

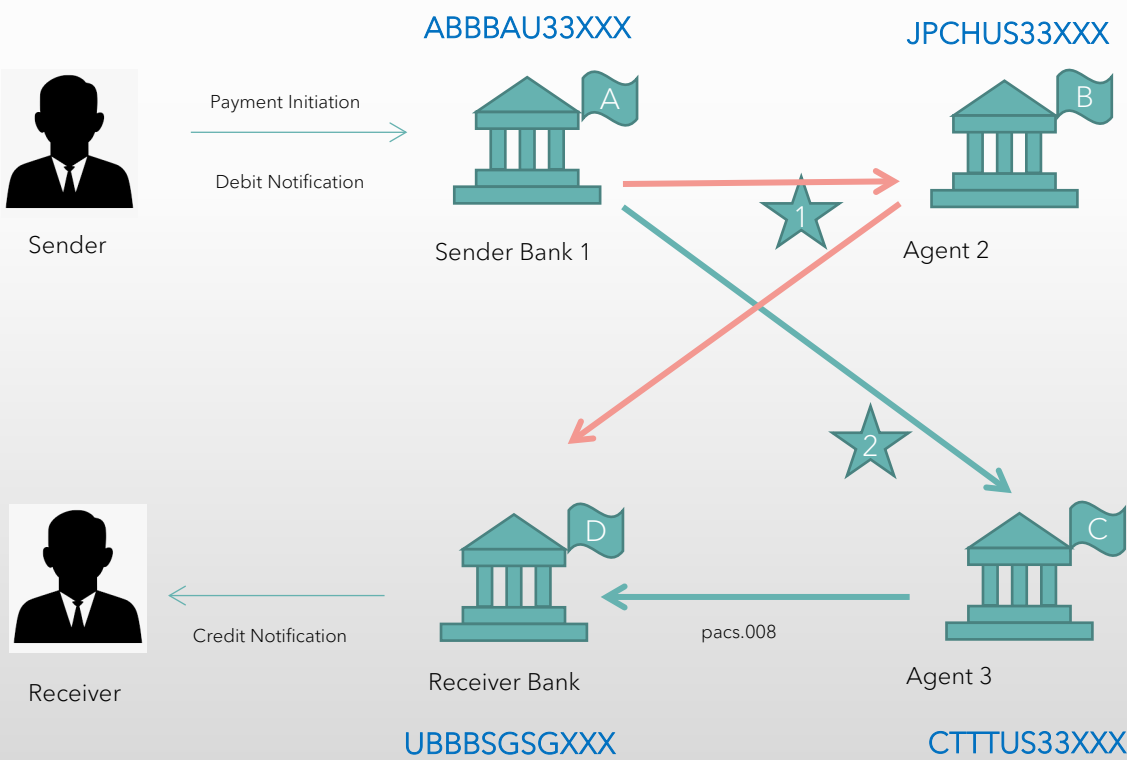
An abstract composition of various 3D rectangular blocks and prisms. The blocks are arranged in a cluster on the left side of the image, with some standing tall and others lying flat. The colors used are teal, orange, red, and pink. The blocks have black outlines and are set against a light gray background.

INTELLIGENT ROUTING

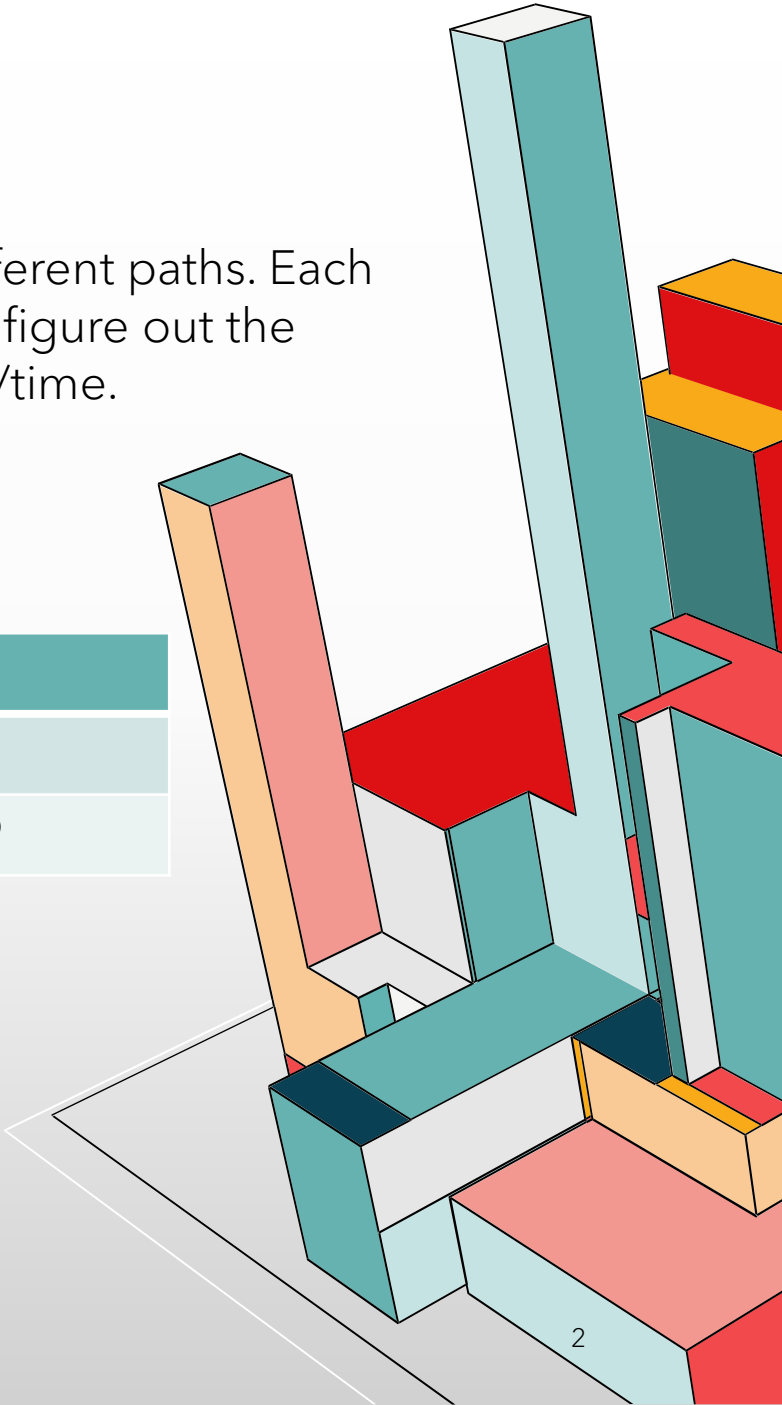
PROBLEM STATEMENT

A Payment from one bank to another can go over multiple banks and take different paths. Each combination will have it's own benefits in cost or time or both. The intent is to figure out the best way to enable a payment to reach it's destination bank with minimal cost/time.

Example: A person who wants to transfer from Australia to Singapore an USD payment.



Options	Route Path
1	A → B → D
2	A → C → D



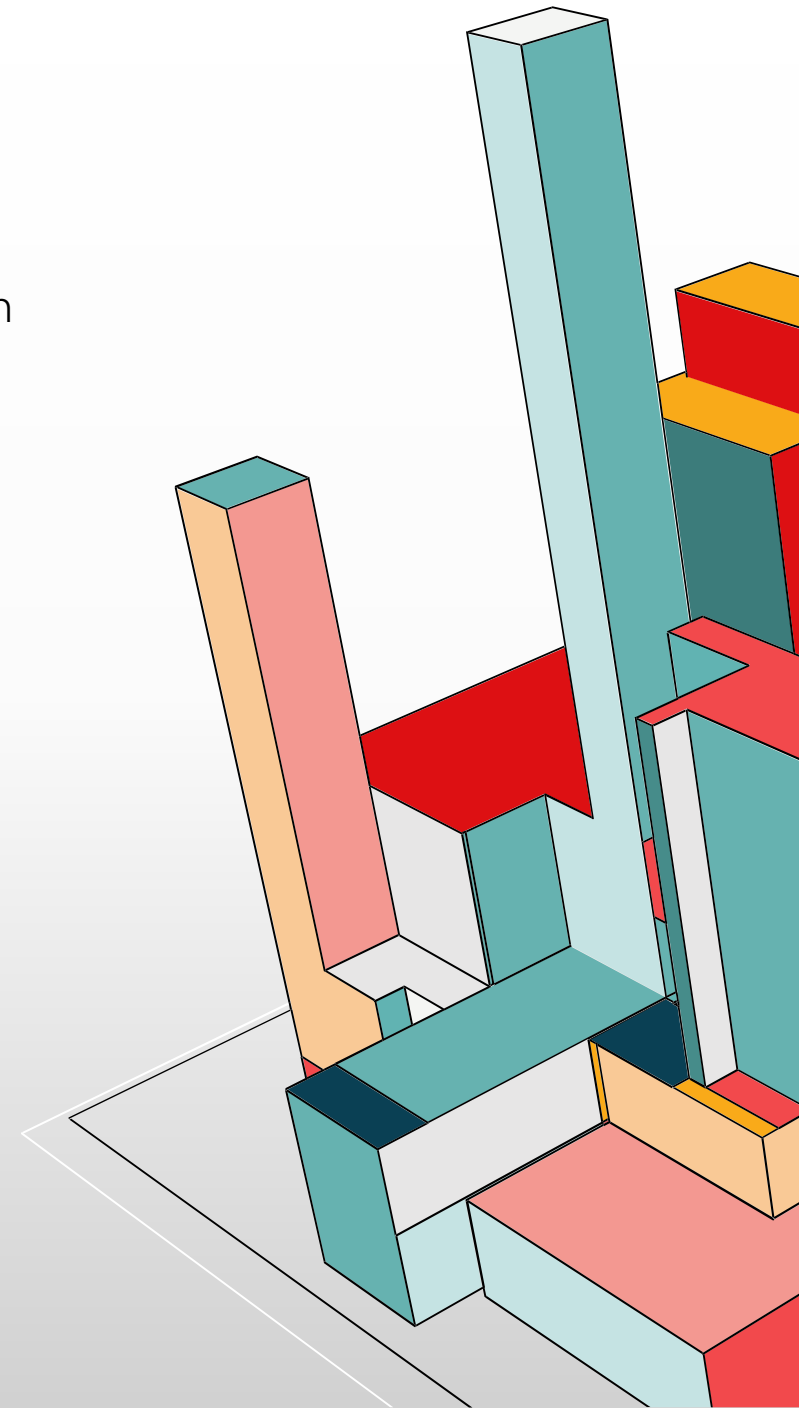
FILES PROVIDED

banks.csv – This file provides list of BICs (Bank Identifier Codes) along with the amount that bank charges

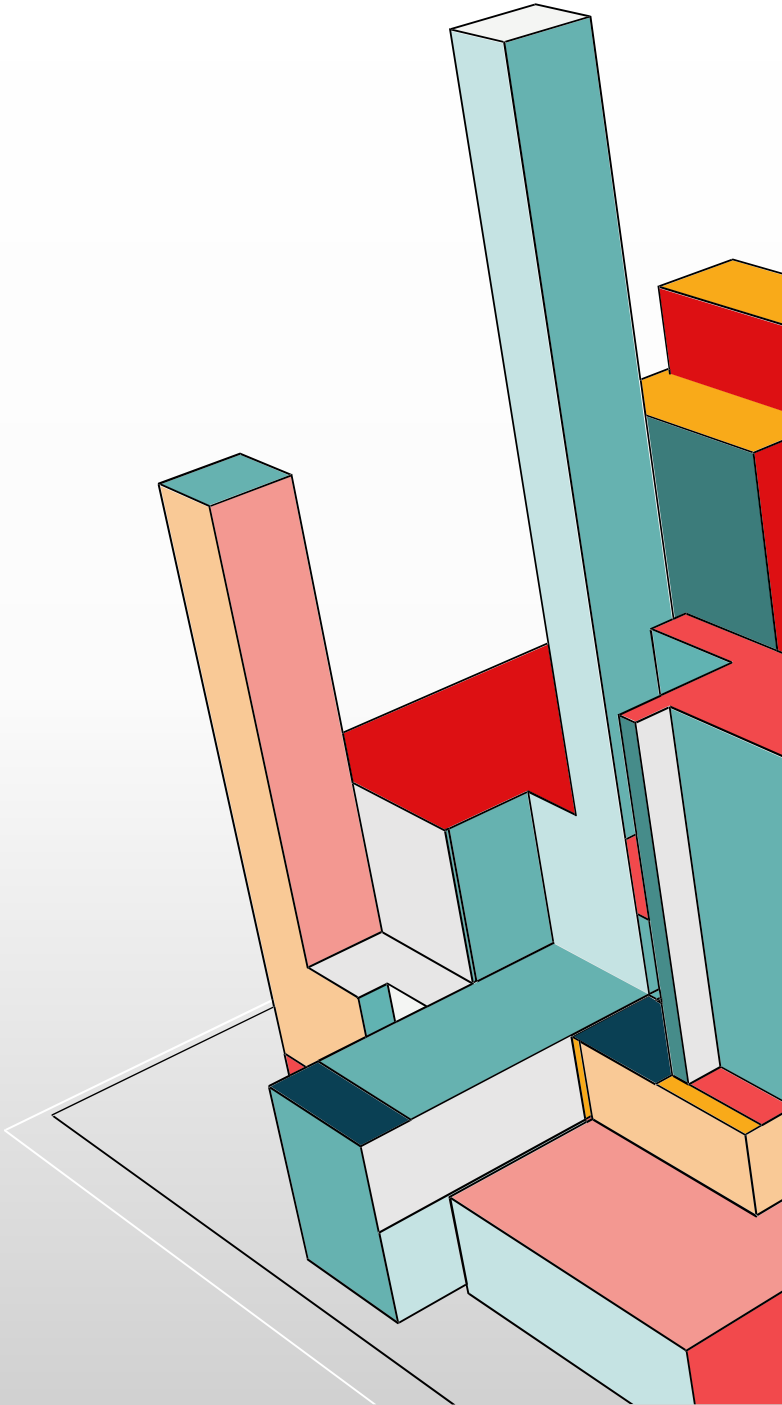
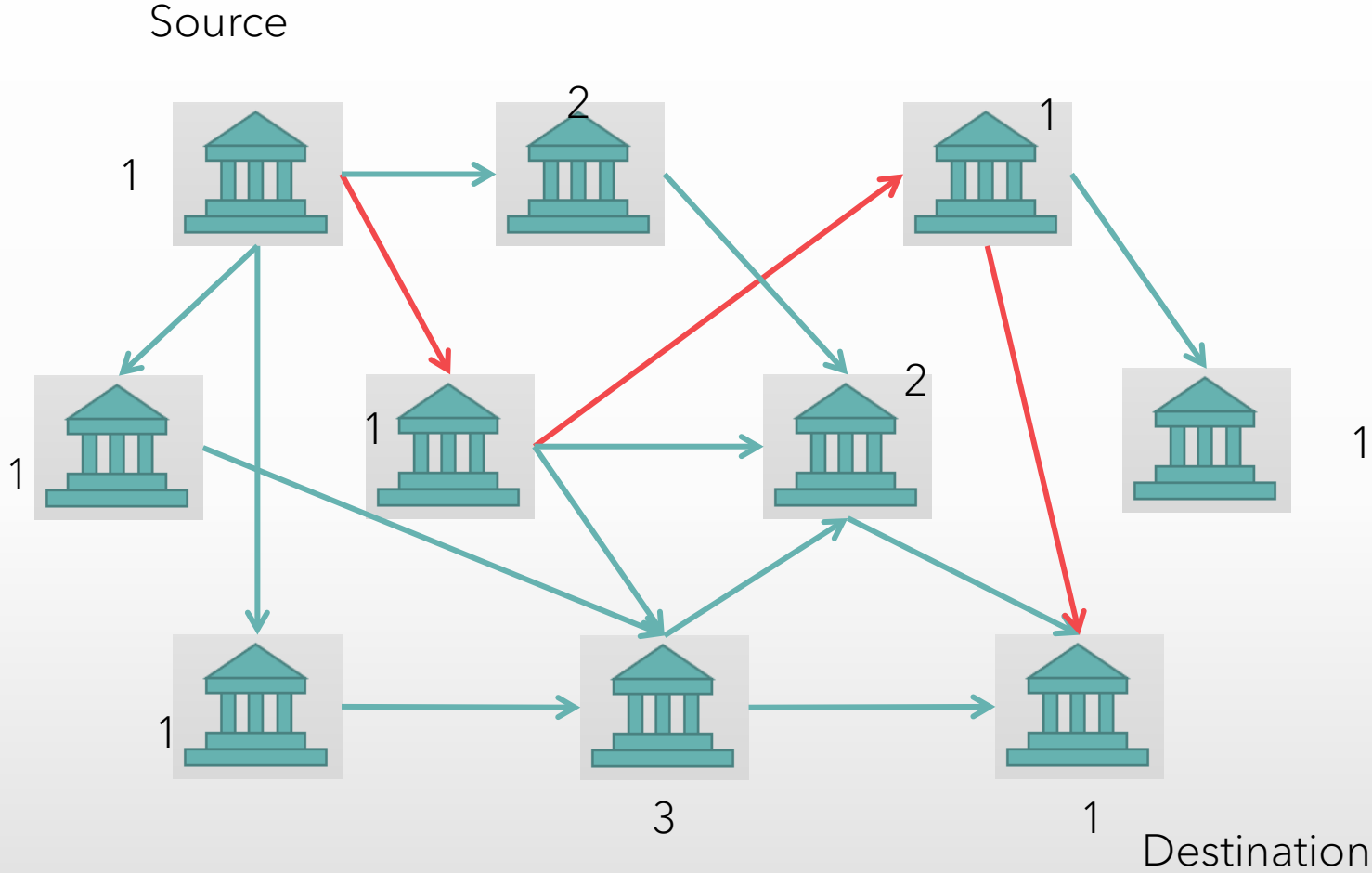
```
BIC,Charge  
ADDBINBBXXX,19  
IRVTUS3NXXX,14  
BENDAU3BXXX,18  
BNPAFRPPXXX,18
```

links.csv – This file provides paths available for payment and time taken from for a path

```
FromBIC,ToBIC,TimeTakenInMinutes  
CICIFRPPXXX,BNPAFRPPXXX,111  
BNPAFRPPXXX,CICIFRPPXXX,111  
CCBPFRPPXXX,BNPAFRPPXXX,57  
BNPAFRPPXXX,CCBPFRPPXXX,57  
CRLYFRPPXXX,BNPAFRPPXXX,104  
BNPAFRPPXXX,CRLYFRPPXXX,104
```

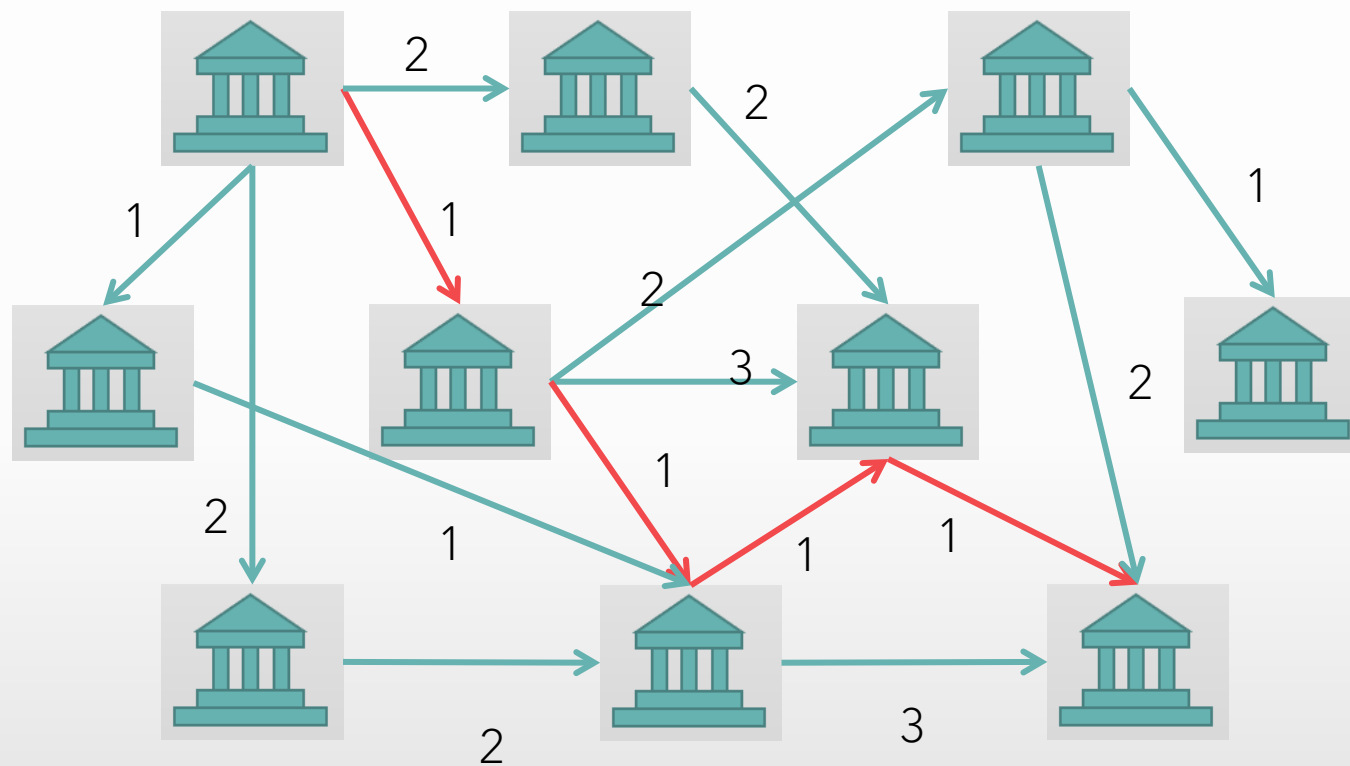


Cheapest path - cost from banks.csv

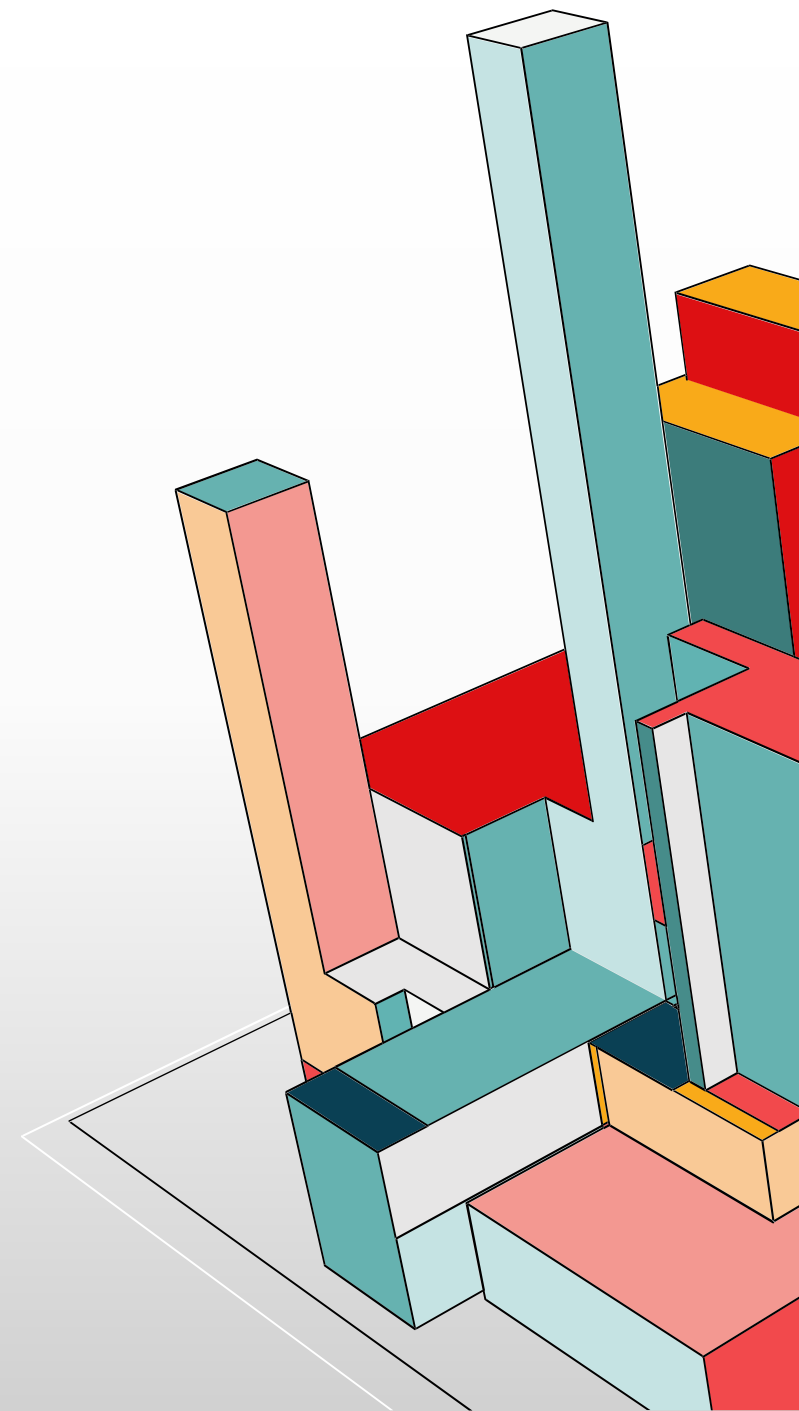


Fastest path - time from links.csv

Source



Destination





OUTCOME EXPECTED

1. Build UI Screen for the above
2. Use Database of choice, import data to that
3. Spring Boot App or any Service layer (node express, fastapi or any platform at your convenience)
 - a. Connect to DB for data
 - b. Expose API – for a given source and destination
 - i. Give fastest path with route and time
 - ii. Give cheapest path with route and cost

Sample Input:

```
{"fromBank": "abcd", "toBank": "xyz"}
```

/api/fastestroute : output

```
{ "route" : "abcd -> pqr -> xyz", "time" : "50" }
```

/api/cheapestroute : output

```
{ "route" : "abcd -> uvw -> xyz", "cost" : "20" }
```

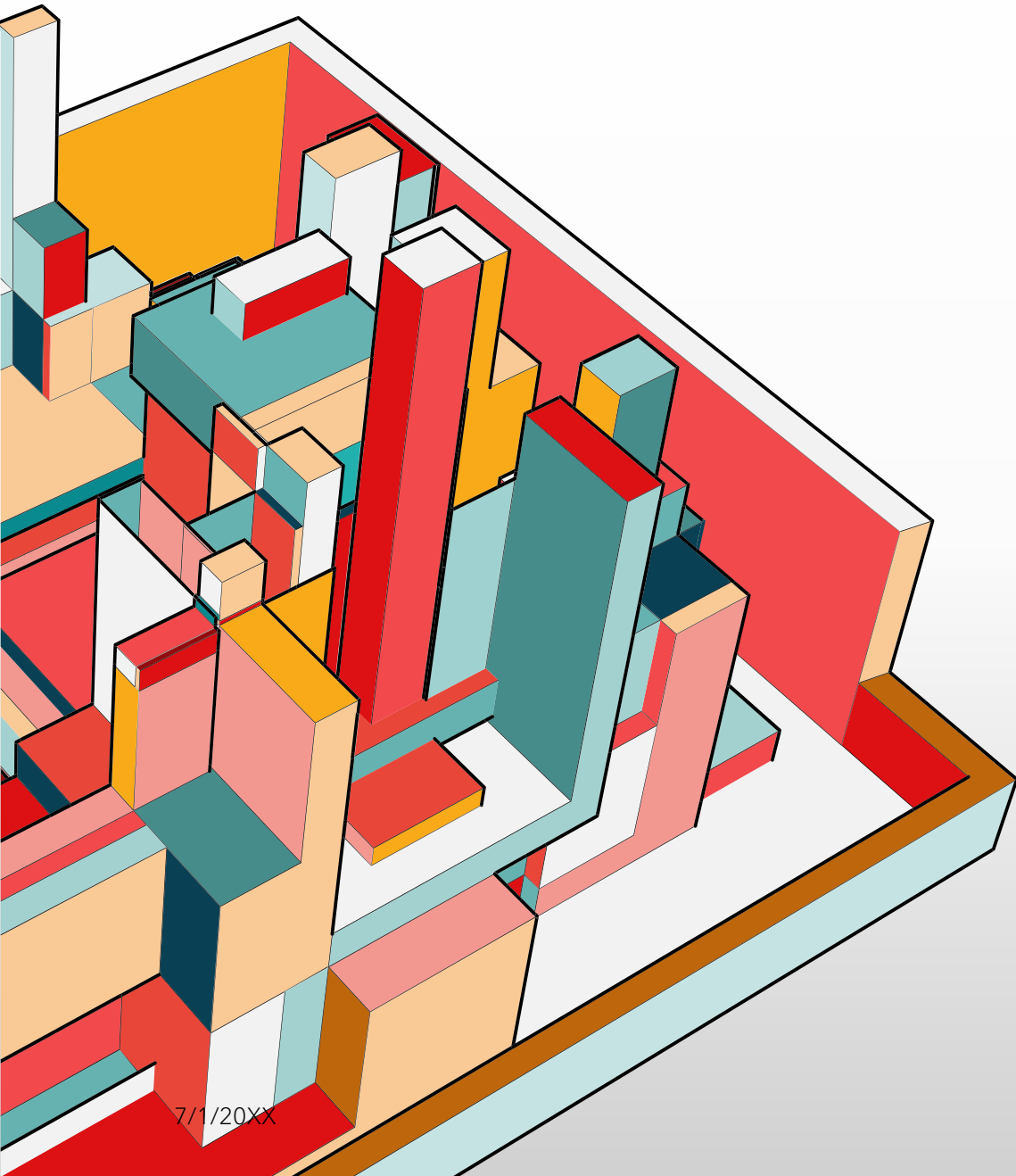


Allowed

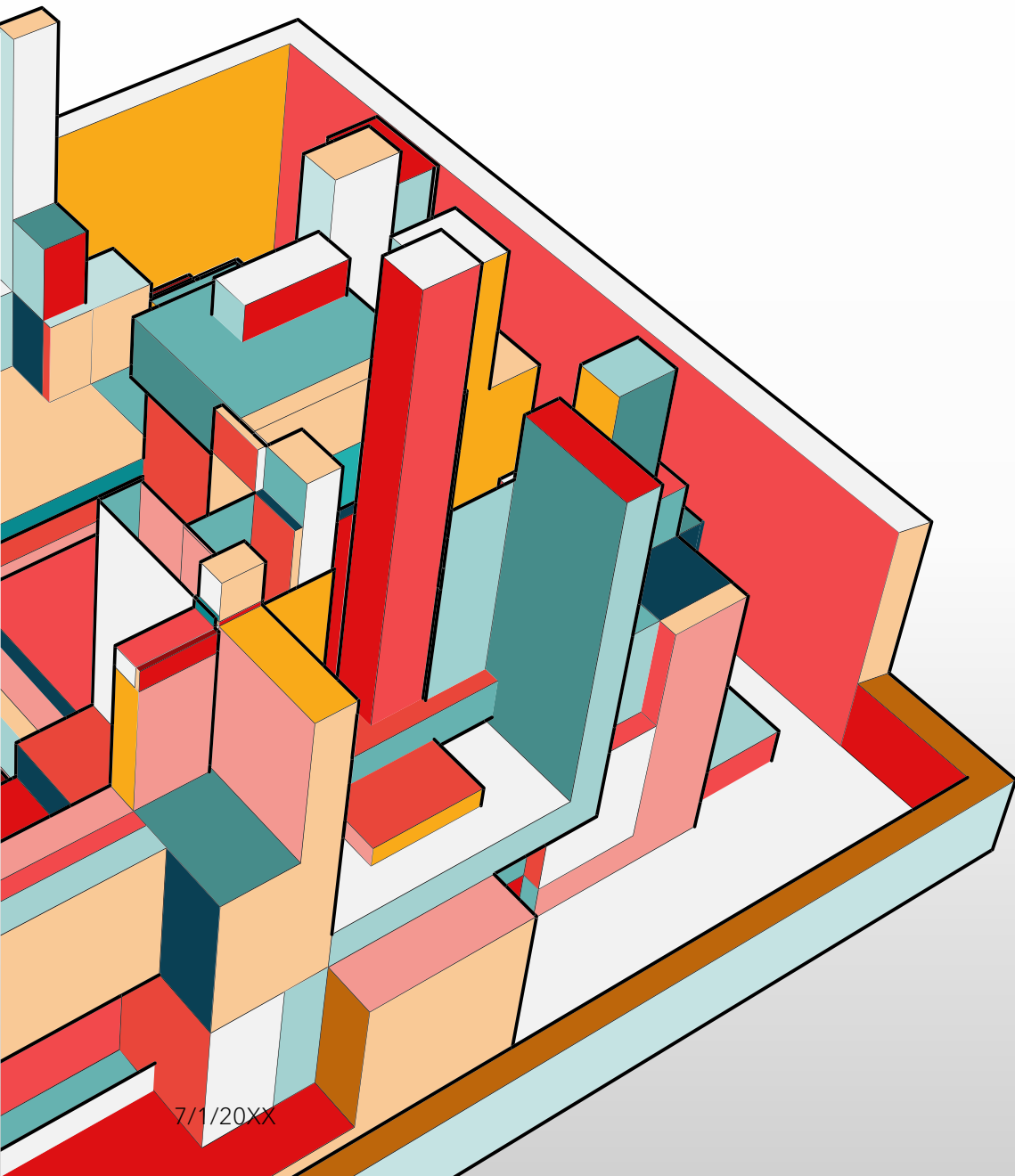
Searching internet for syntax / library options
Searching for small part of solution like connecting to db

Not Allowed

ChatGPT or equivalent
Searching for entire solution



QUESTIONS?



ALL THE BEST