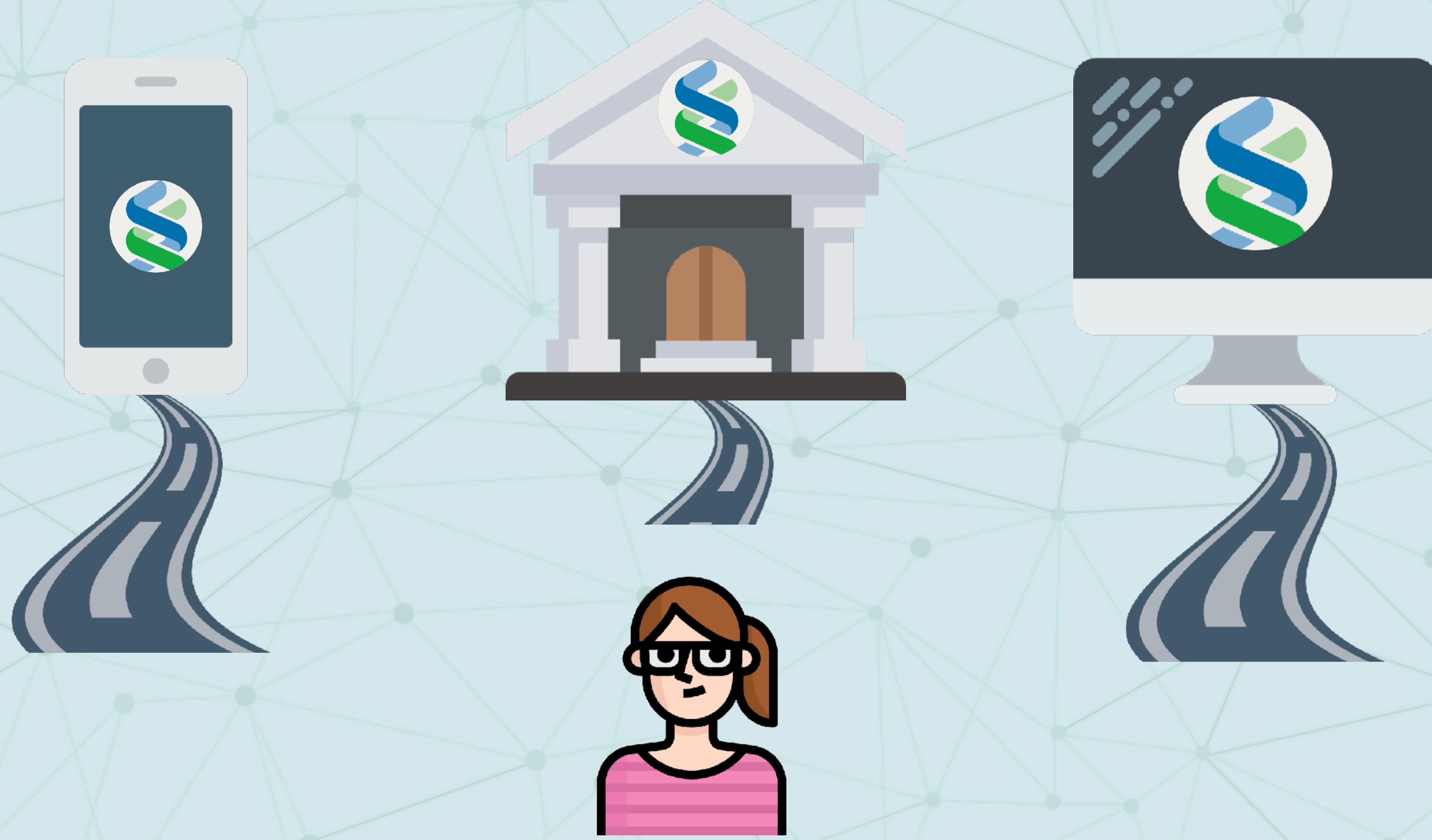


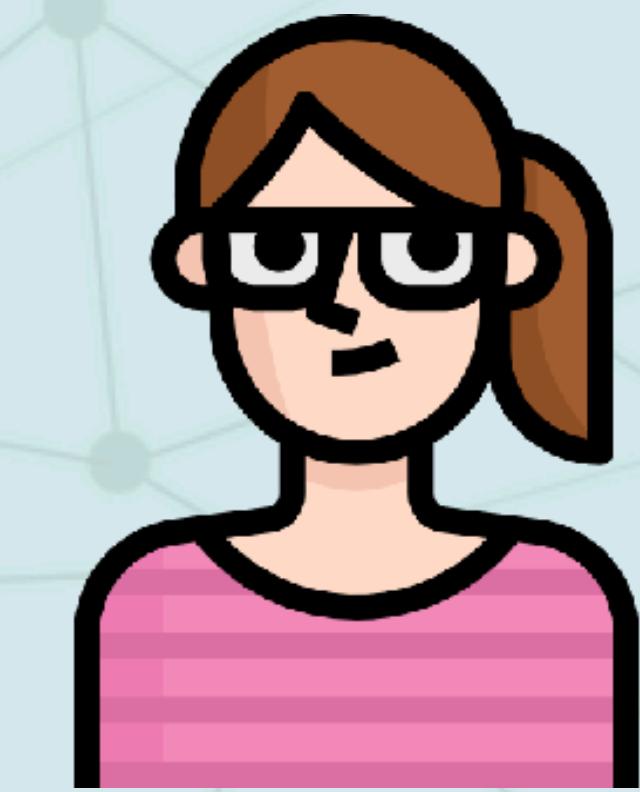
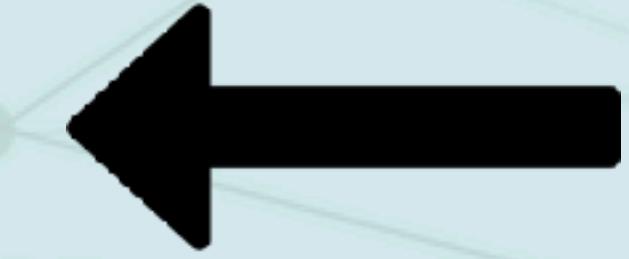
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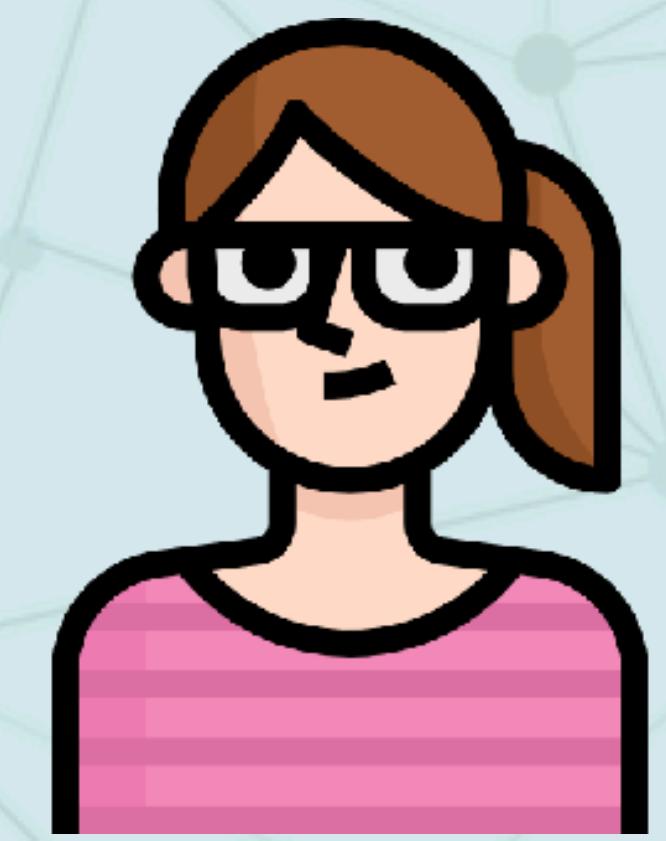
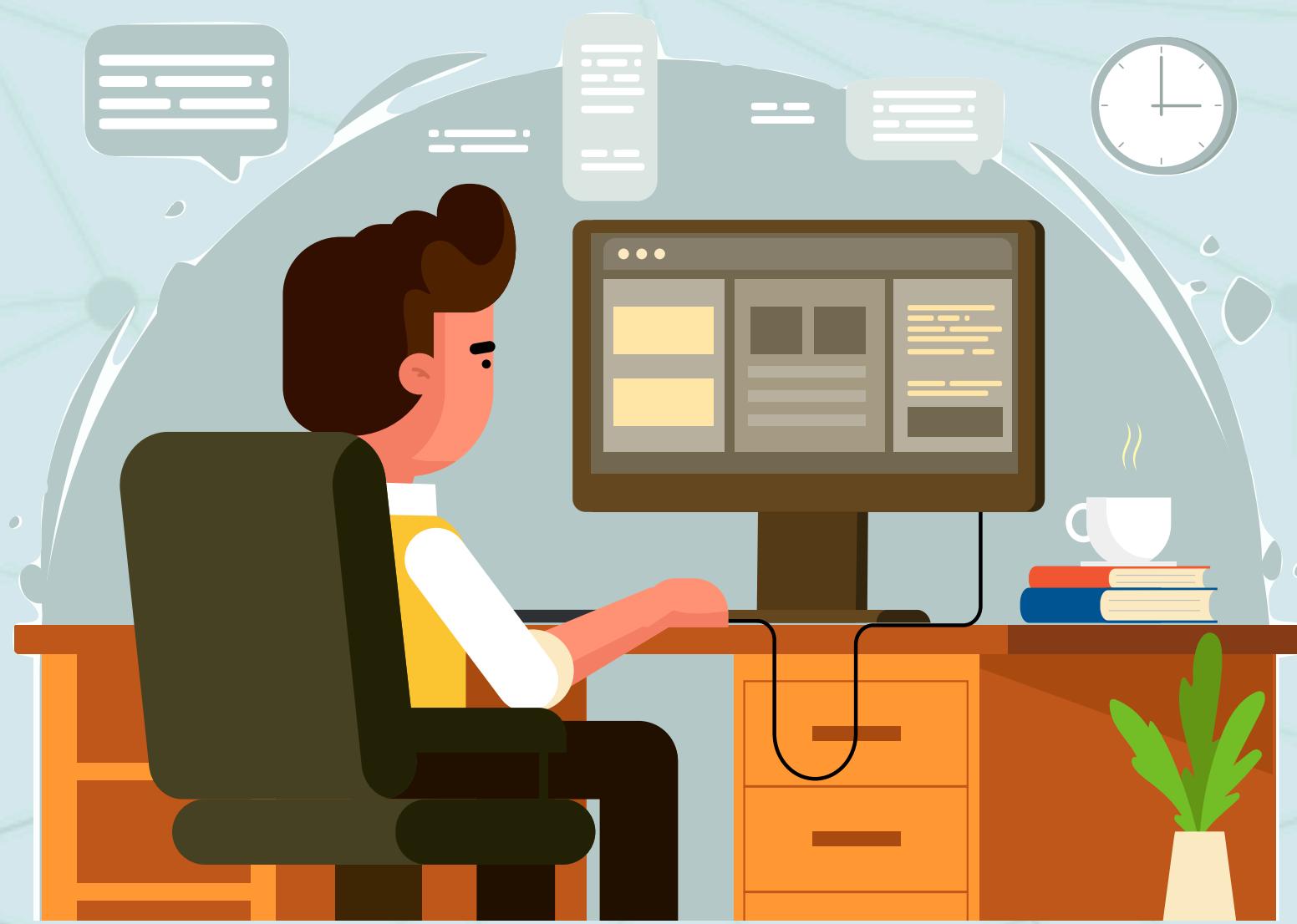


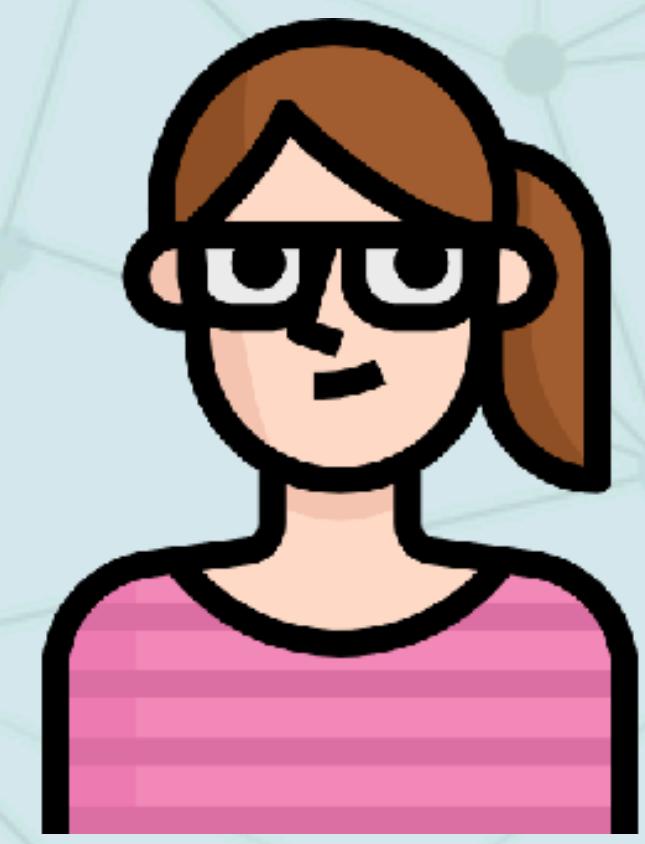
Network

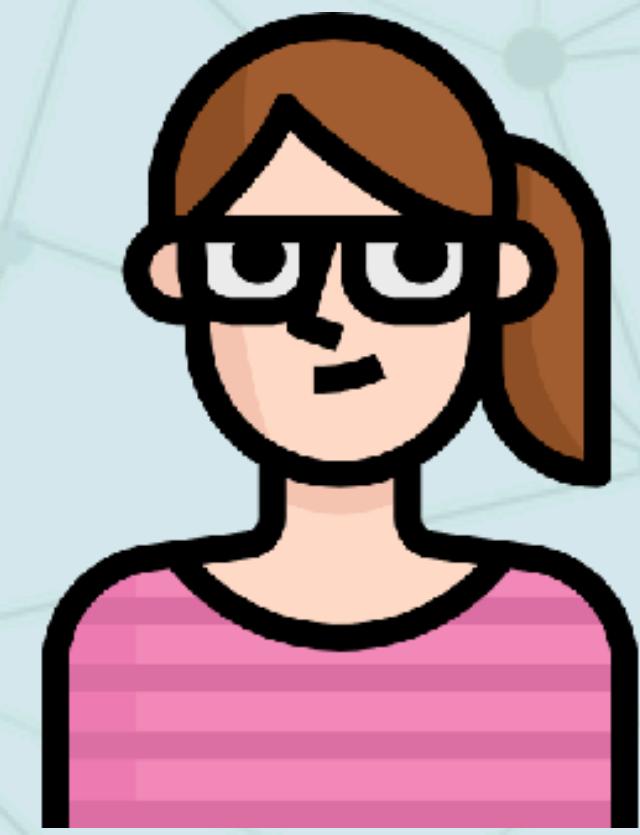
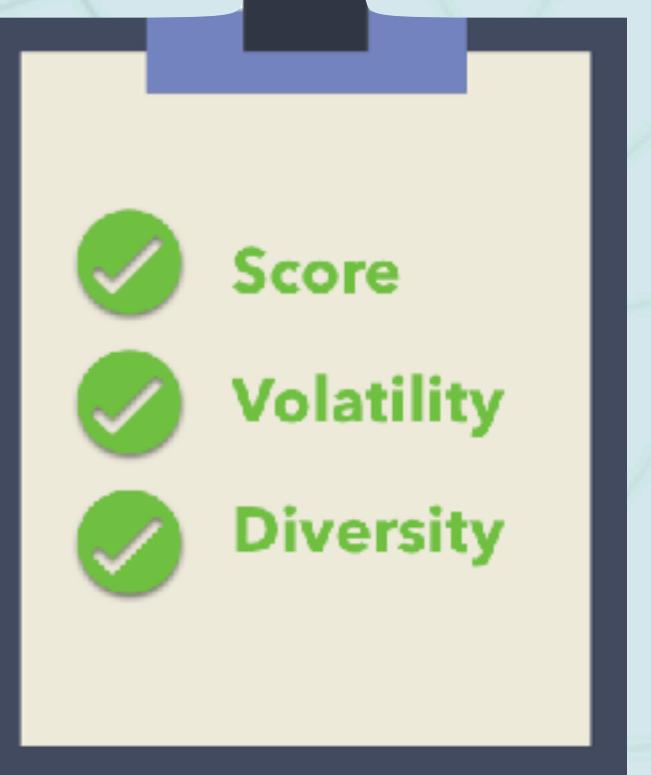
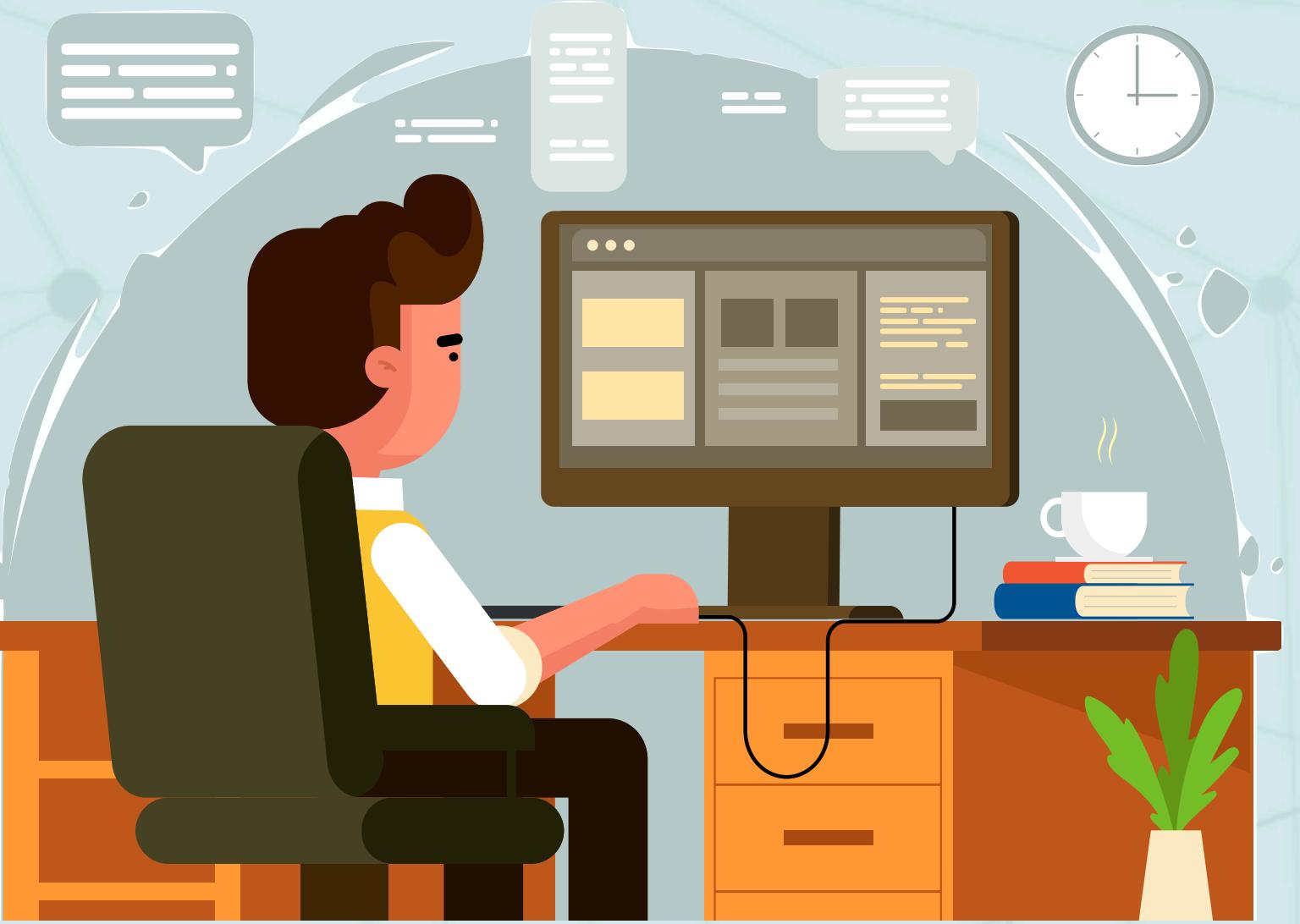
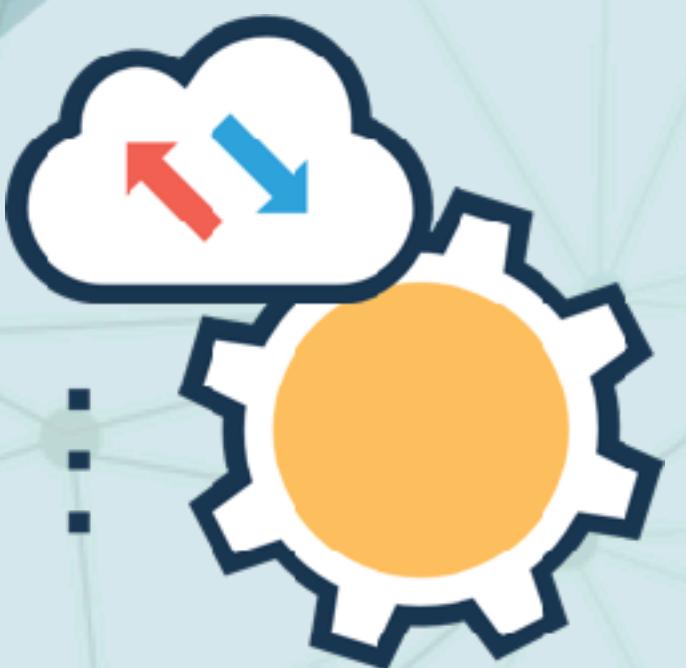
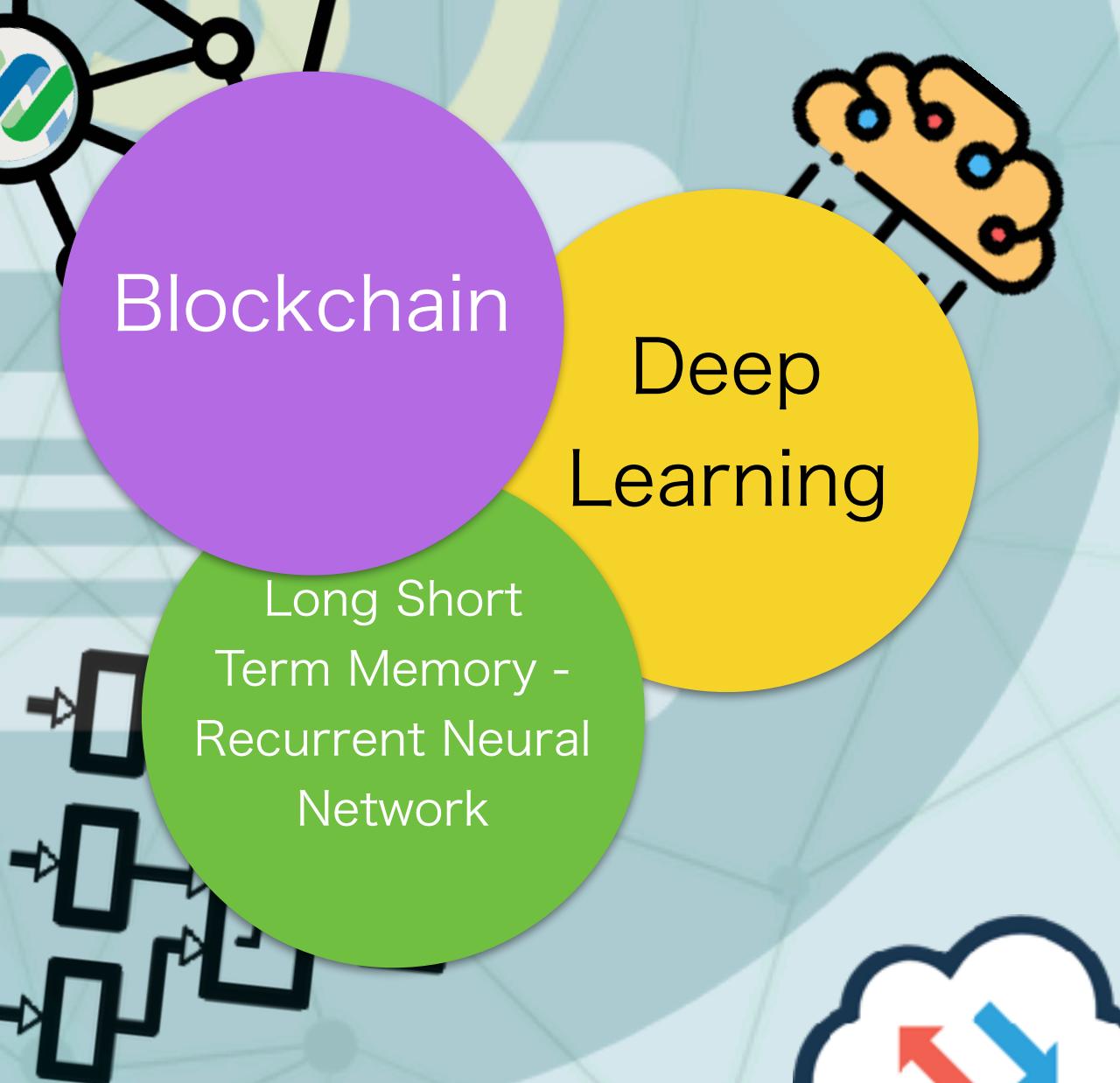












- Instant
- Accurate
- Transparent
- Cheap
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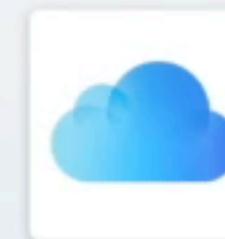
Solve
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Moodle



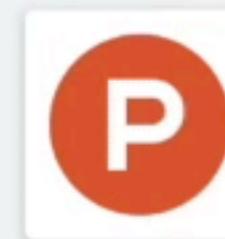
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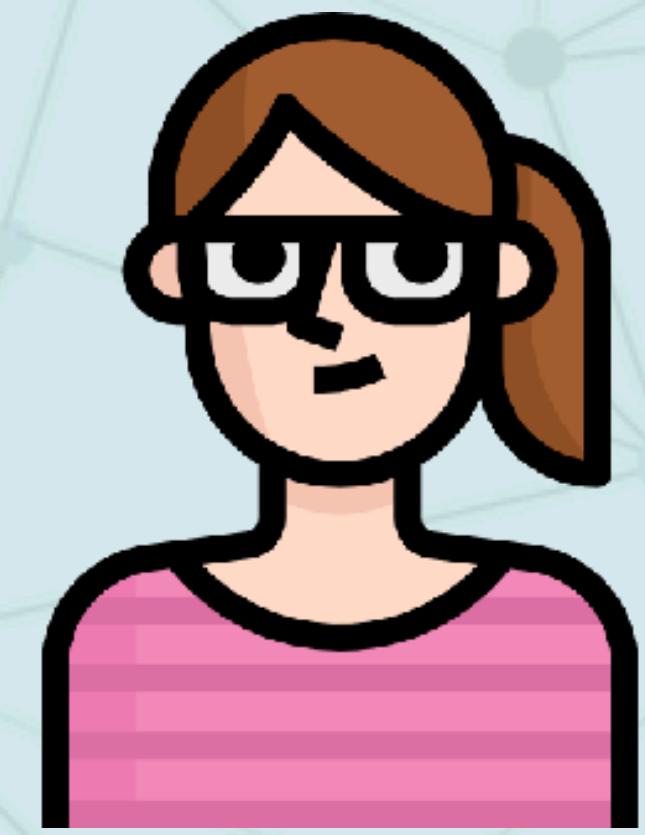
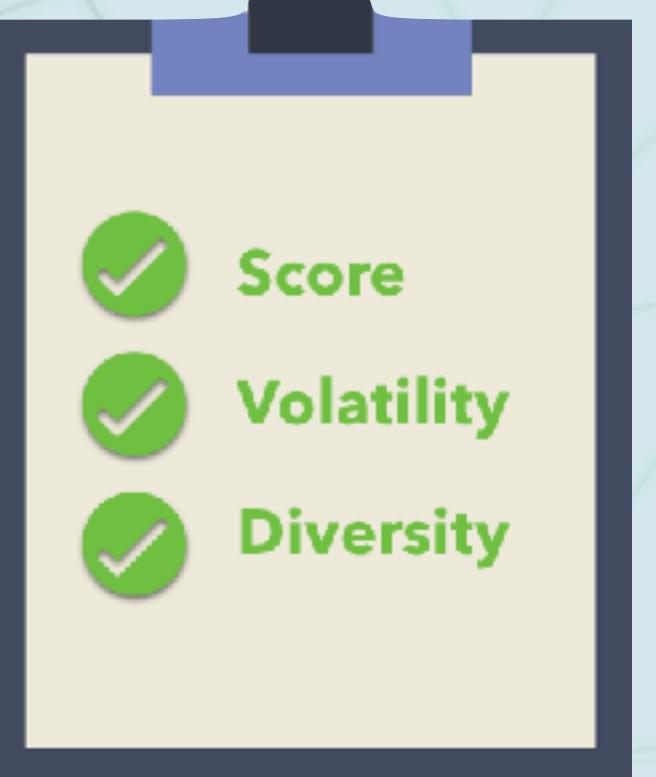
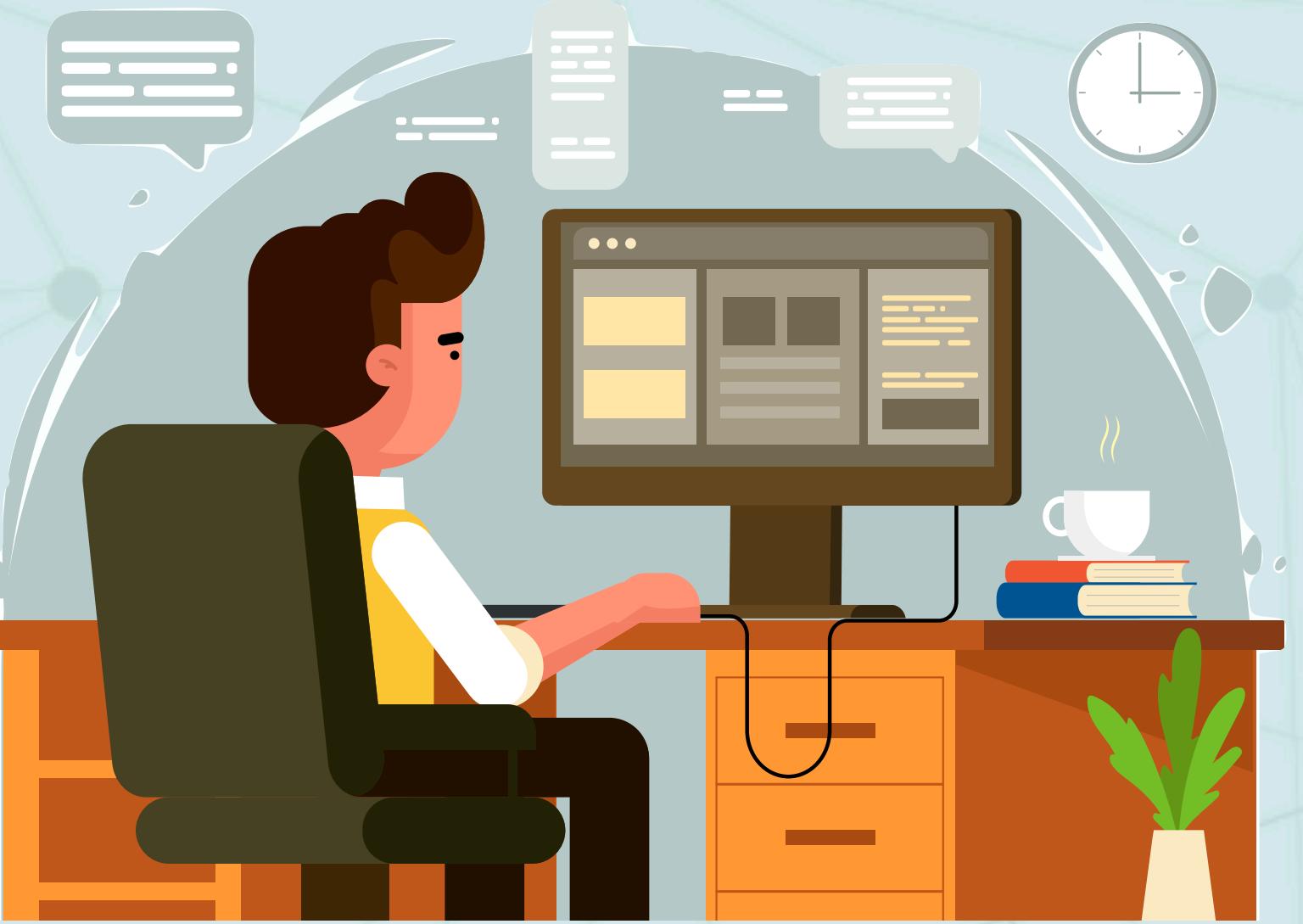
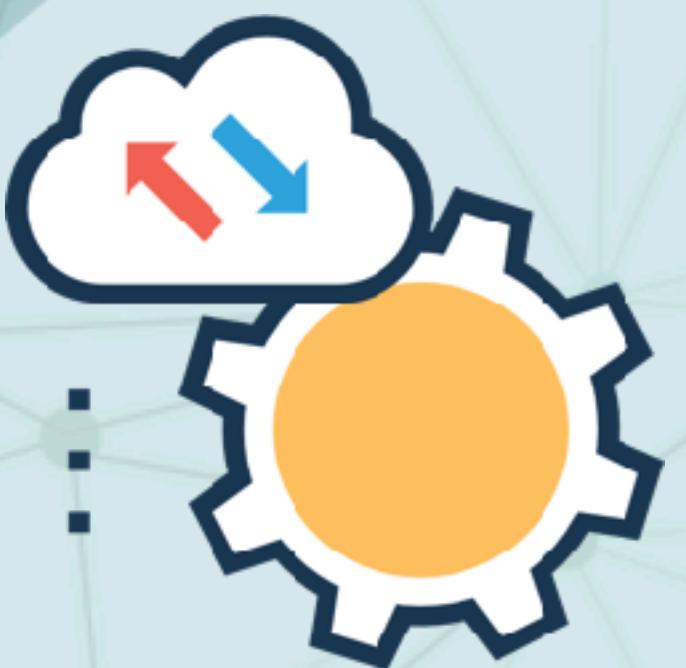
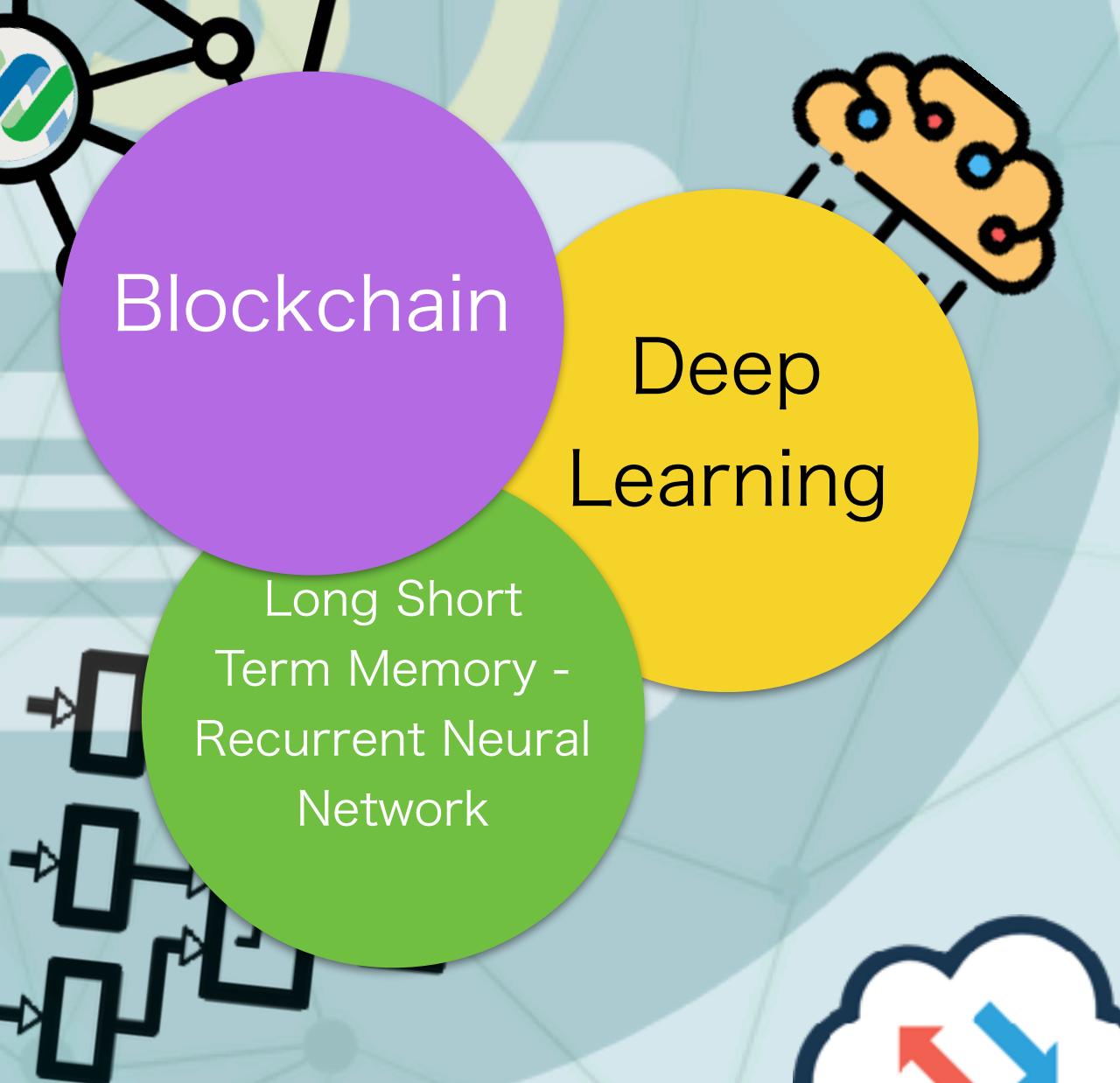
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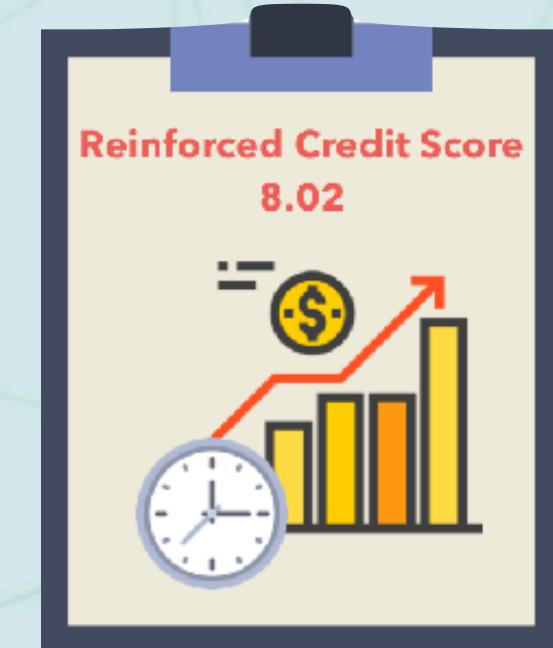
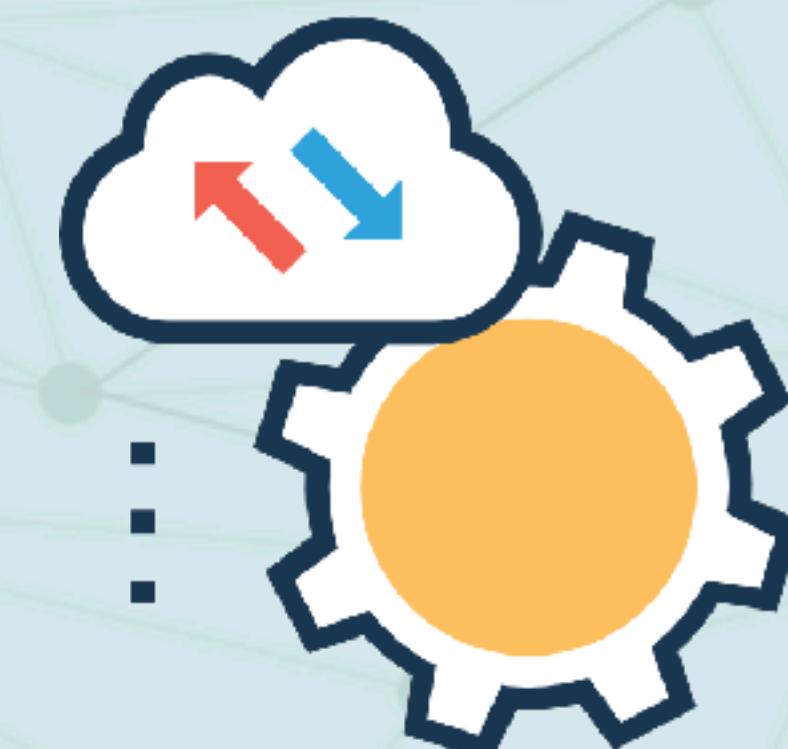
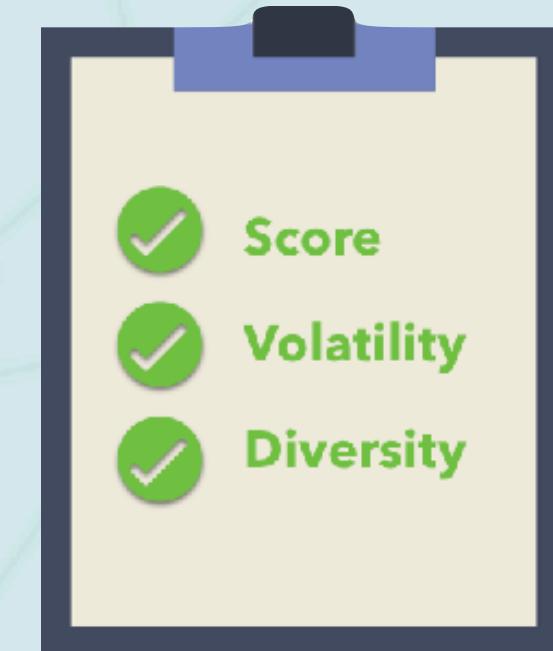
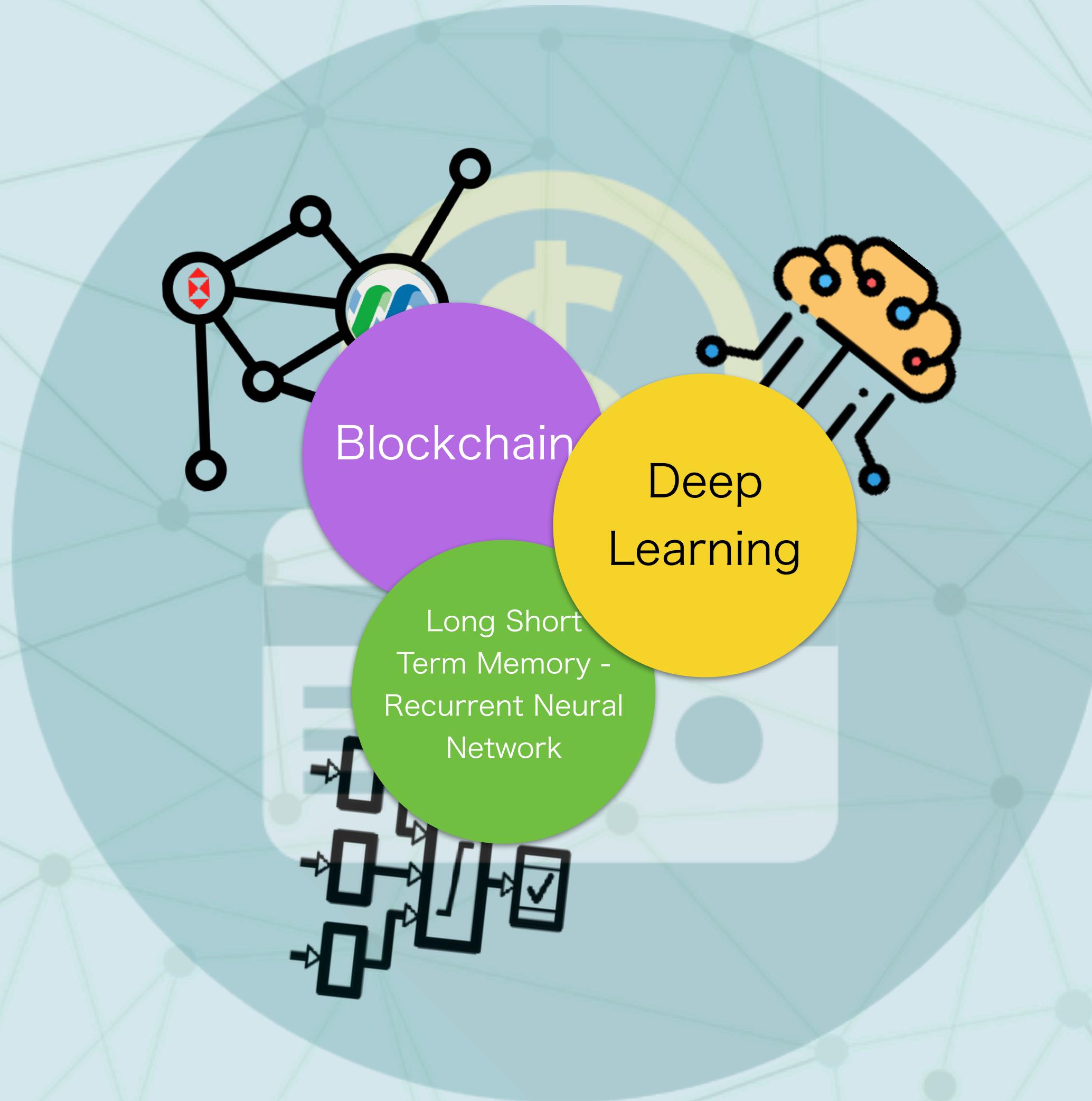
Waqas Ali

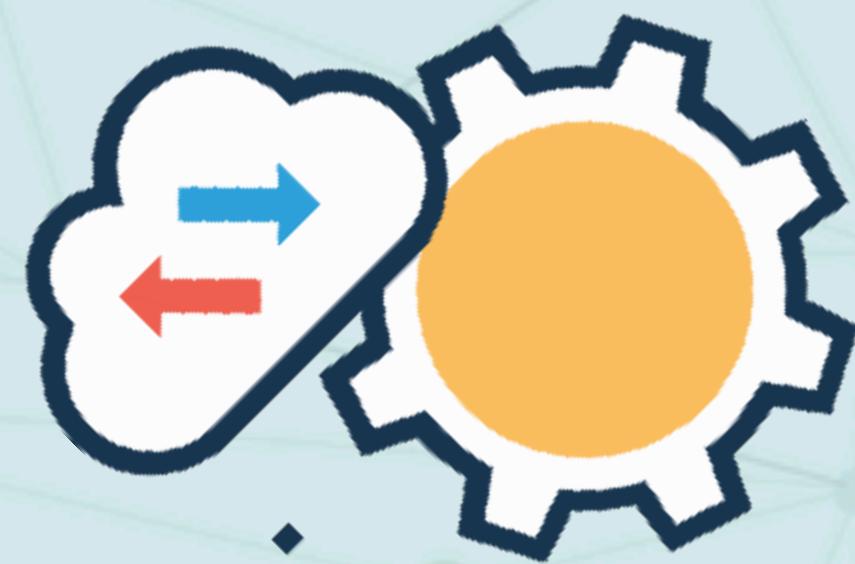
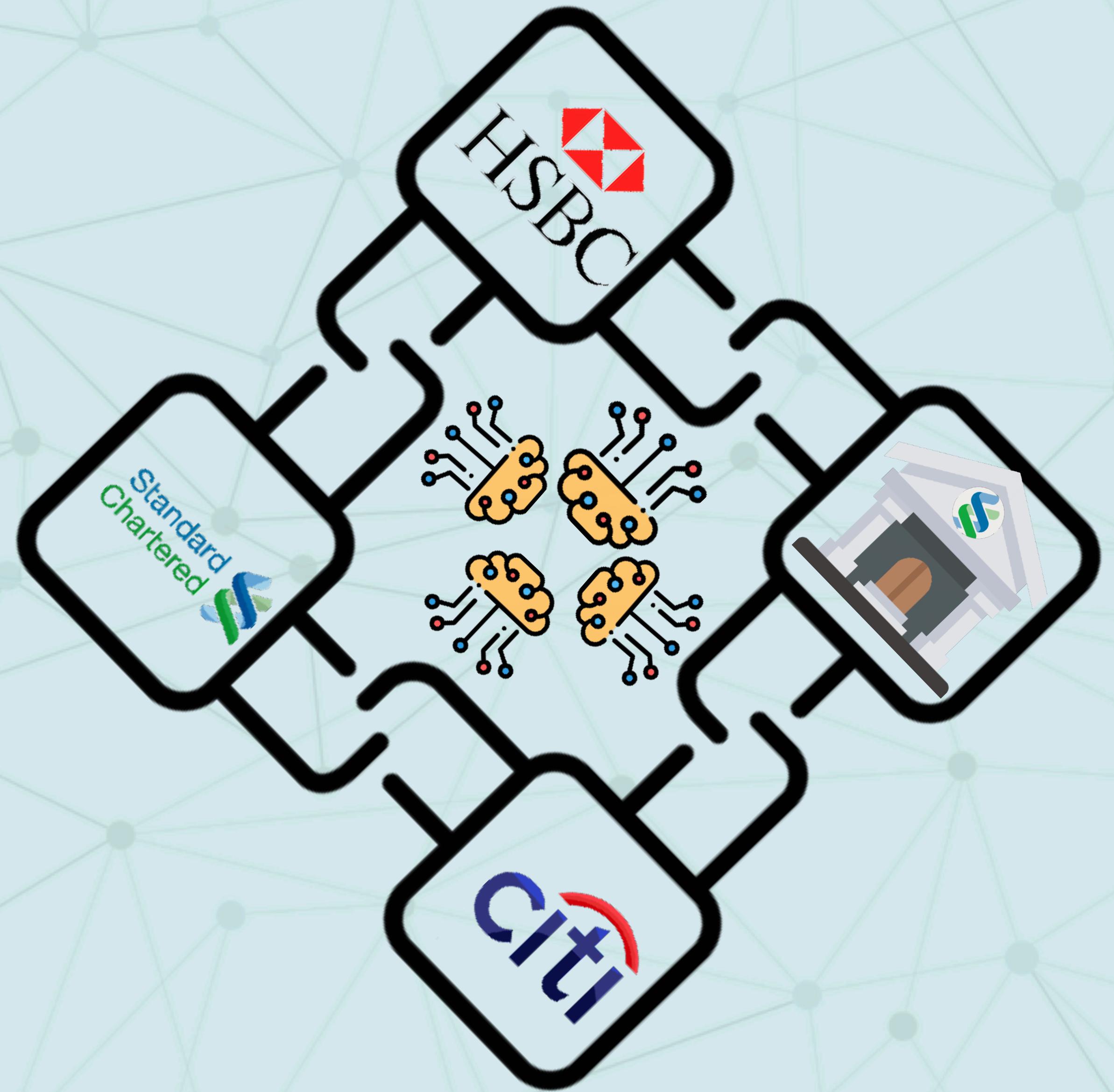


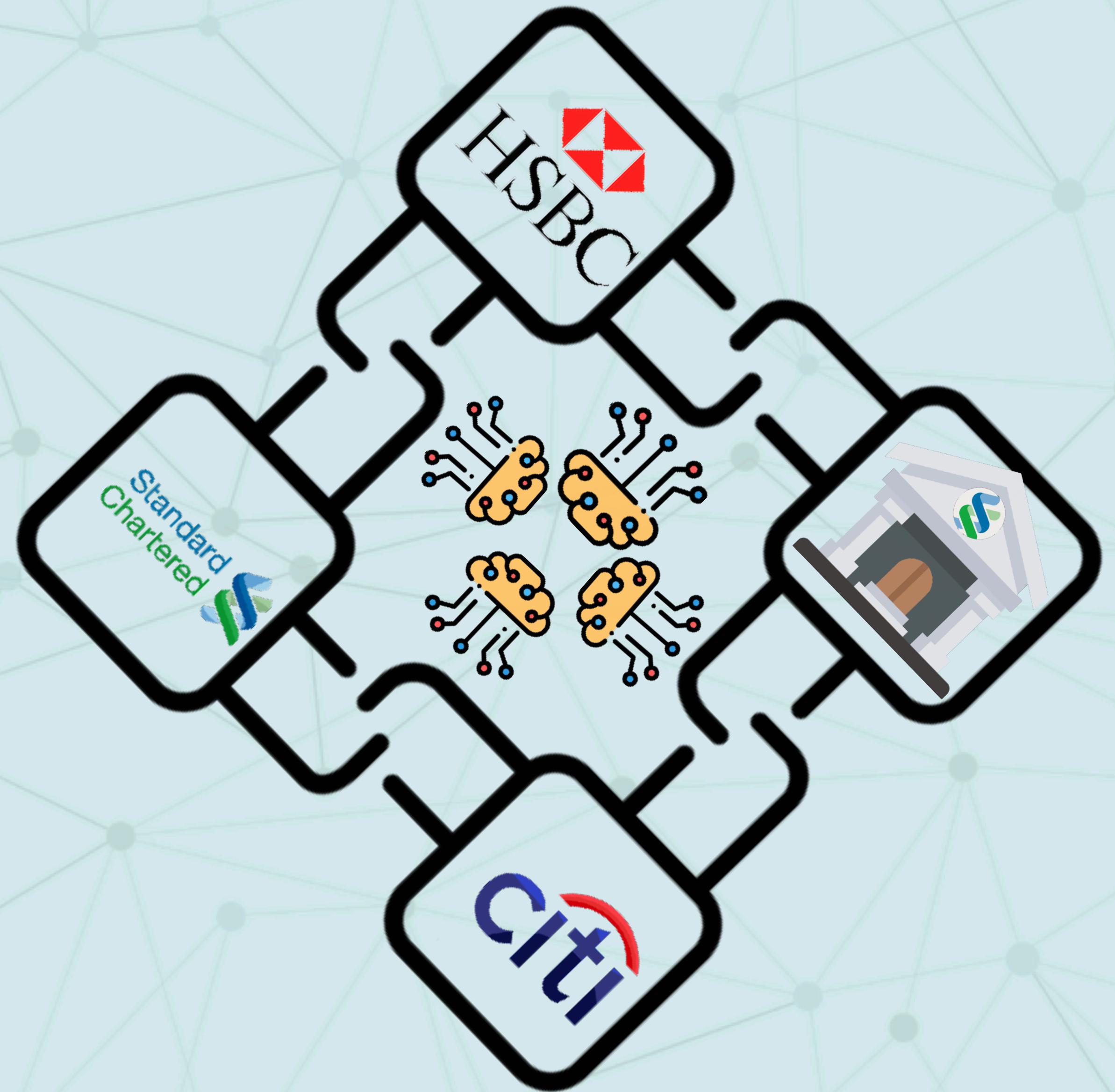
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- Transparent
- Cheap
- Secure

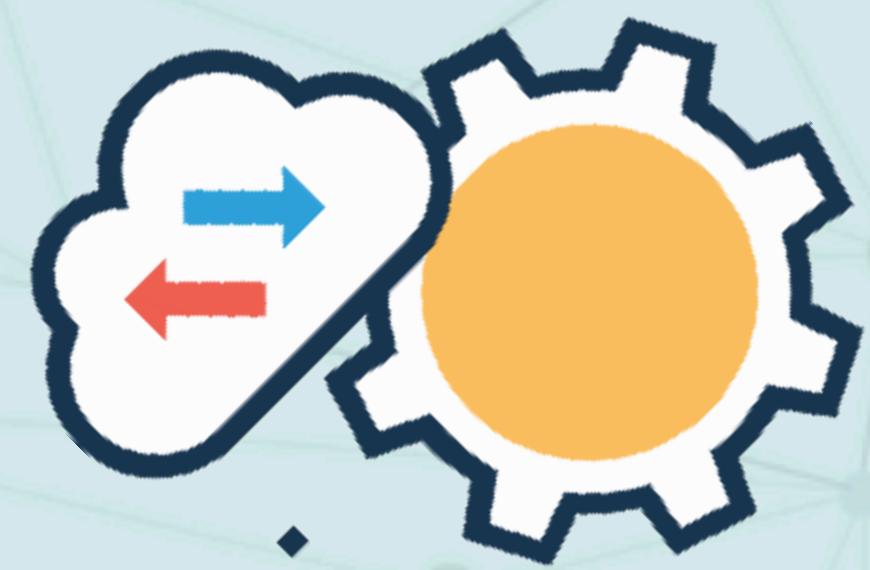






	Distributed Database	Public Blockchain	Private Blockchain	Consortium Blockchain
Governance	Centralized	Consensus of Public	Centralized	Consensus of Nodes
Transparency				
Identity		Anonymous	Known	Known
Currency				
Data Storage	Database	Blockchain	Blockchain	Blockchain
Data Mechanism	Client-Server	Peer-to-Peer	Peer-to-Peer	Peer-to-Peer







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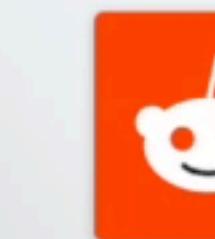
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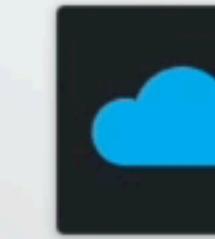
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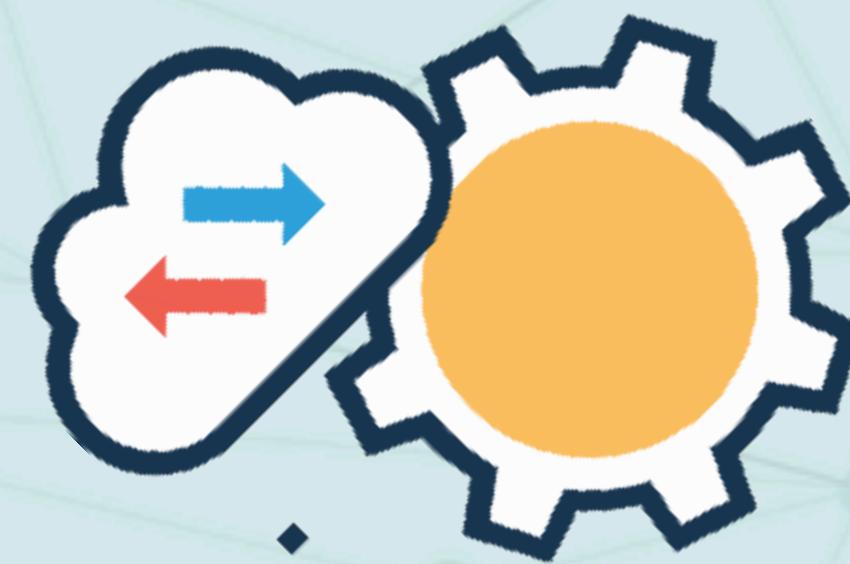
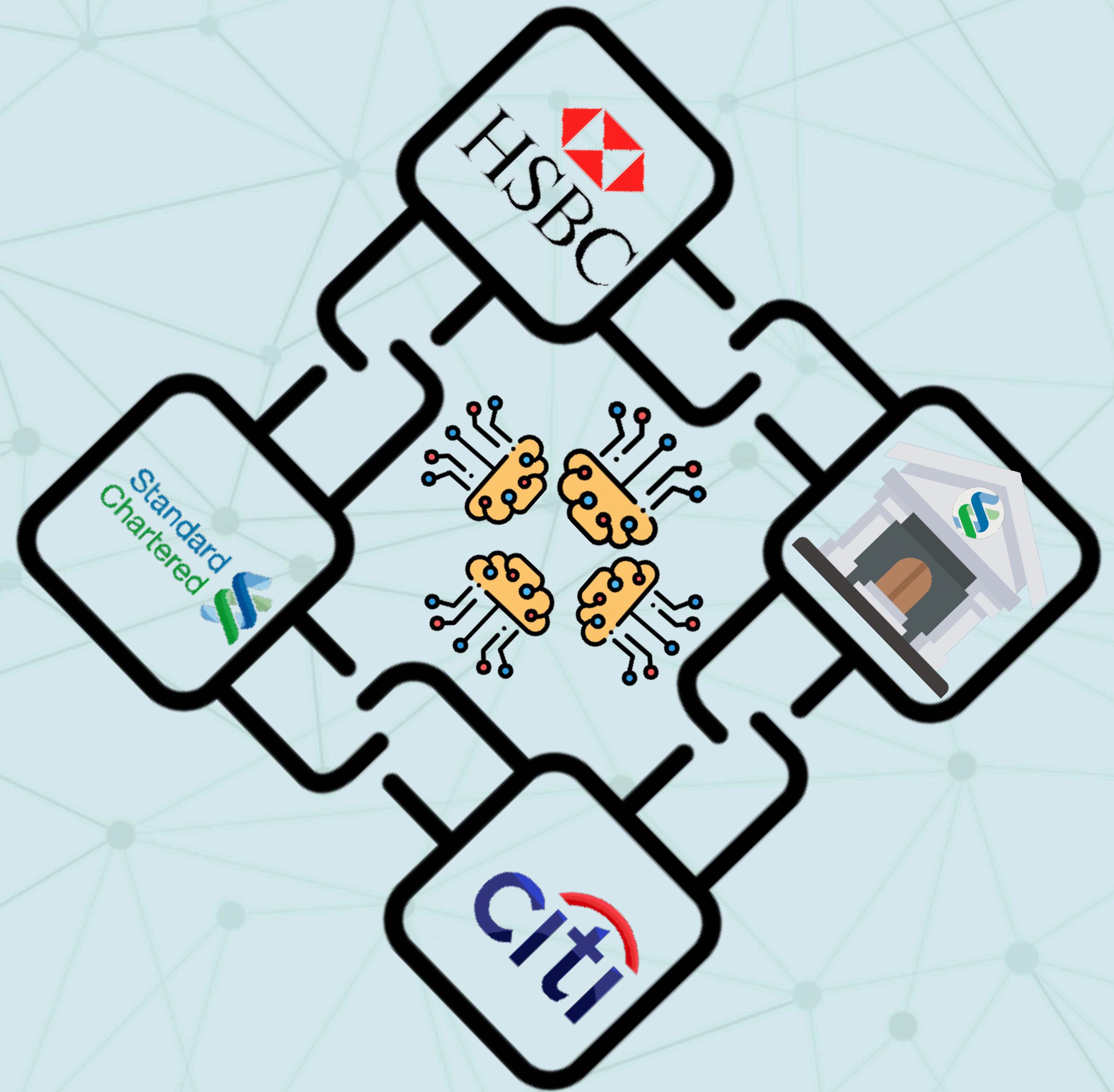
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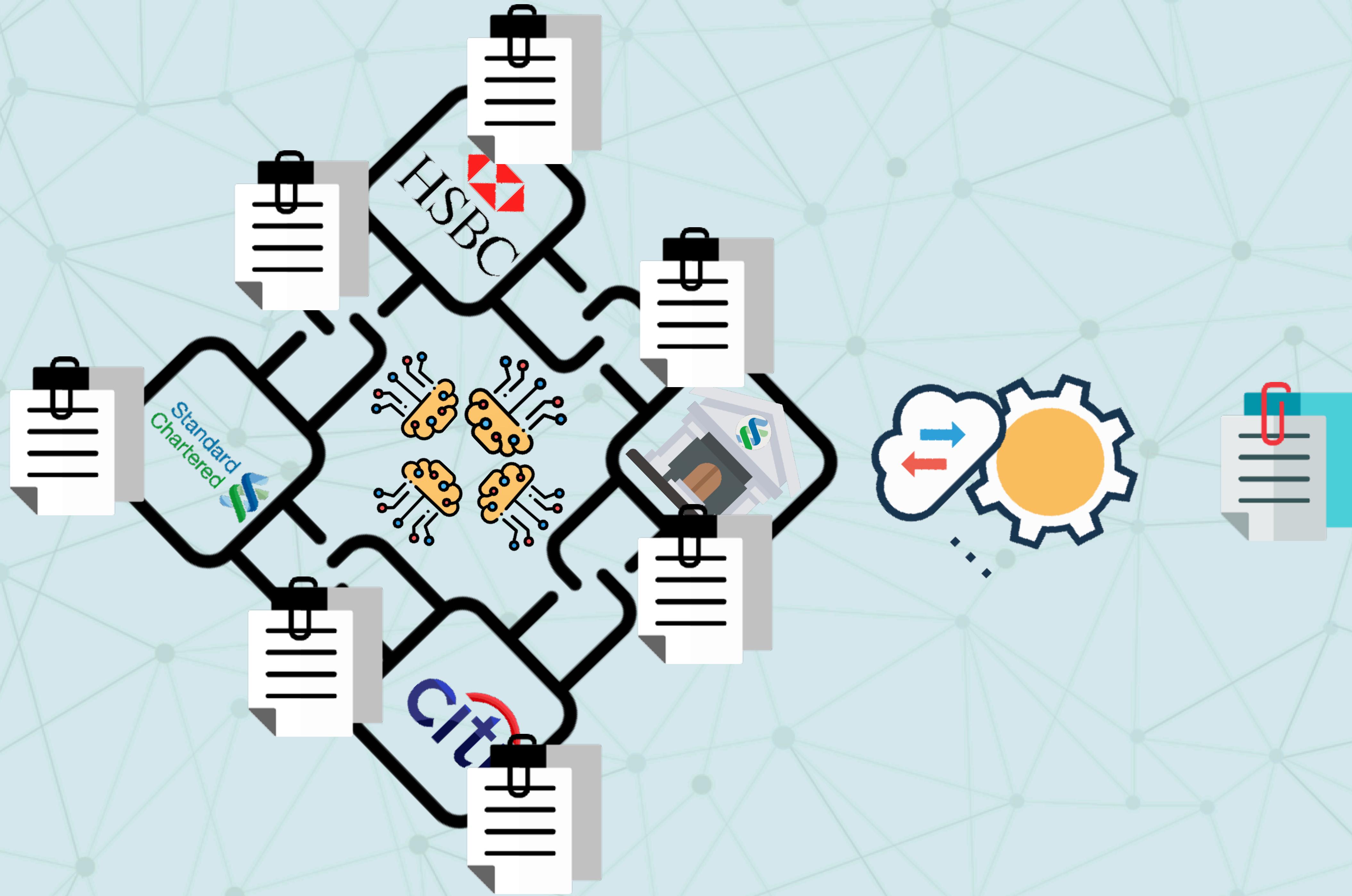


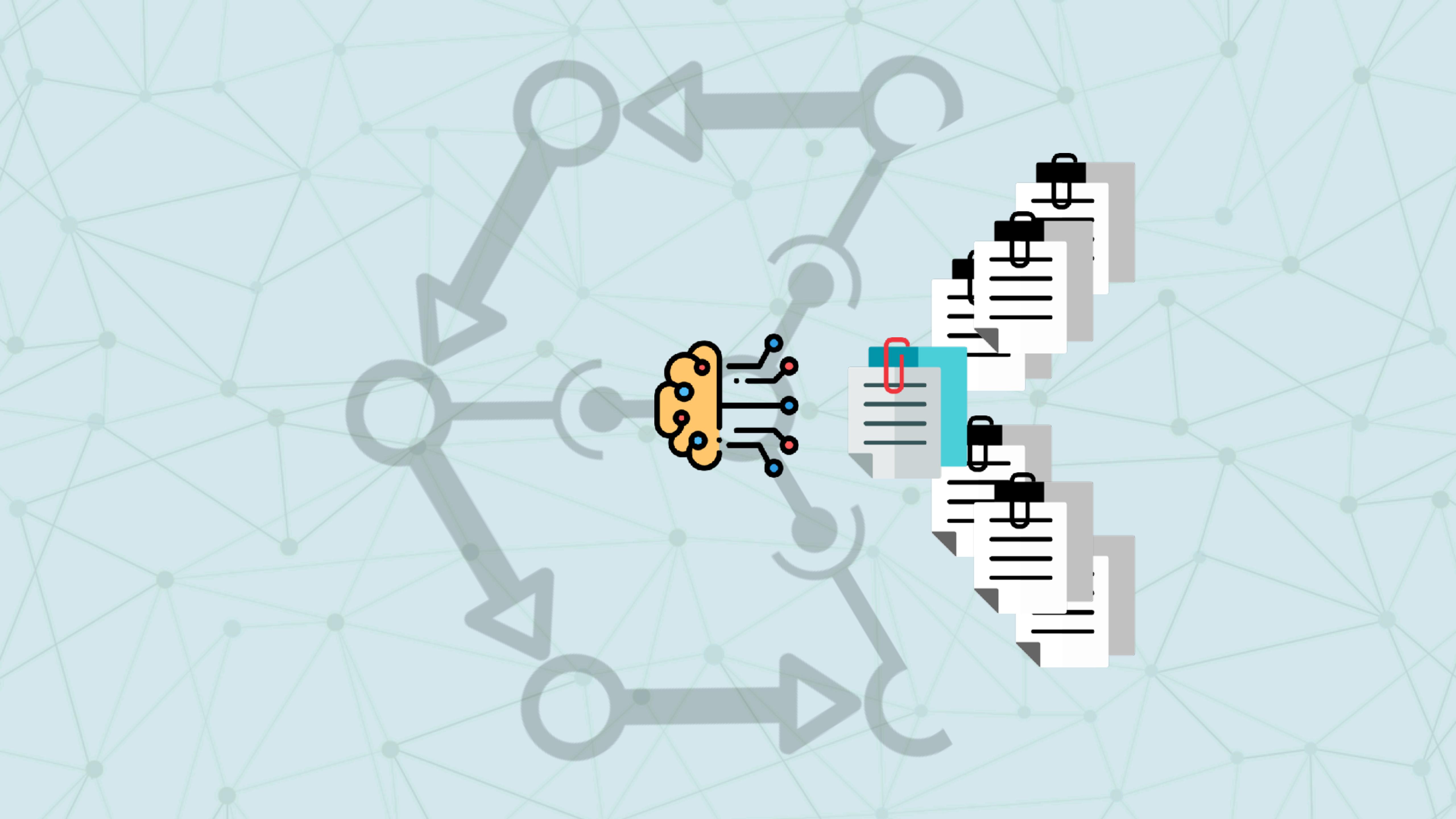
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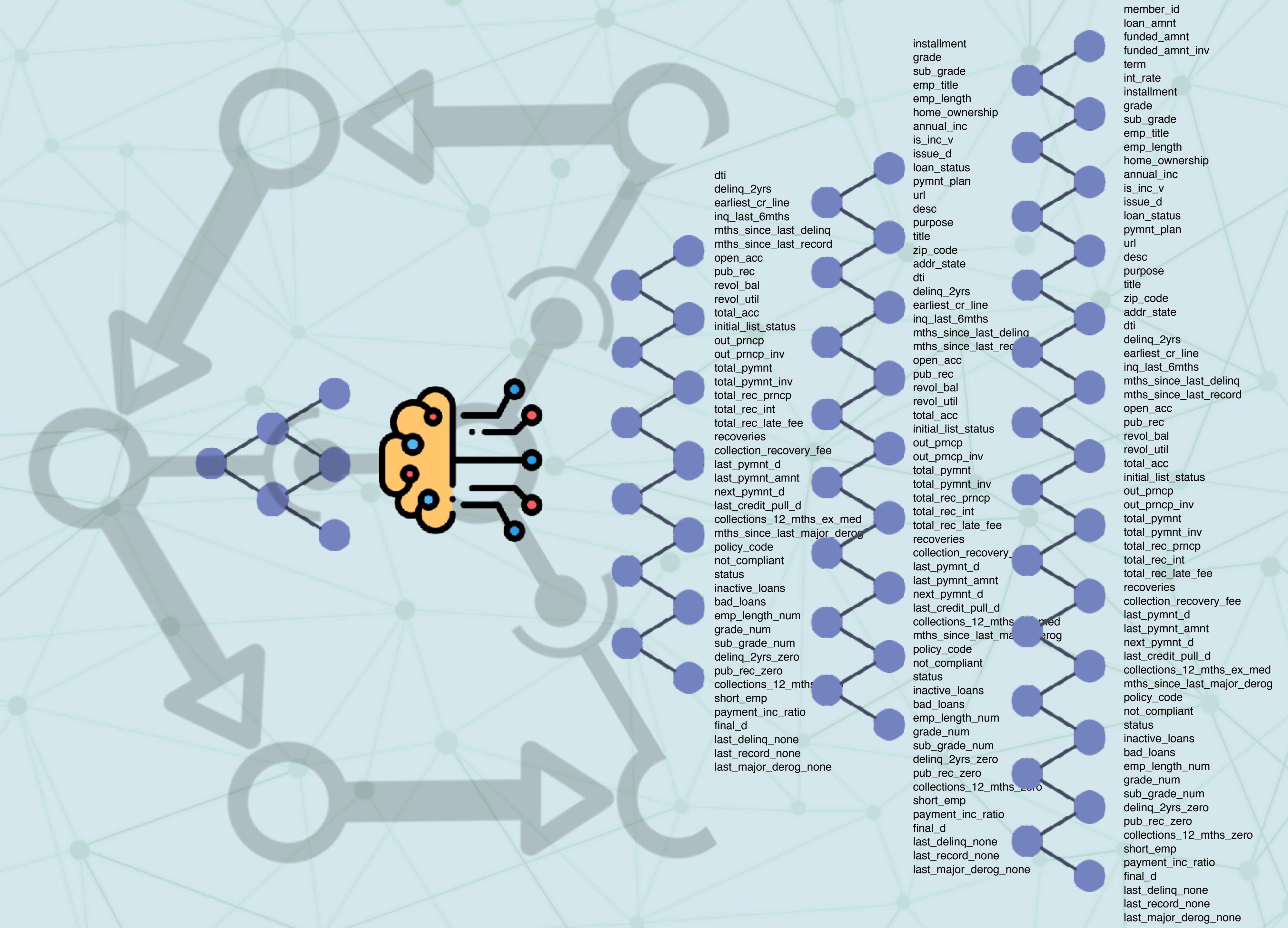
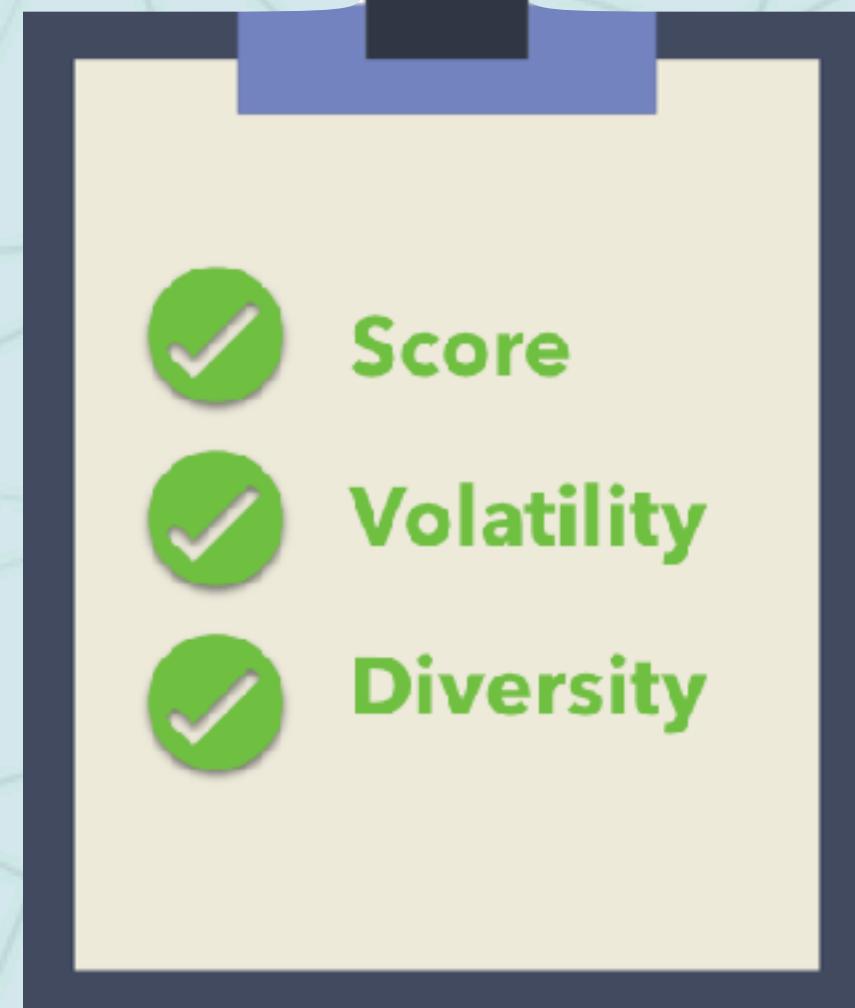


Dashboard -
Microsoft Azure



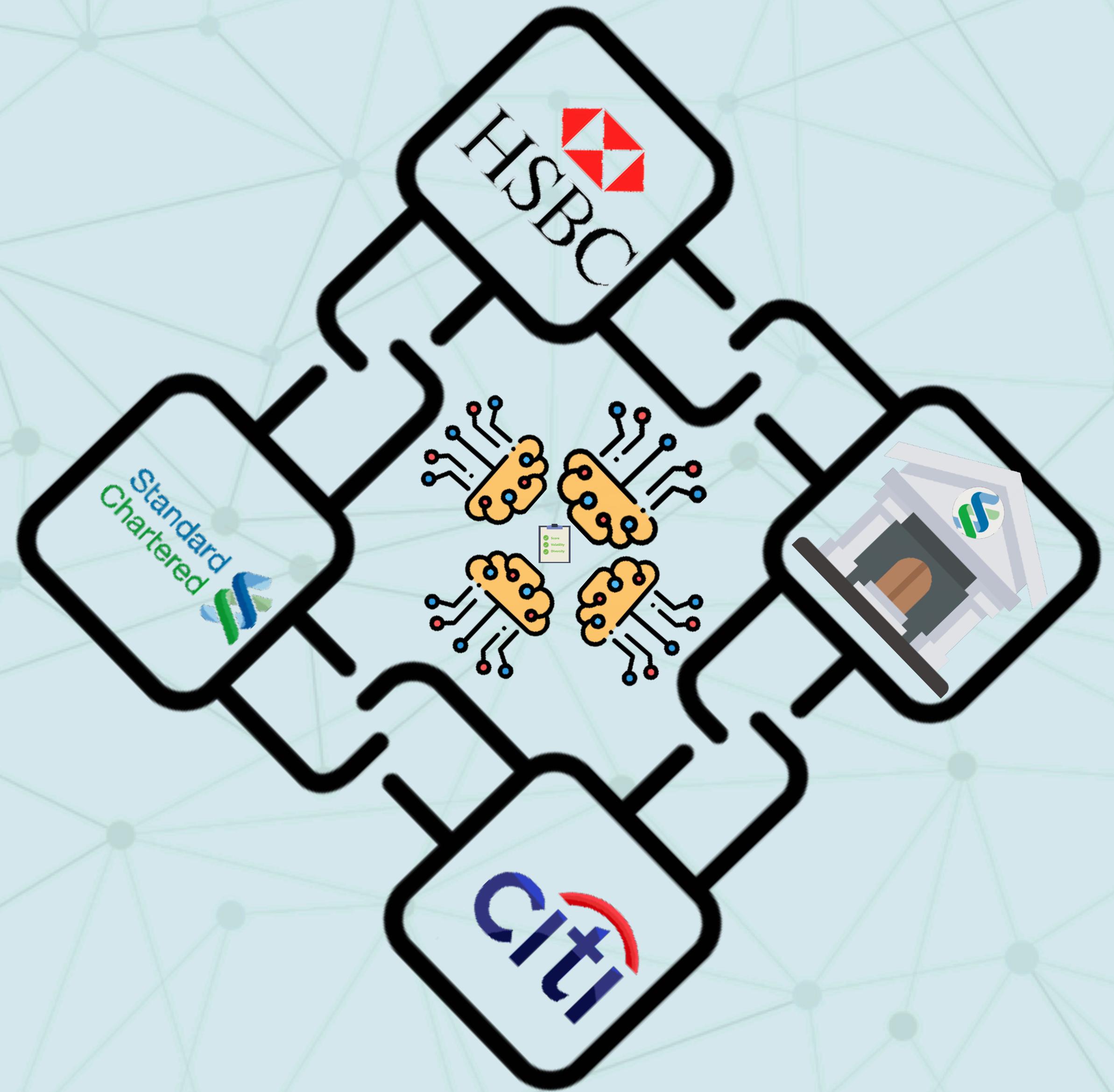


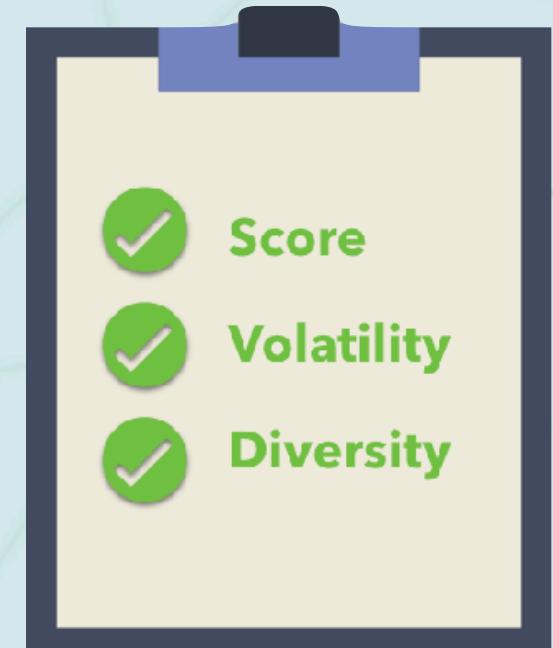
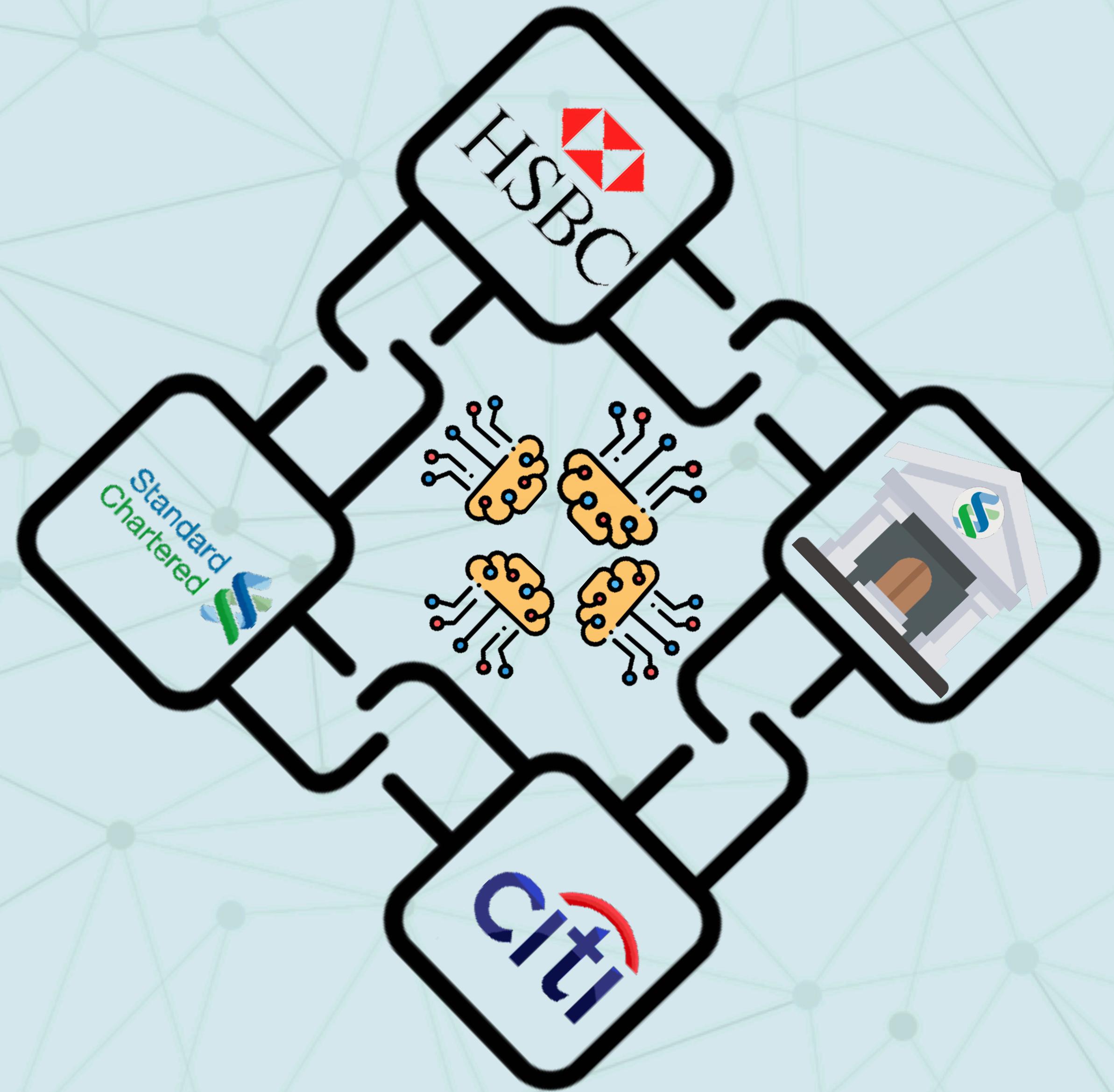


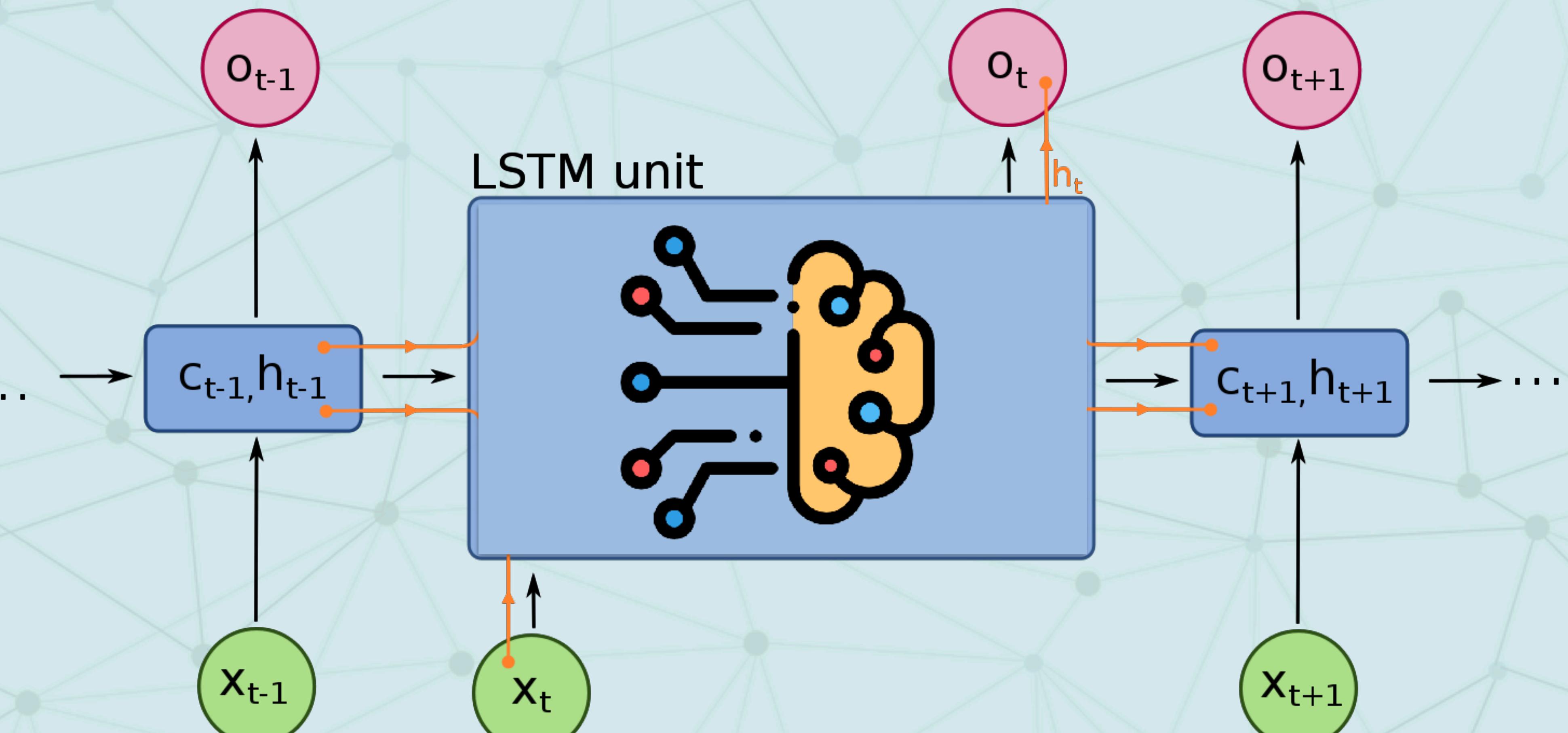
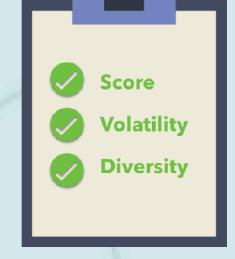
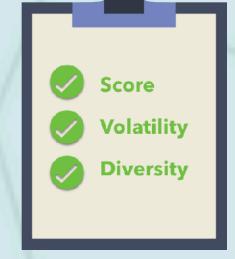
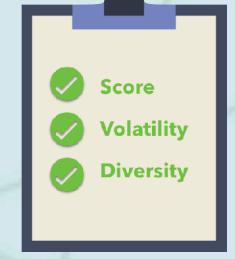
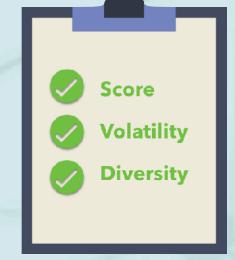
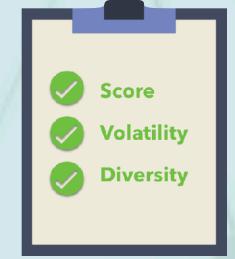


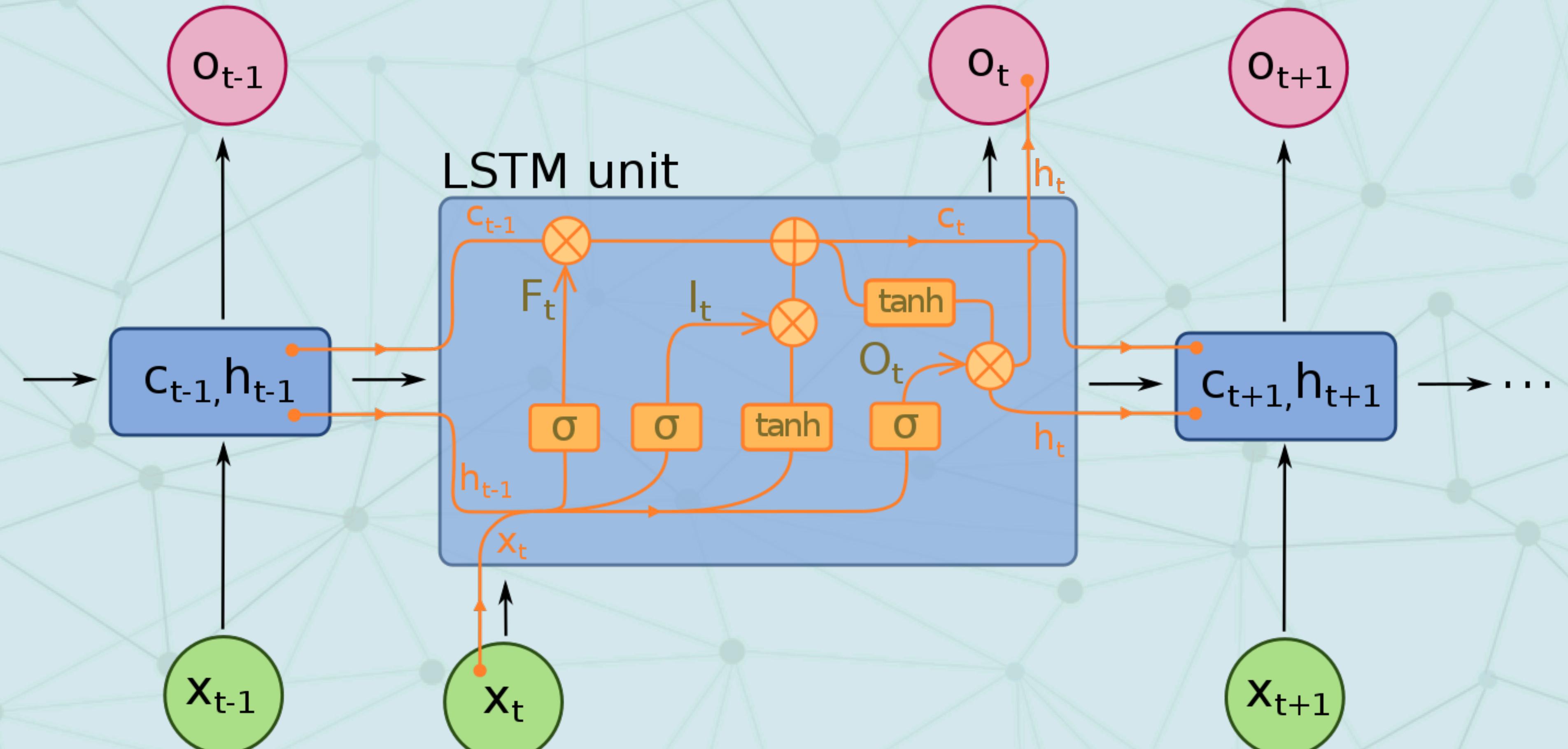
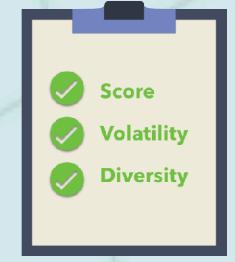
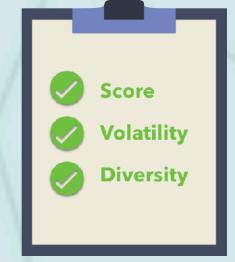
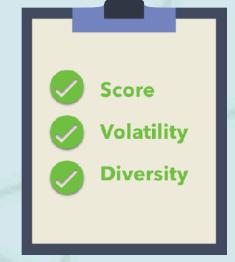
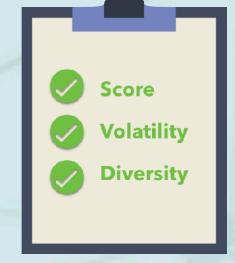
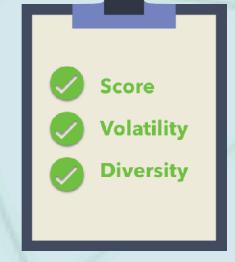
Credit Sense — 

((creditsense) Taruns-MacBook-Pro:Credit Sense Tarun\$ |

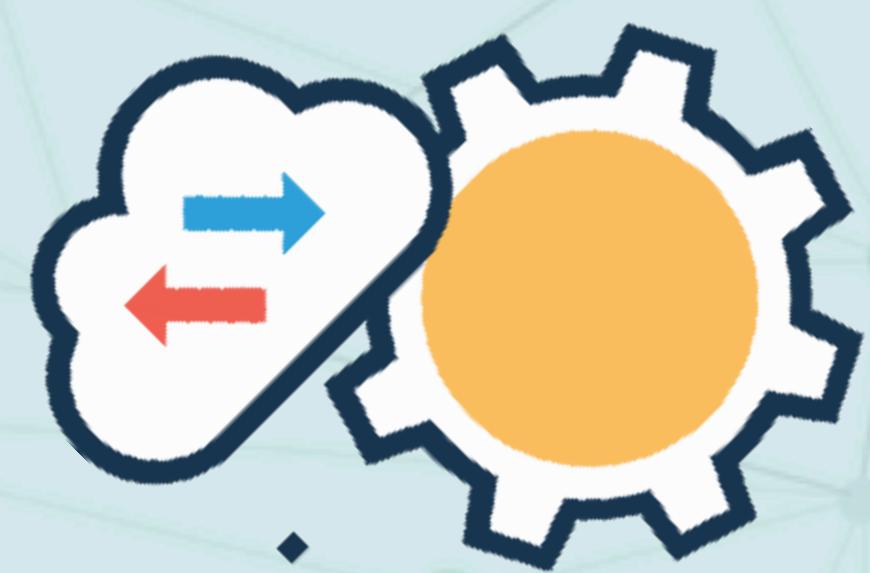
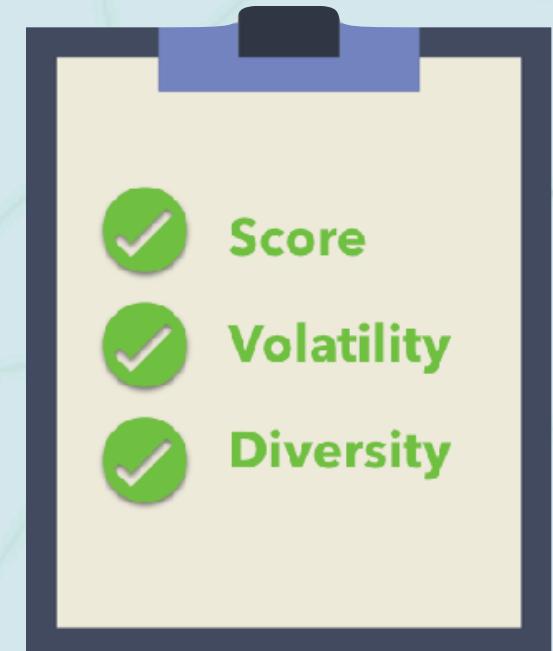
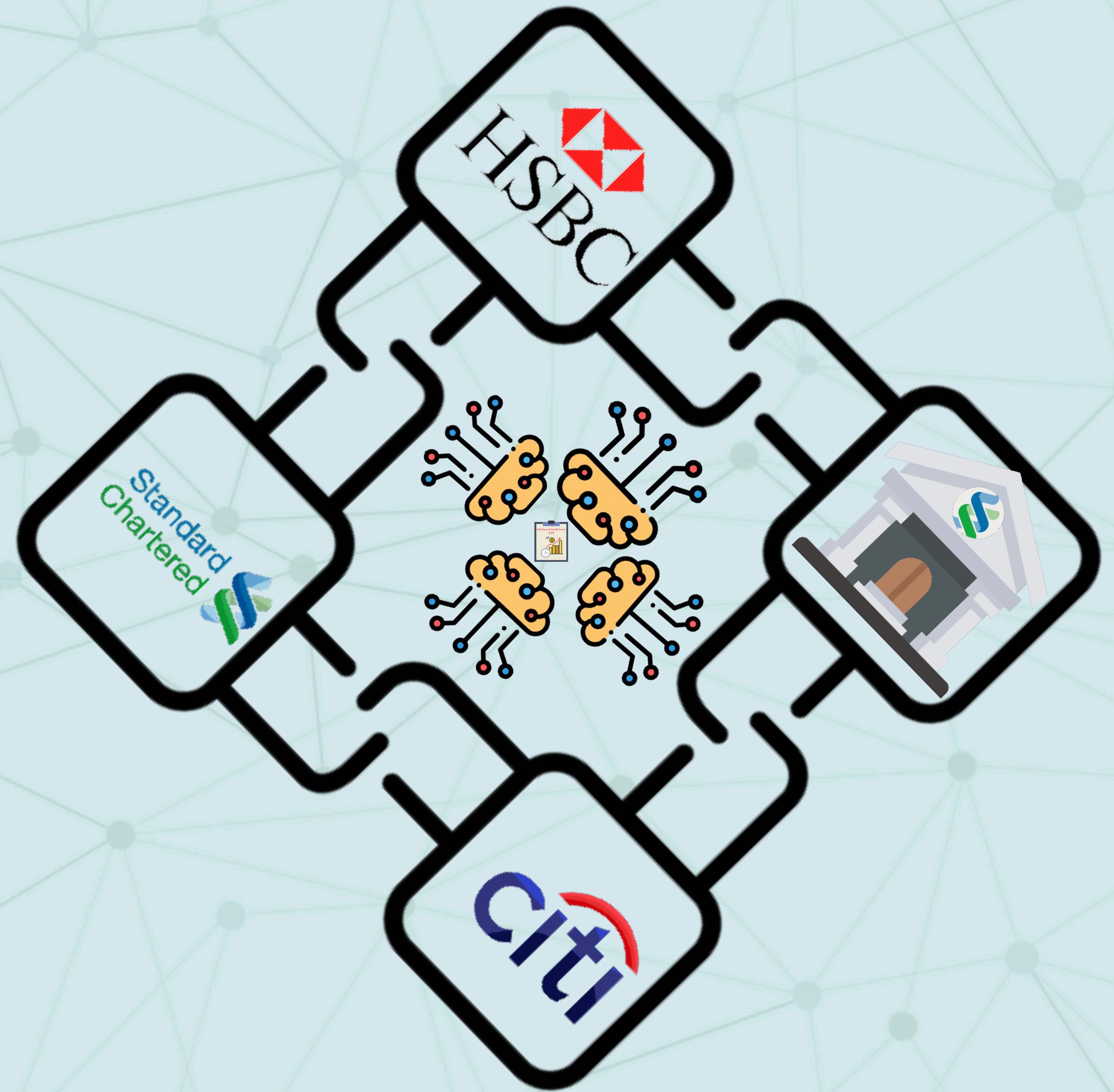


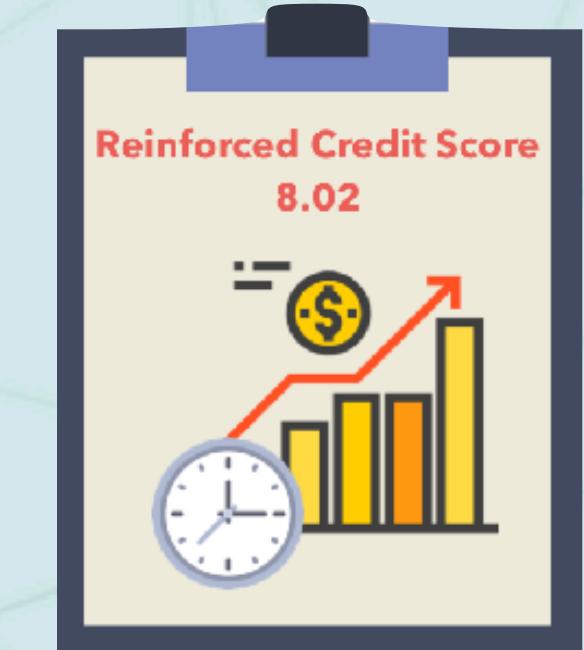
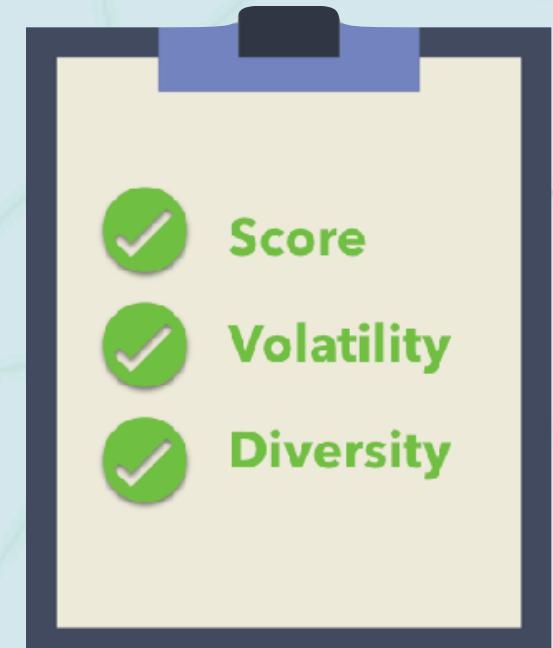
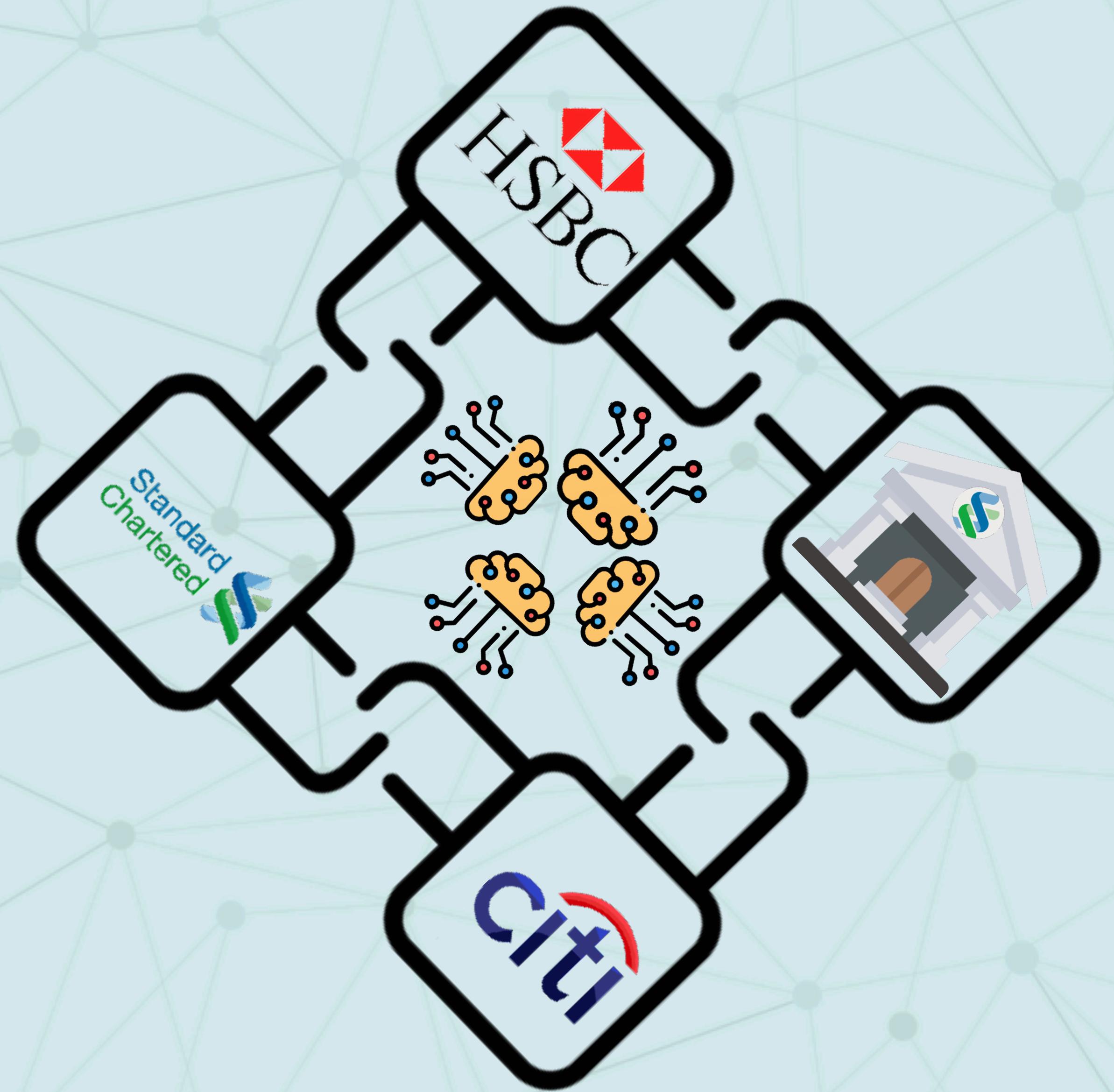


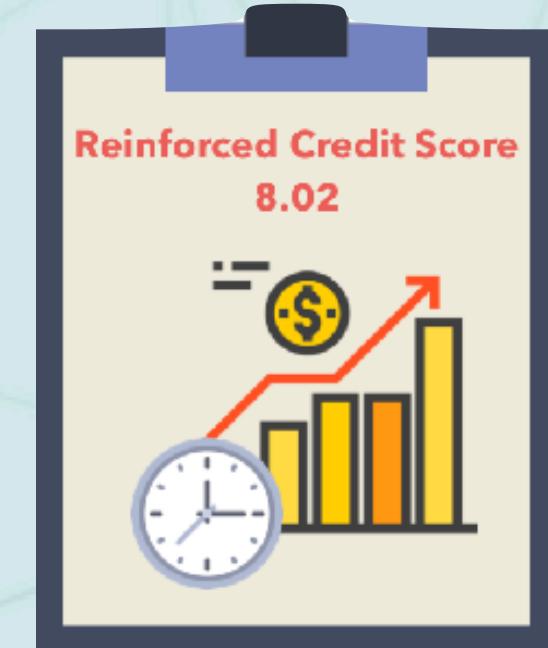
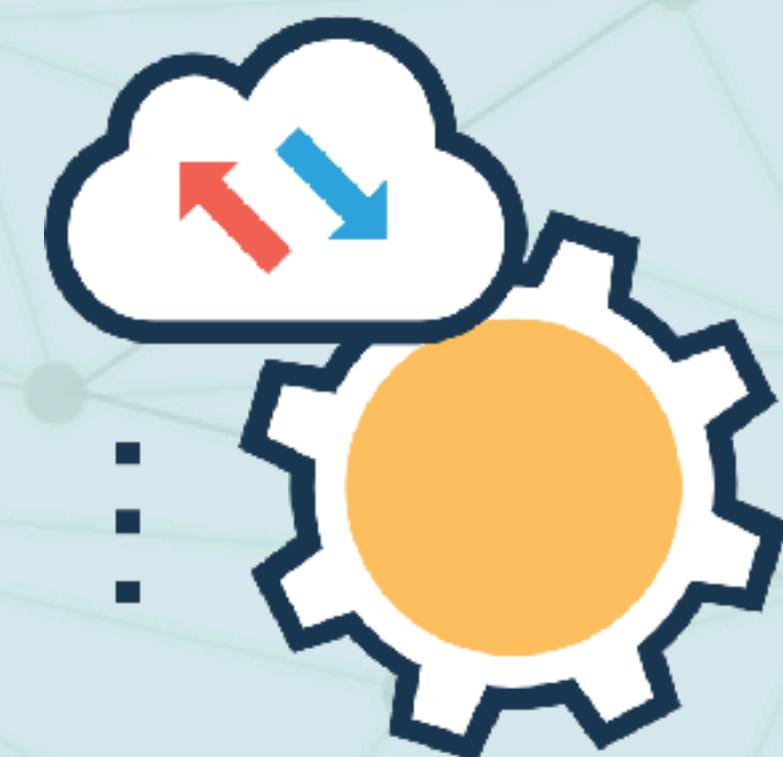
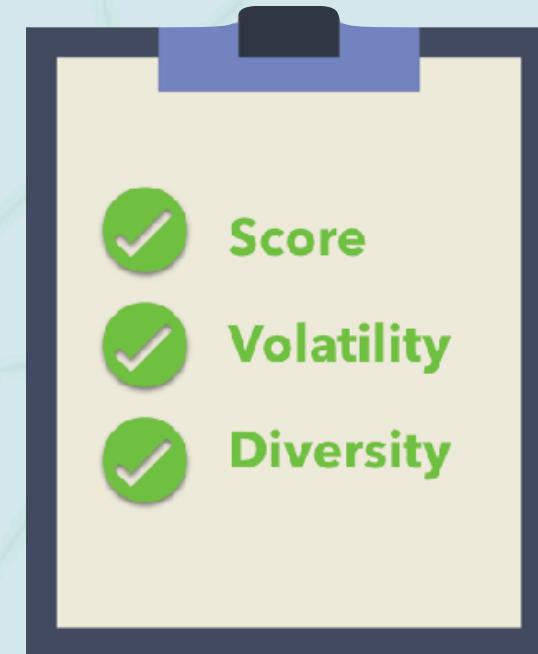
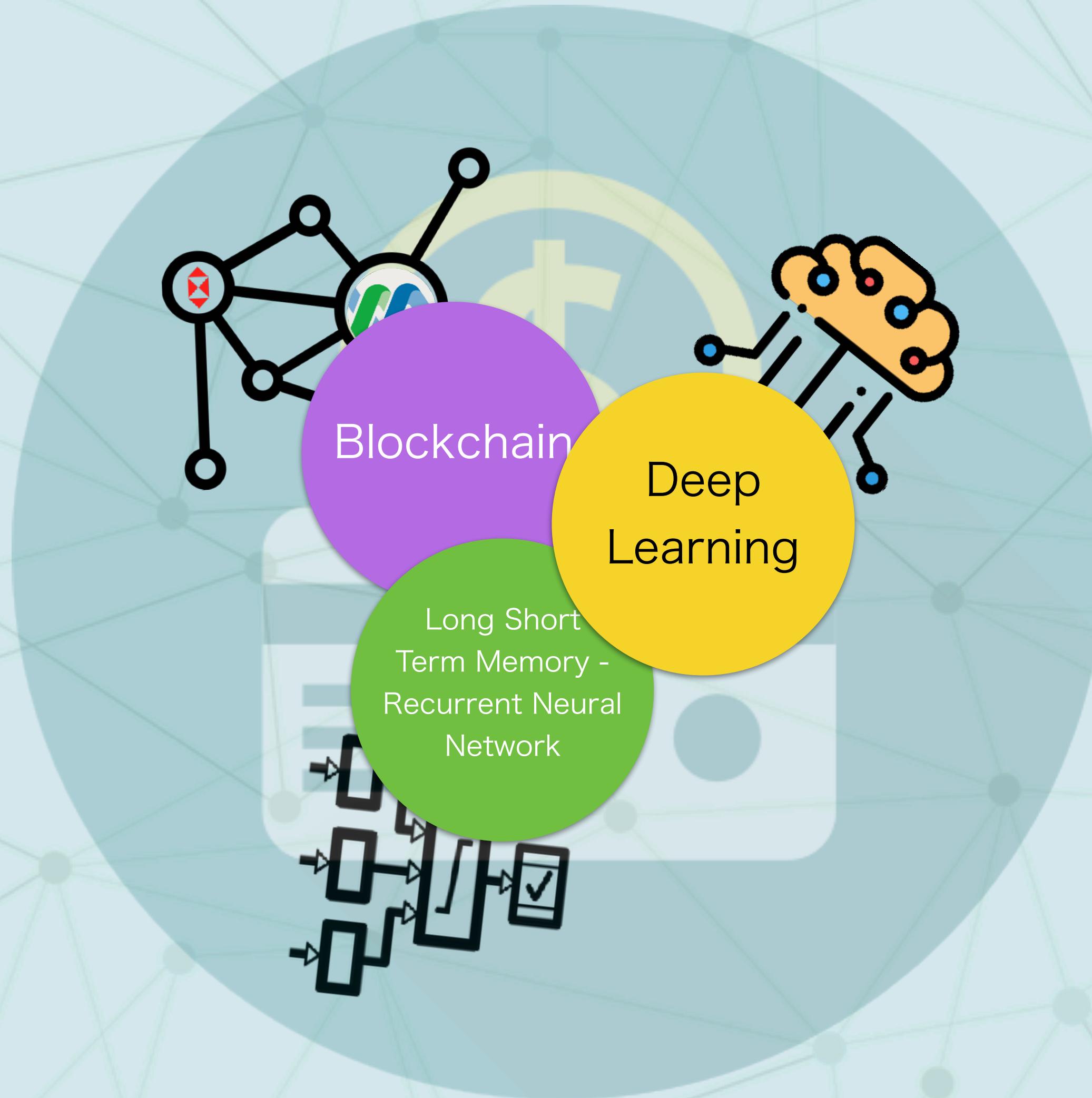


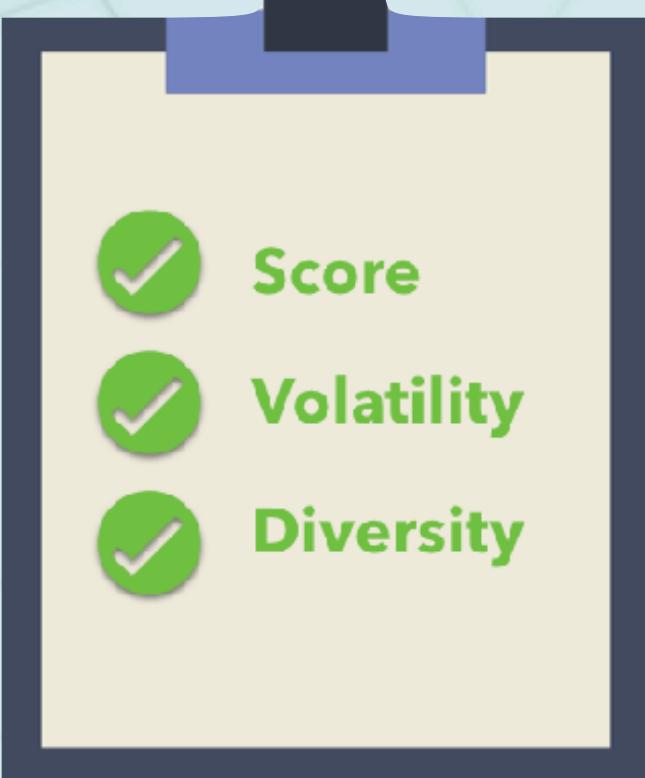
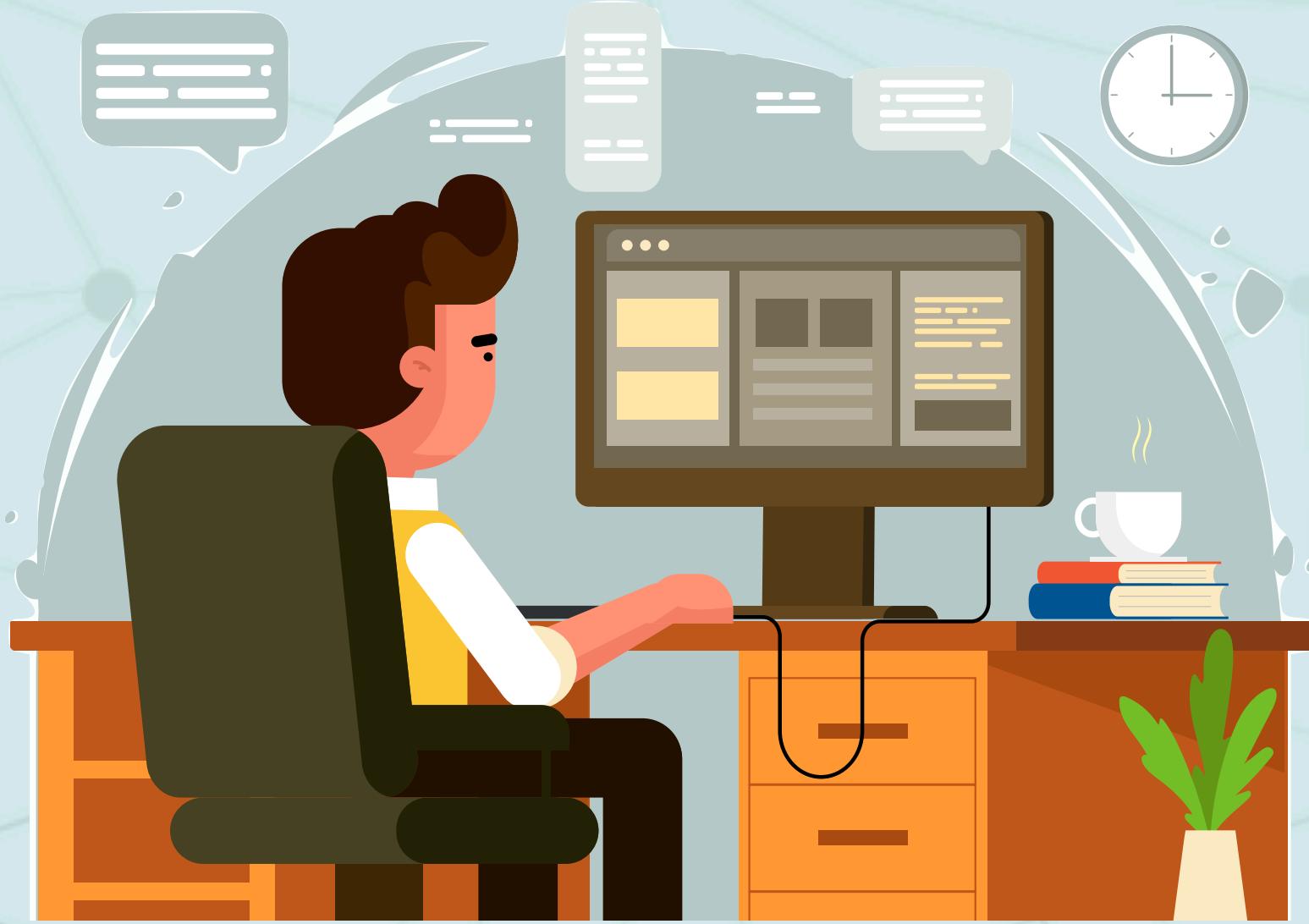
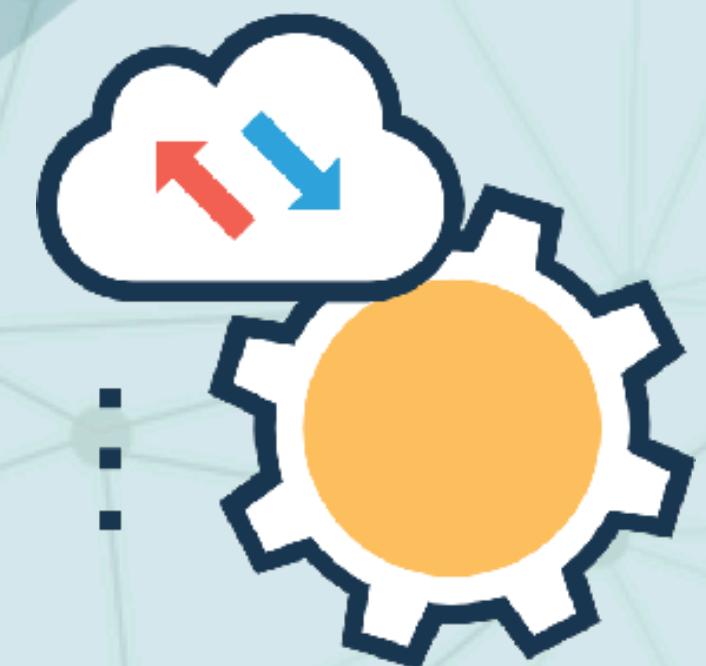
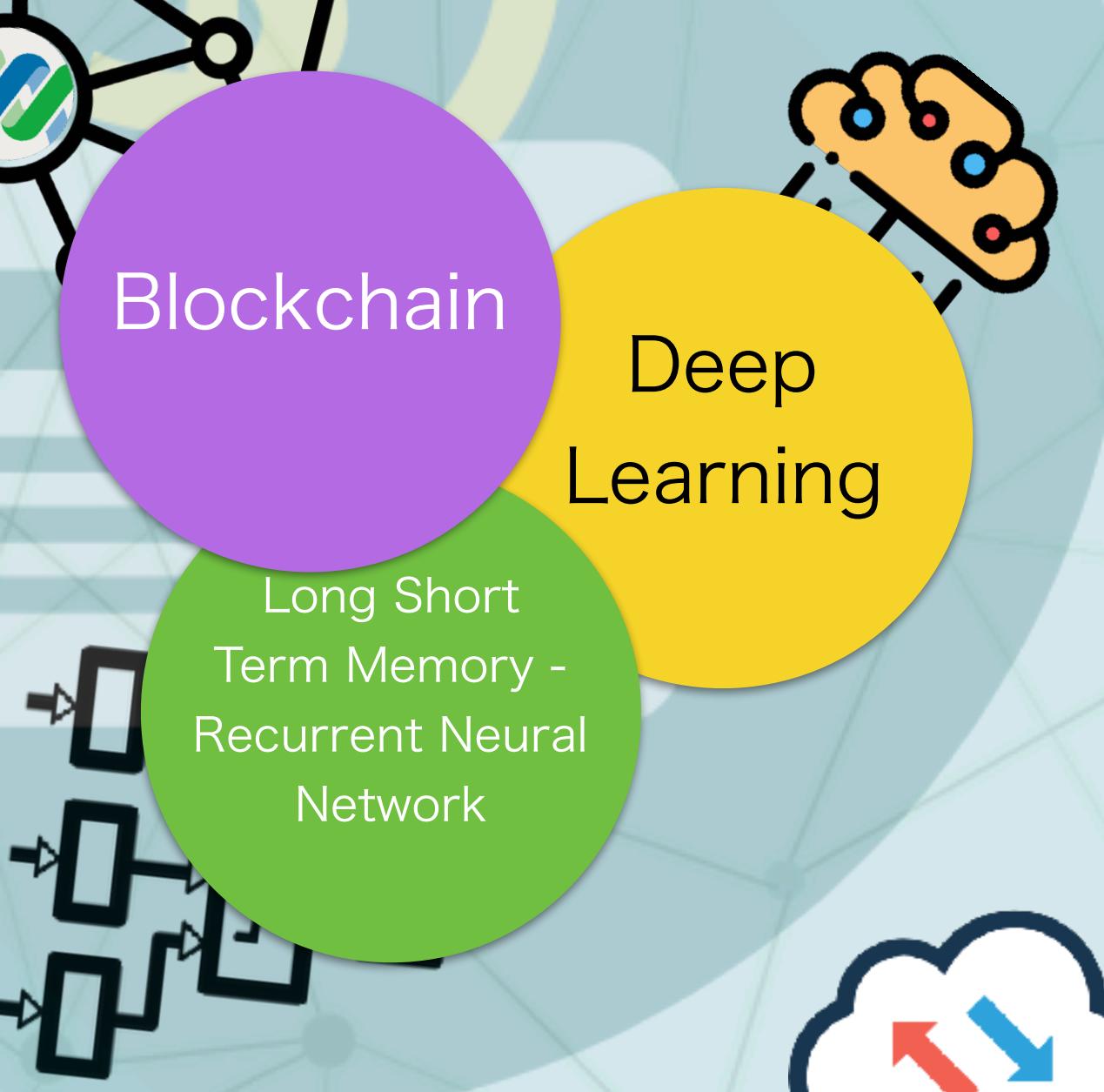


```
88     for index, row in train.items():
89         HKID = index
90         # define LSTM
91         # generate new random sequence
92         X,y = get_data(HKID,n_in, n_out)
93         lene = X.shape[0]
94         c = lene/2
95         e = c+1
96         d = range(e,-1,-1)[-1]
97         for i in d:
98             if(c%i == 0):
99                 break
100        batch_size = i
101        if(lene%batch_size !=0):
102            batch_size = 1
103        print ("Batch Size: ",batch_size)
104
105
106        model = Sequential() #Depreciated in Keras 1.1.0
107        model.add(LSTM(250, batch_input_shape=(batch_size, n_in, encoded_length), stateful=True))
108        model.add(RepeatVector(n_out))
109        model.add(LSTM(250, return_sequences=True, stateful=True))
110        model.add(TimeDistributed(Dense(encoded_length, activation='softmax')))
111        model.compile(loss='categorical_crossentropy', optimizer='adam', metrics=['acc'])
112
113        # fit model for one epoch on this sequence
114        earlyStopping = EarlyStopping(monitor='acc', min_delta=0, patience=10, verbose=0, mode='auto')
115        model.fit(X, y, epochs=10, batch_size=batch_size, verbose=2, shuffle=False, callbacks=[earlyStopping])
116        model.reset_states()
117
118        yhat = model.predict(X, batch_size=batch_size, verbose=0)
119        yhat_deco = one_hot_decode(yhat[lene-1])
120        print ("yhat deco: ",yhat_deco)
121
122        output = []
123        output.append(HKID)
124        for i in range(len(yhat_deco)):
125            output.append(zipped[yhat_deco[i]][0])
```

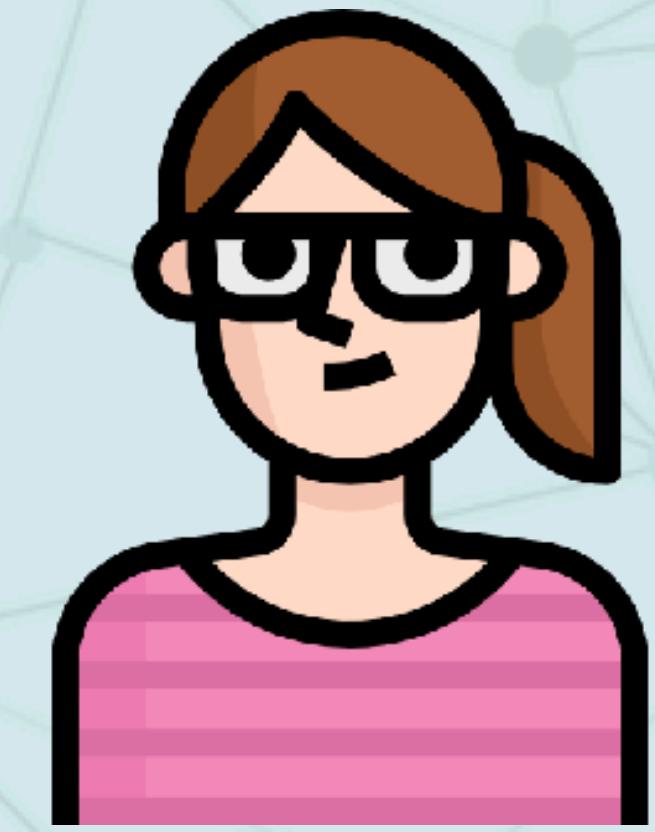
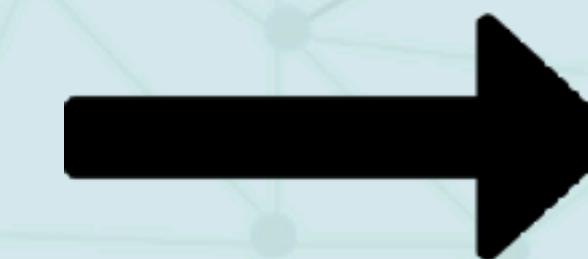




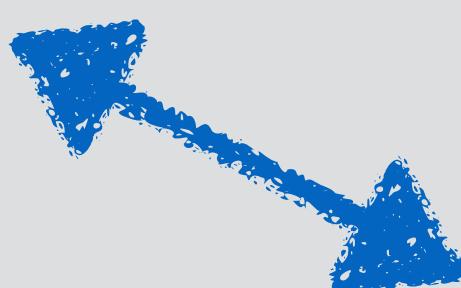
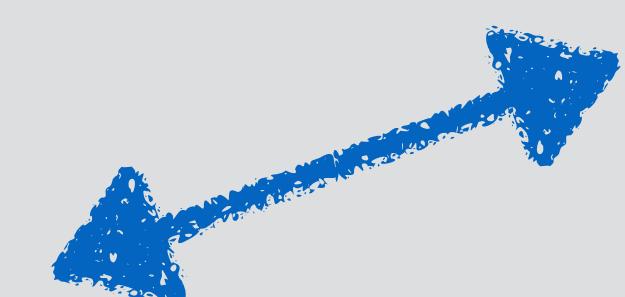
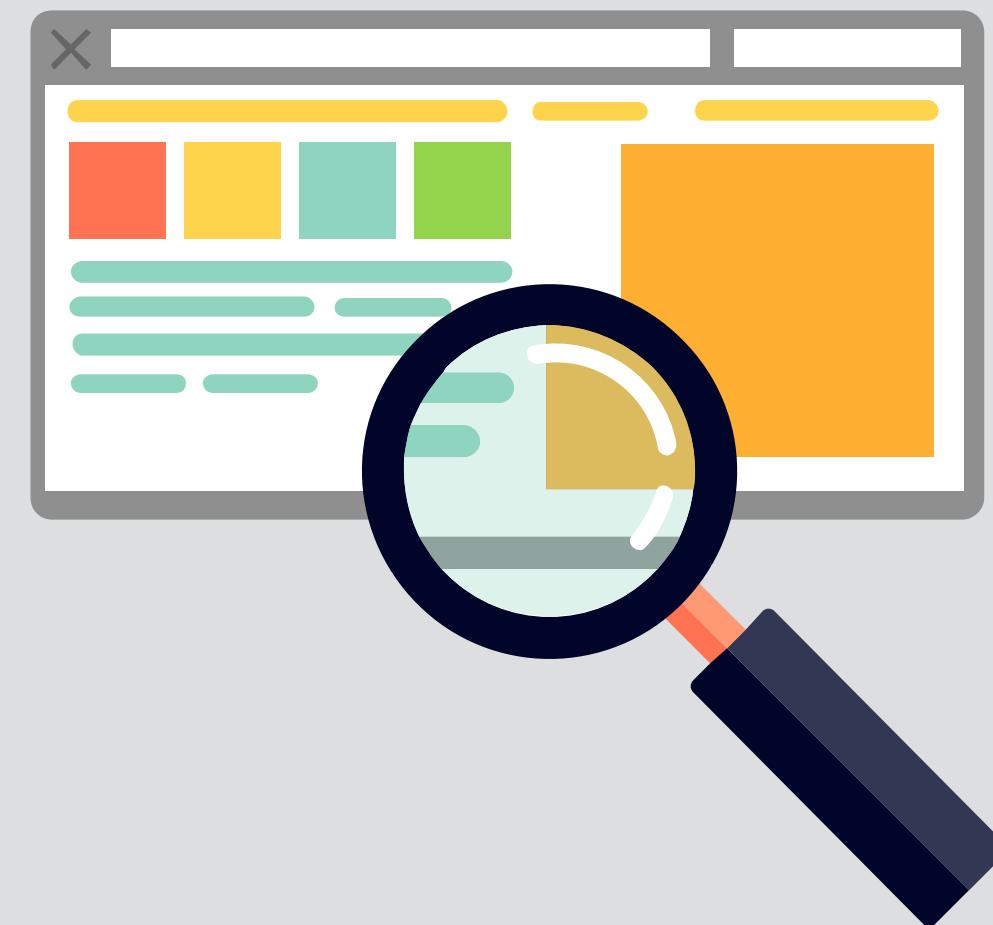




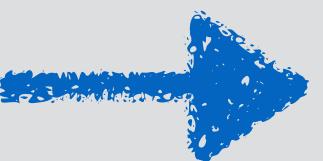
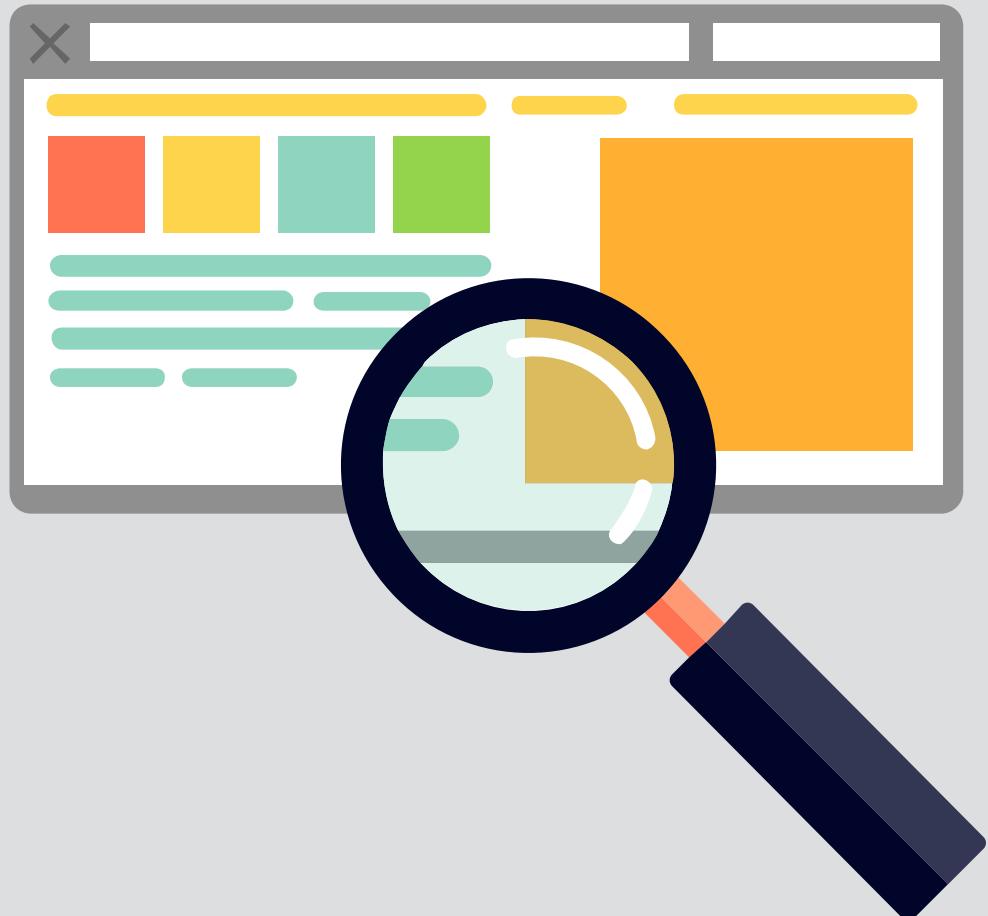
- Instant
- Accurate
- Transparent
- Cheap
- Secure



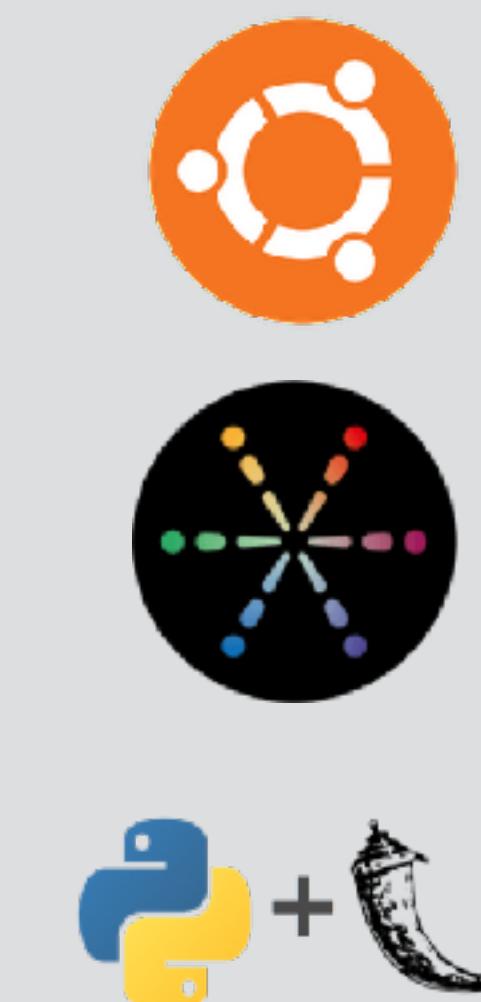
Consortium Architecture



Node Configuration



D2S_V3 Standard	
2	vCPUs
8	GB
4	Data disks
4000	Max IOPS
16 GB	Local SSD
	Premium disk support
	Load balancing
554.25	
HKD/MONTH (ESTIMATED)	

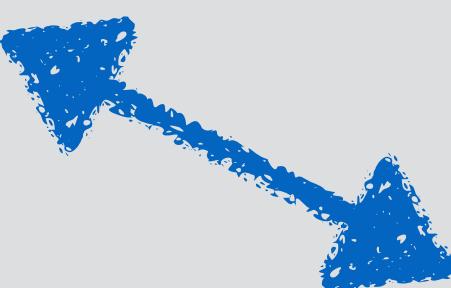
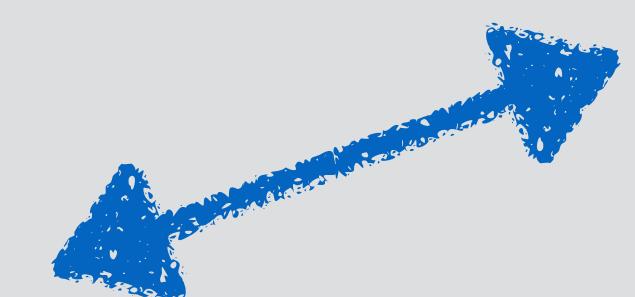
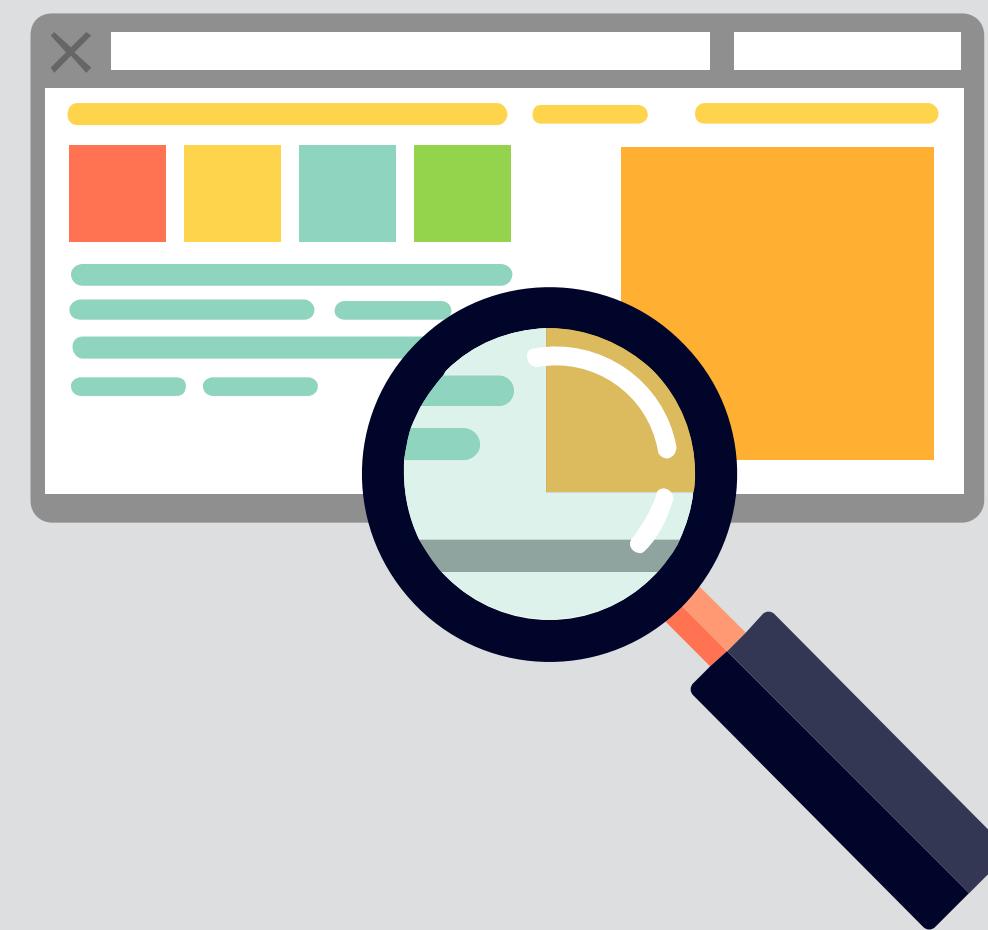


Ubuntu Server 17.10

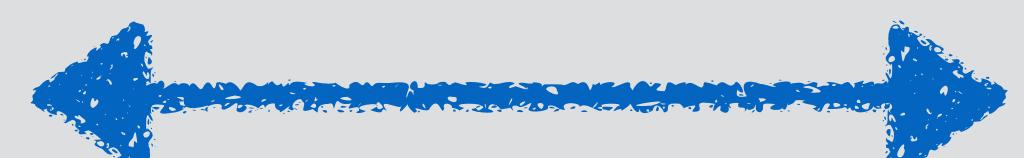
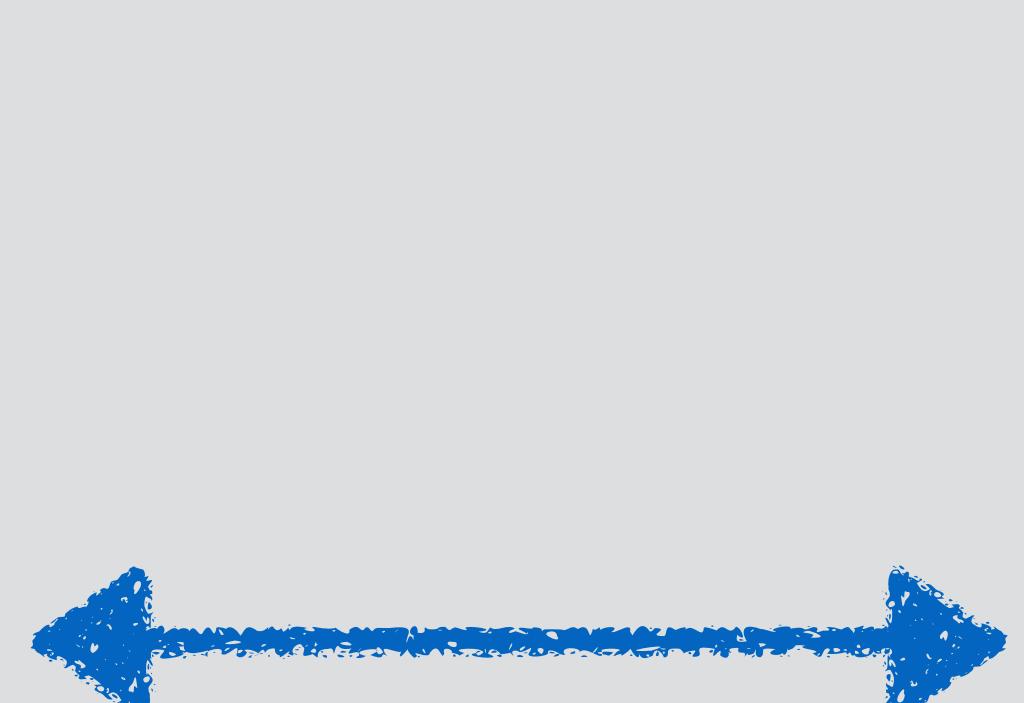
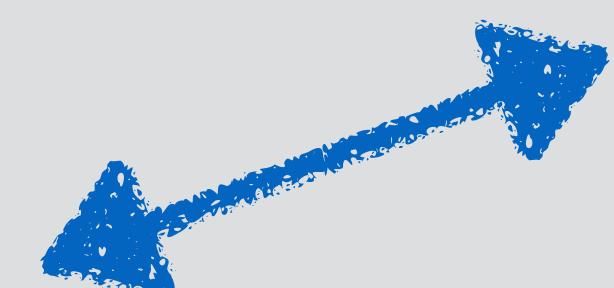
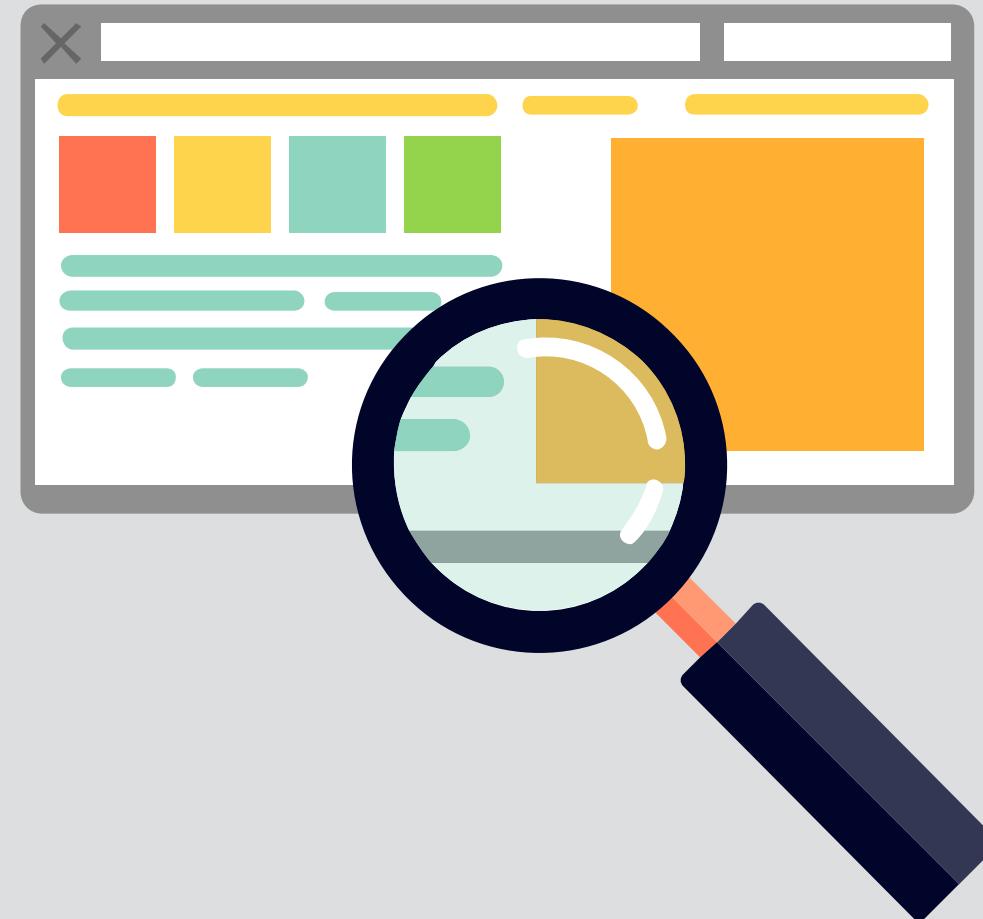
**Multichain 1.0.4
(Protocol 10010)**

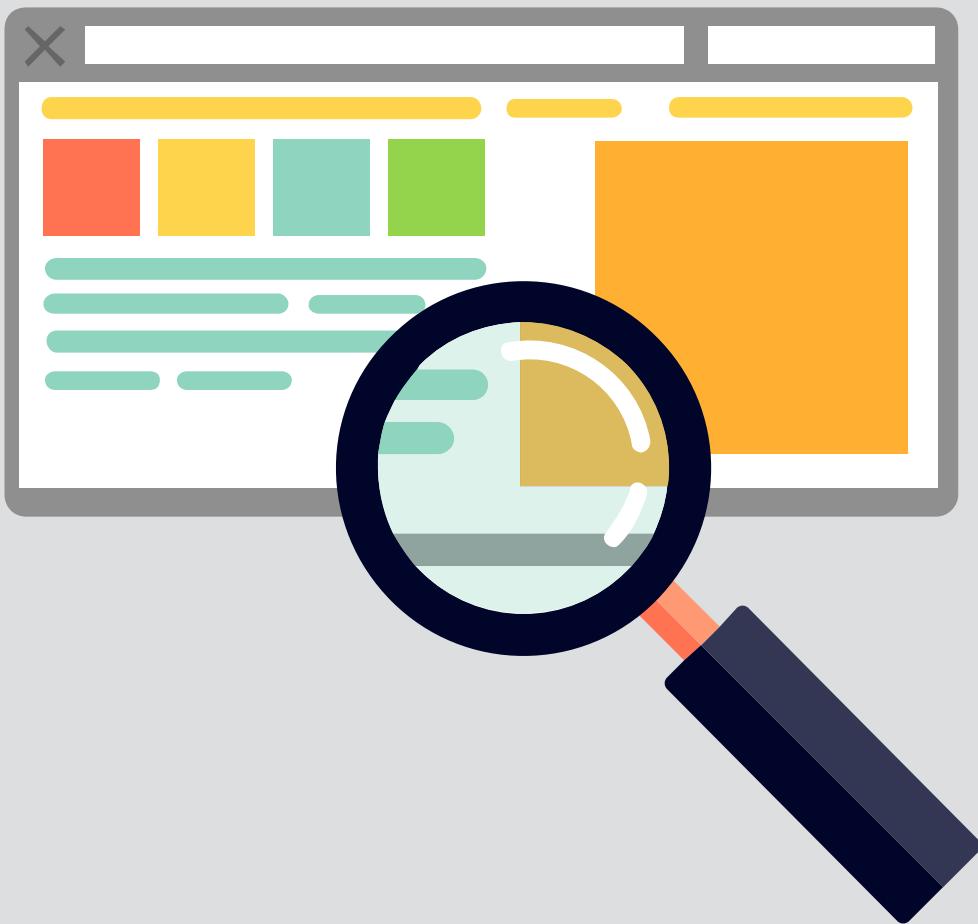
**Python3 & Flask for
RESTful API**

Consortium Architecture

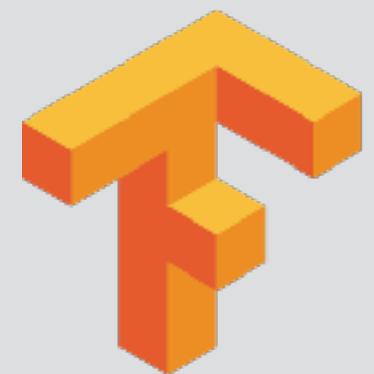


Demo Architecture





Machine Learning



Tensorflow r1.7



Training With Scale-Out
GPU Clusters on Demand

Azure Batch AI

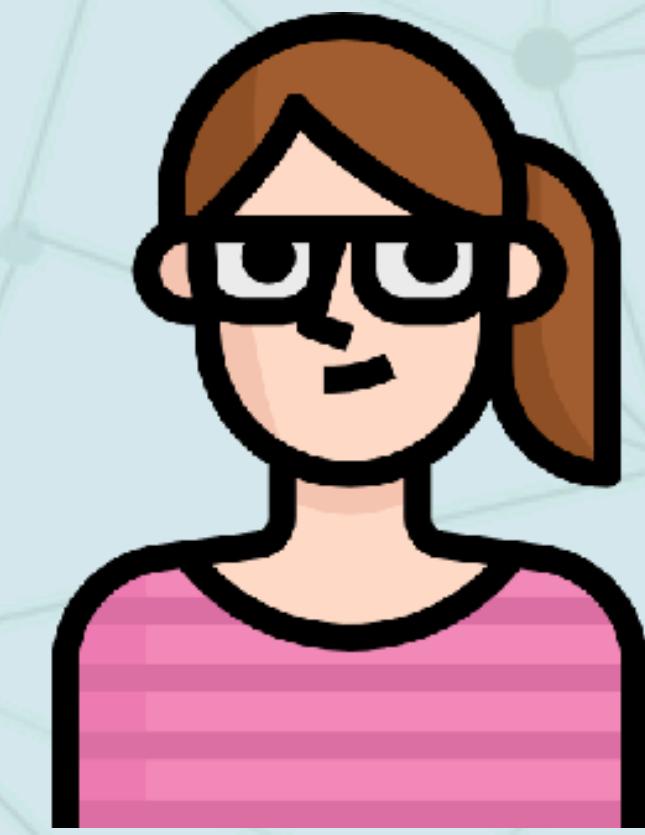
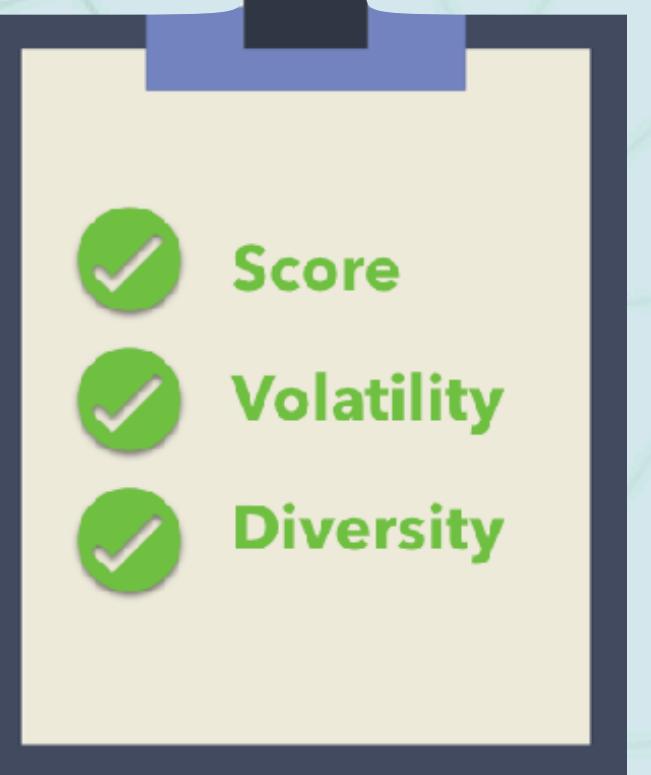
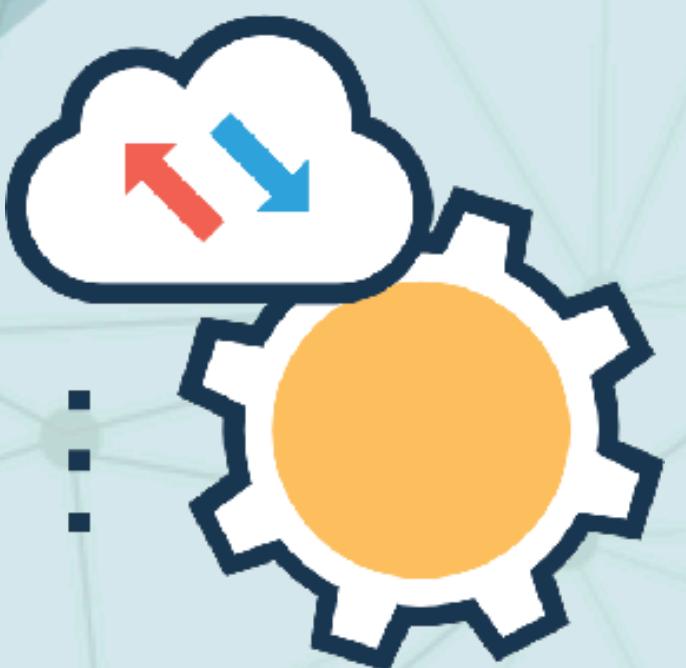
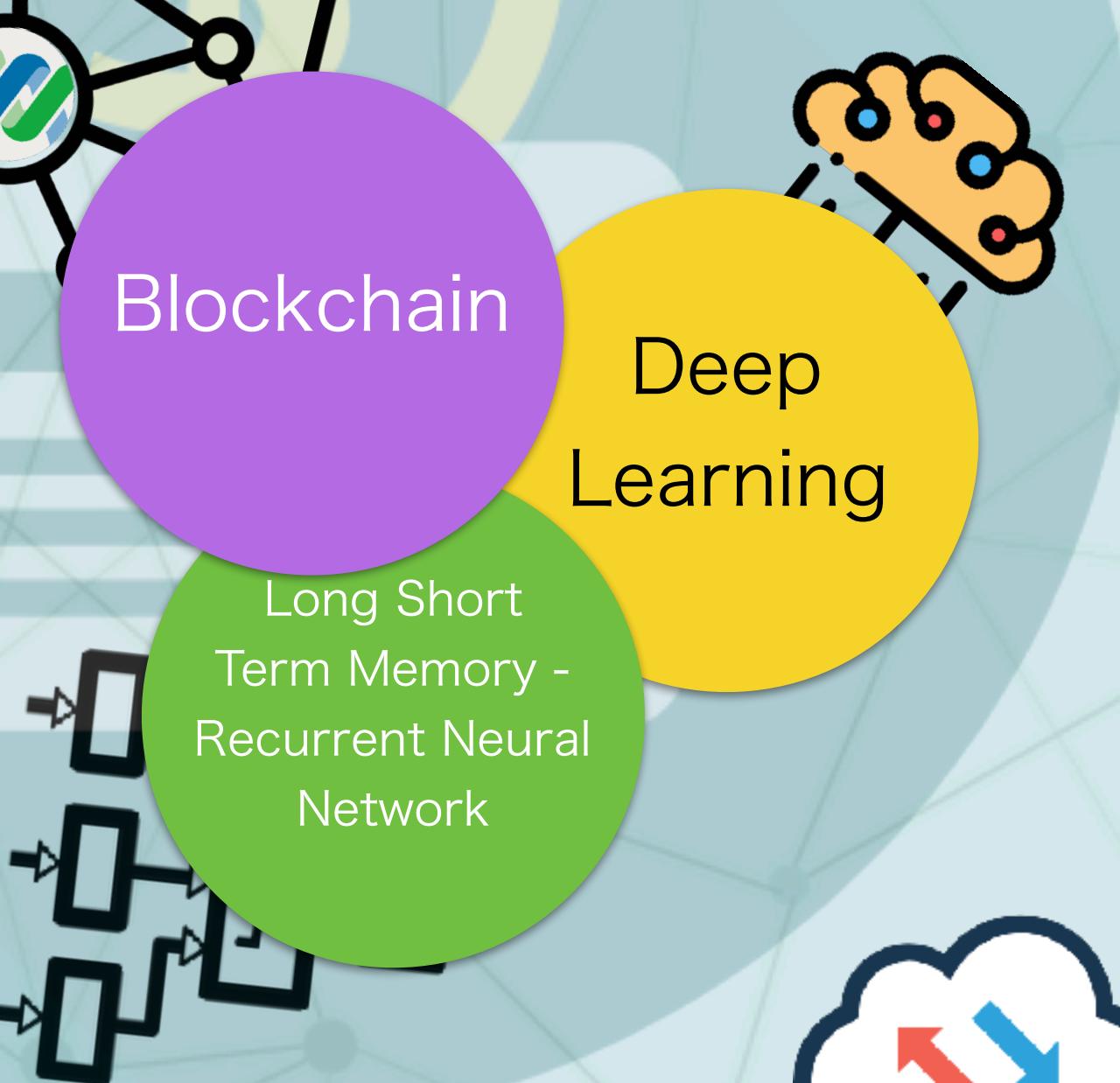


Keras 2.1.5

Instance: NC6 (6 Core)

RAM: 56GiB

GPU: Nvidia Tesla K80 x1

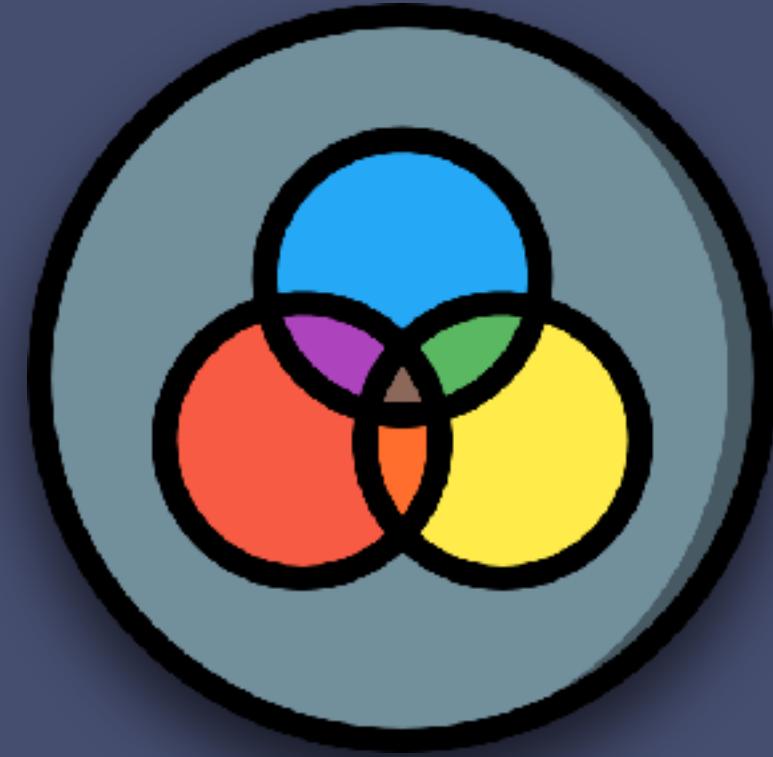


- Instant
- Accurate
- Transparent
- Cheap
- Secure



Let's talk business

Value Proposition



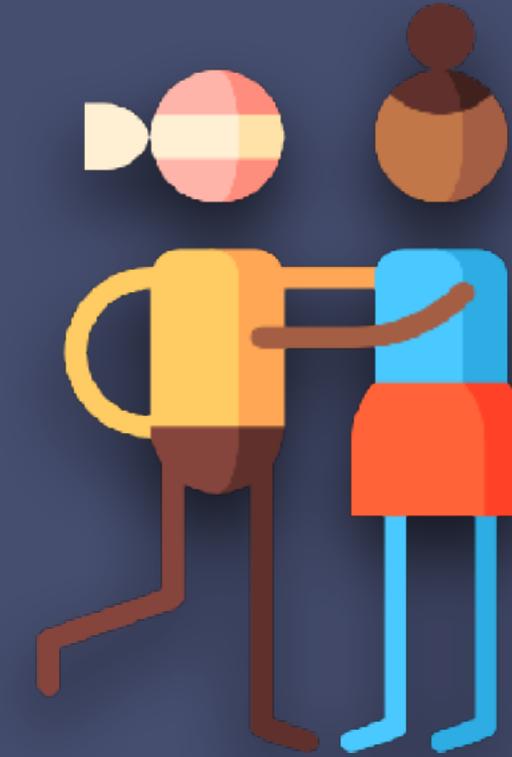
A more transparent and holistic credit report at zero cost to the normal public (0 HKD)



No transfer of data to third party agencies for processing



No static formula for credit scoring. Formula adapts to your spending nature and credit history



Trustworthy data sharing with mutual consensus on the network

Competitive Analysis



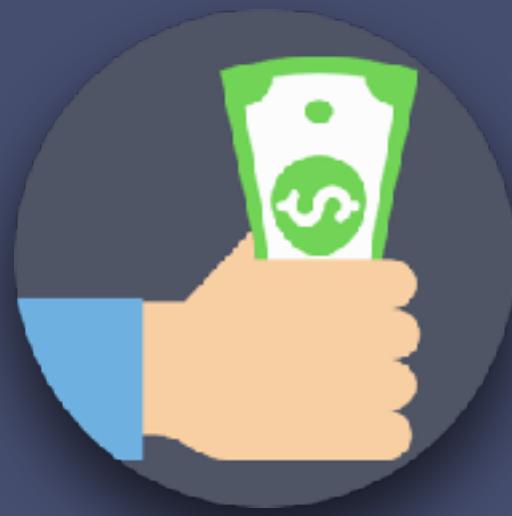
**Subscription
based revenue
model with banks**



**Major market share
in Hong Kong
includes top 10
banks in the city**



**Charges \$HK 280
for a credit score
report**



**Pay-as-you-go model
with banks on our
network. You pay for
each application
processed by our
machine learning model**



Credit Sense



**Free unlimited
credit reports for
all the customers
who have their
data on our
network**

Business Model

Revenue Model



Pay-as-you-go
HK\$3 per
application
processing



Our cost is HK\$2
per application
processing

Target Customers



Initial Stage:
Minimum 3 banks
consortium



Future Stage: All
major banks in
Hong Kong

Cost Analysis

Cost Analysis	HKD / month	Quantity	Total
GPU	5139	1	5139
Public Portal	115	1	115
Maintenance	1000	-	1000
Total			6254

Profit Analysis	Cost/month	No. of Applications	Profit with \$3 charge/
Scenario 1	6254	2500	1246
Scenario 2	6254	4000	5746
Scenario 3	6254	6000	11746

Monthly expenses after system development



Cost Per Application
HK\$2



1000 applications process by banks each month on an average



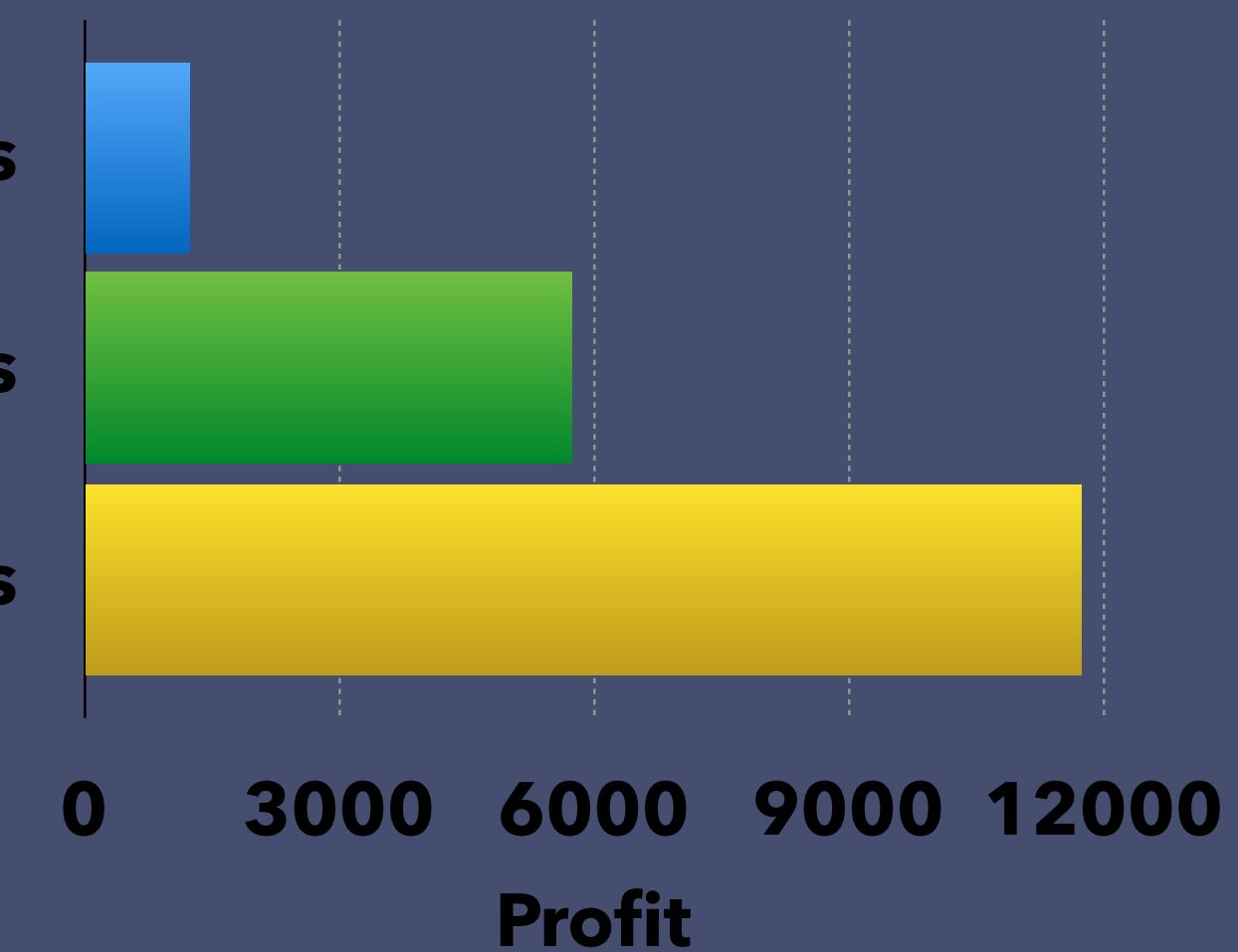
Initial Stage:
Minimum 3 banks consortium

Profit Analysis

2500 Applications

4000 Applications

6000 Applications

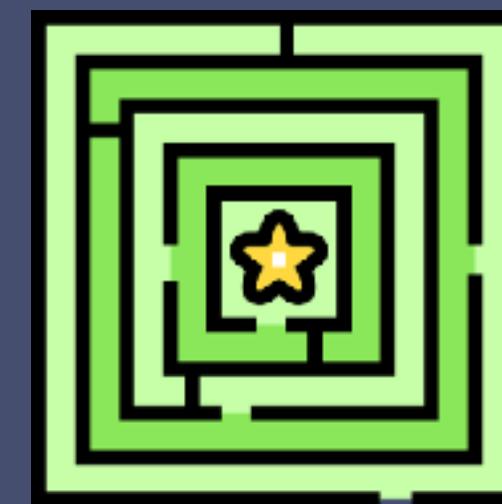


Market Validation

In-Person 10-15 minutes interviews
with Five Bank Officers at different
branches of following banks



Problem
Exists 



Solution 



Interface 



Concerns 

CREDIT SENSE ROADMAP - VIEW 3

Apr 1, 2018 - Dec 1, 2018



Meet Our Advisors!



Dr. Dirk Schneiders
PhD Computer Science
Lecturer HKU
Computer Vision, Machine Learning,
Artificial Intelligence Expert



Mr. Charles Lam
Fintech Lead
Cyberport Hong Kong



Mr. Edmund To
Software Engineer
Hyperledger Foundation
Blockchain, Distributed Ledger, Hyperledger
Fabric Expert

Goal



Microsoft Azure

Why Azure ▾ Solutions Products ▾ Documentation Pricing Training Marketplace Partners ▾ Support ▾ Blog Resources More ▾

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Welcome to Azure Marketplace. Discover, try, and deploy the cloud software you want.

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By Credit Sense
Software plans start at Free

Get it now

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By Barracuda Networks, Inc.
Software plans start at US\$1.04/hour

Test Drive

NetApp AltaVault Cloud-Based Appliance
By NetApp
Software plans start at US\$0.67/hour

Test Drive

Informatica Intelligent Cloud Services - BYOL
By Informatica
Bring your own license

Get it now

SoftNAS Cloud
By SoftNAS
Software plans start at Free

Test Drive



Credit Sense

Made with ❤️ by Credit Sense