Blockchain-19

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Project Intro - What is Blockchain-19?

Throughout the COVID-19 pandemic, data sources have been difficult to come by. Our idea is to make an extension of the original blockchain game played in-class to create a data chain of COVID-19 patients for hospitals in the Pittsburgh area.

- Create a Blockchain of COVID-19 patient information
- Anonymous information
- Create a real life blockchain application of the status of COVID-19 patients
  - Create a blockchain of data for multiple hospitals
  - Data consists of Hospital, PatientID, Patient Status, Nonce, and hash
- Create a Python program that allows users to enter info to a ledger and automatically calculate hashes

Hash Function Information

Hash = Nonce + a + b + c - Value of Last 2 digits of prev Hash

Variable Information:

- *a* = Value of the first letter of the hospital.
- *b* = Value of the first letter of the patient's public key.
- *c* = Value of the patient COVID-19 status.
- *Nonce* = A value between 1 and 3 that you will adjust to calculate a hash that can be equally divisible by 3.

Patient COVID Statuses:

- A = Admitted
- B = Stable
- C = Moderate
- D = Severe
- E = Discharged
- F = ICU

Block	Hospital	Patient	Status	Nonce (1-6)	Prev Hash	a	b	c	Hash
									412
1	UPMC St. Margaret	1857D	A	1	12	80	65	70	204
2	Allegheny General	345F	C	1	4	83	66	70	216
3	UPMC Mercy	789aH	D	2	16	66	67	67	186
4	Presbytarian	0912L	E	3	86	80	69	66	132
5	Presbytarian	763W	B	3	32	69	69	68	177
6	Allegheny General	9783T	FF	2	77	69	66	66	126

Steps For Implementation

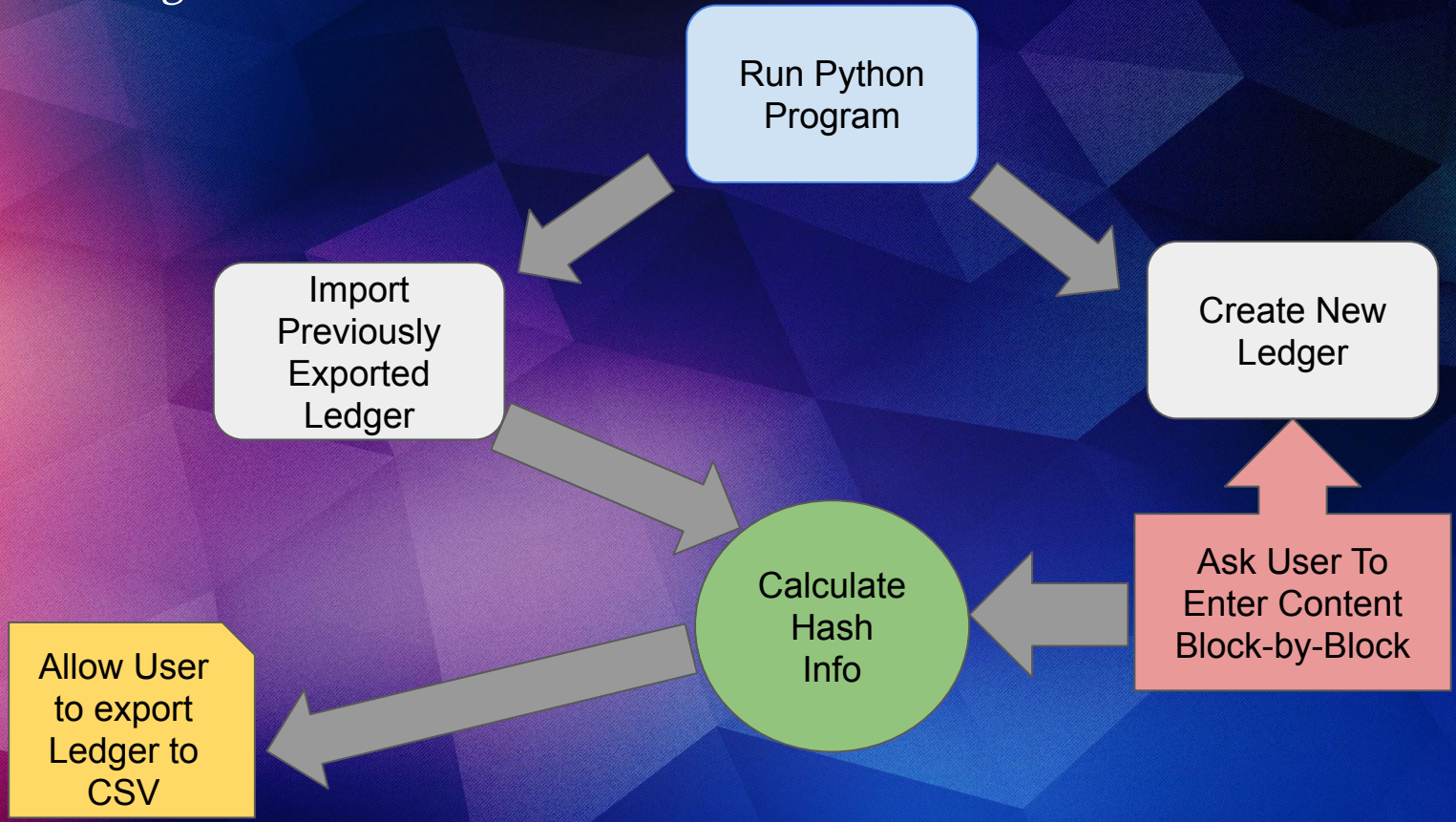
- Implementation to be completed using Python
- Implementation Steps:
  - Allow for new ledger creation
  - Allow for data entry
  - Calculate hashes
  - Allow for import/export of ledgers

Program Flow:

1. Create new or use existing ledger
2. Ask user for input (manual or file)
3. User data is hashed into dictionary function (blocks)
4. Output data into export .csv file

Implementation Diagram

Image



Questions?
Comments?
Praise?

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