



Finite State Automata

Key questions

- Have you heard of an automaton?
- What kinds of things can "state" refer to?
- What does "finite" mean?

Email or phone

myemail.com

! Couldn't find your account

Trainsylvania

Find your way to **Harbour Station!**

You are currently at:



Station 1: Airport

Do you want to travel on:

Train A

or

Train B

Start over

Sequences

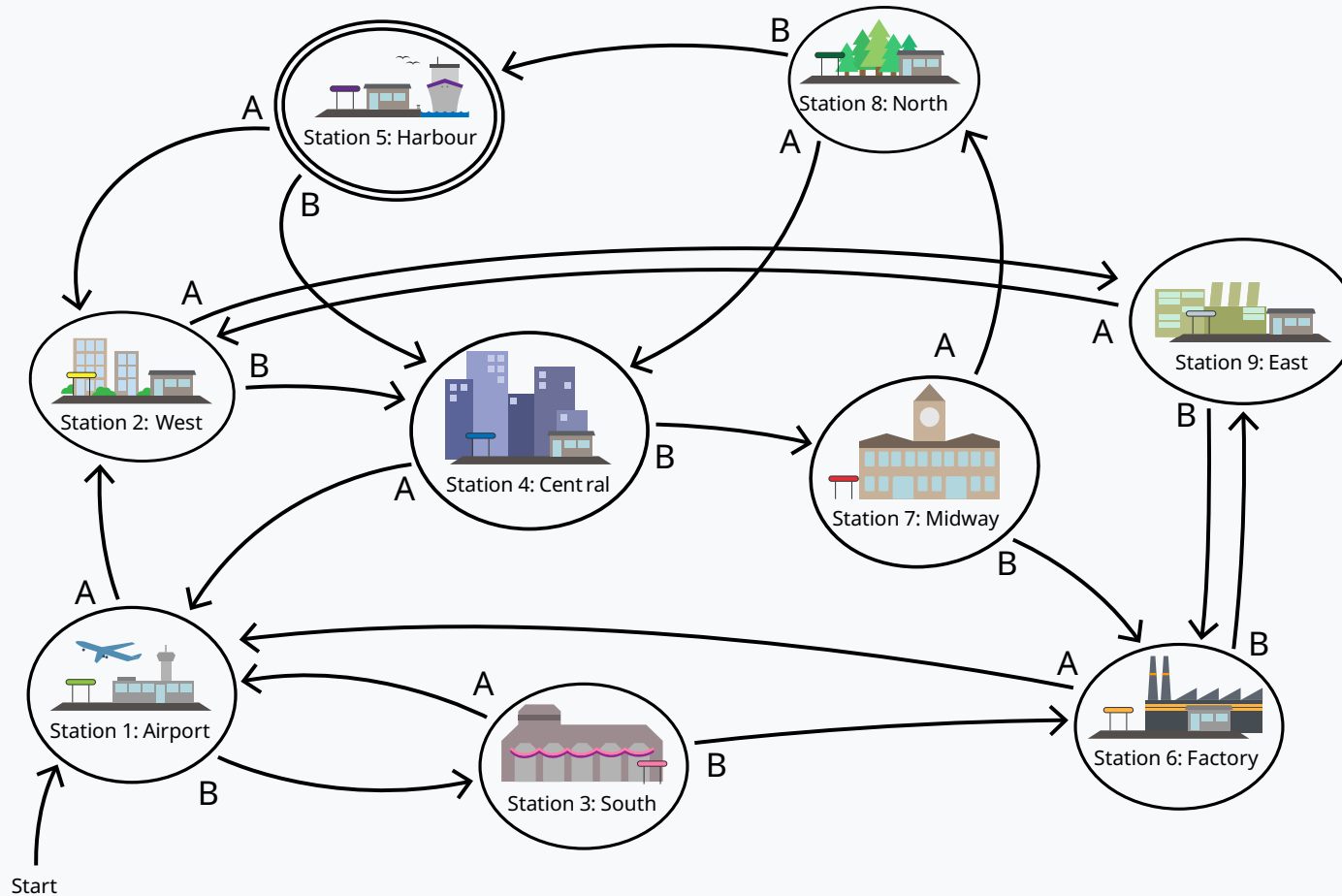
Did we get it right?

Trainsylvania Planner

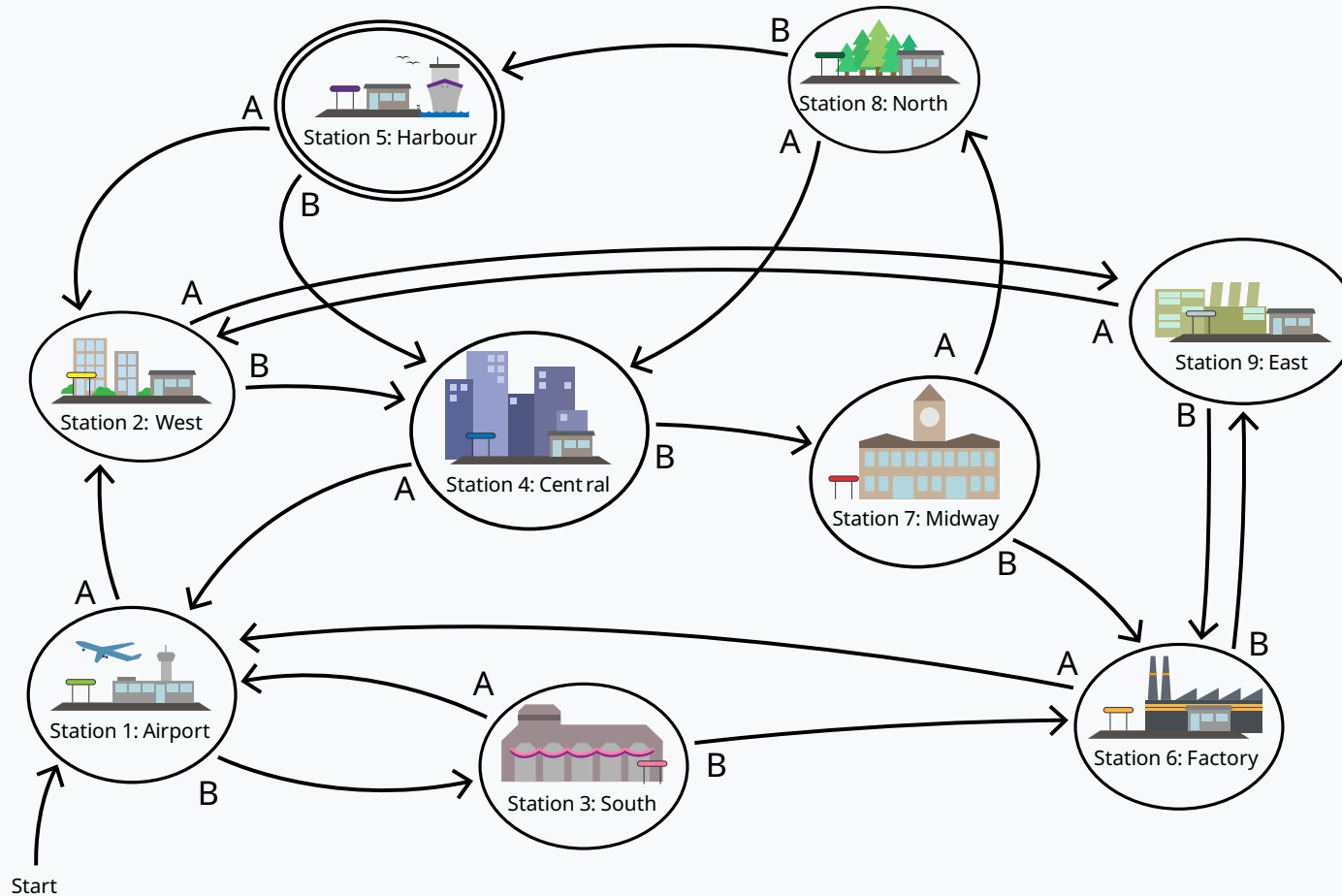
If you take the trains:

You will end up at Station 1: Airport

Map of Trainsylvania

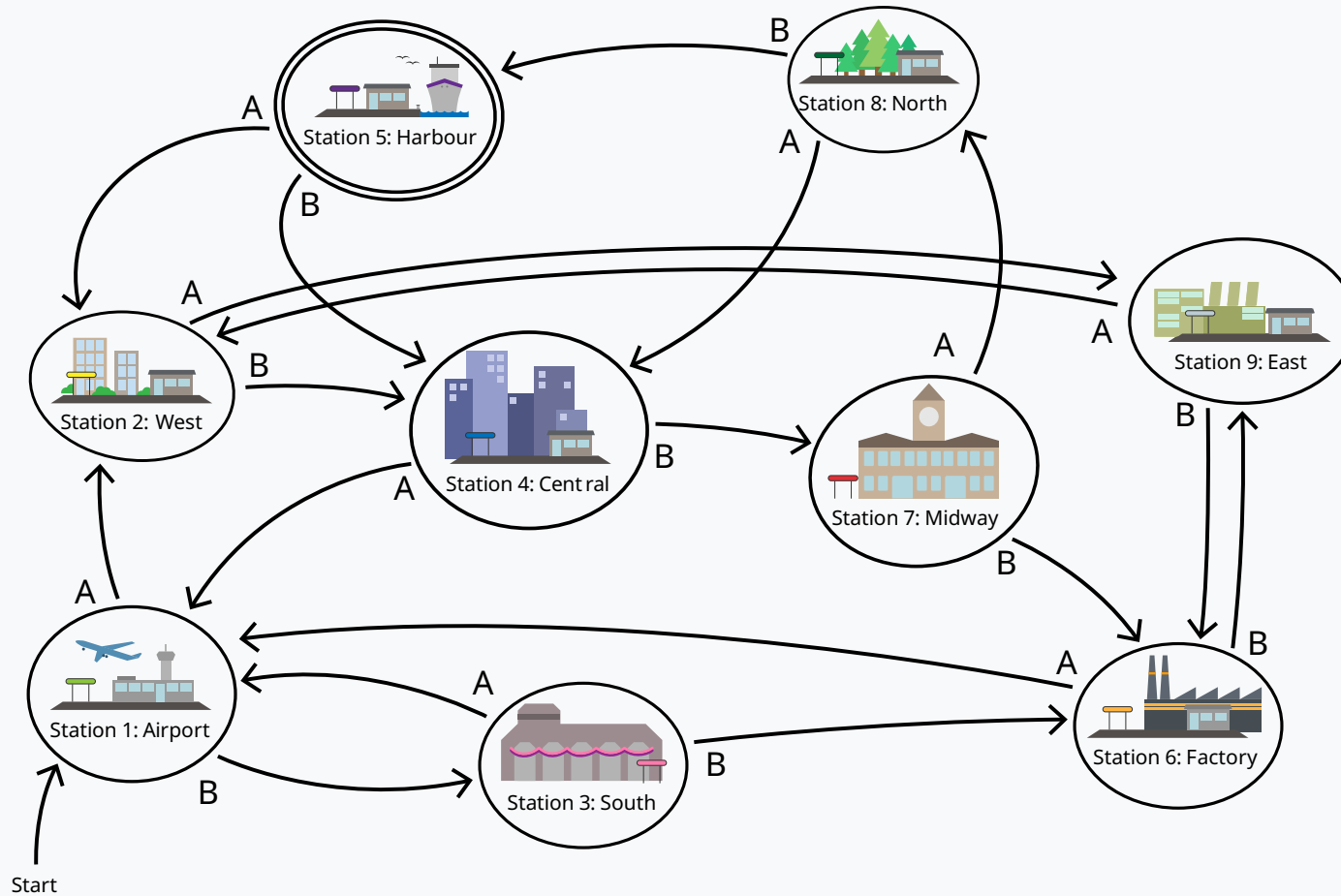


Question 1



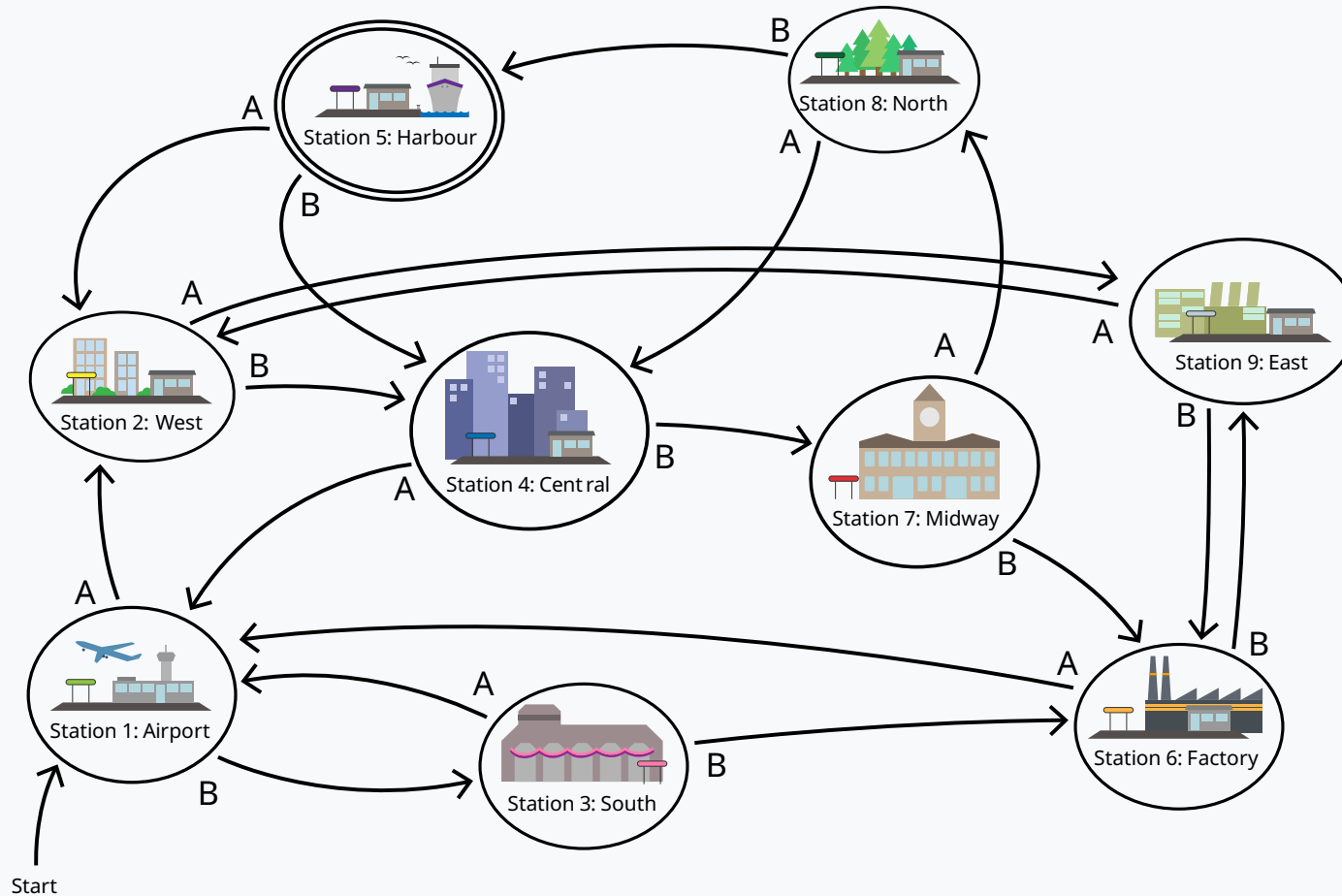
BBB will take us to East Station

Question 2



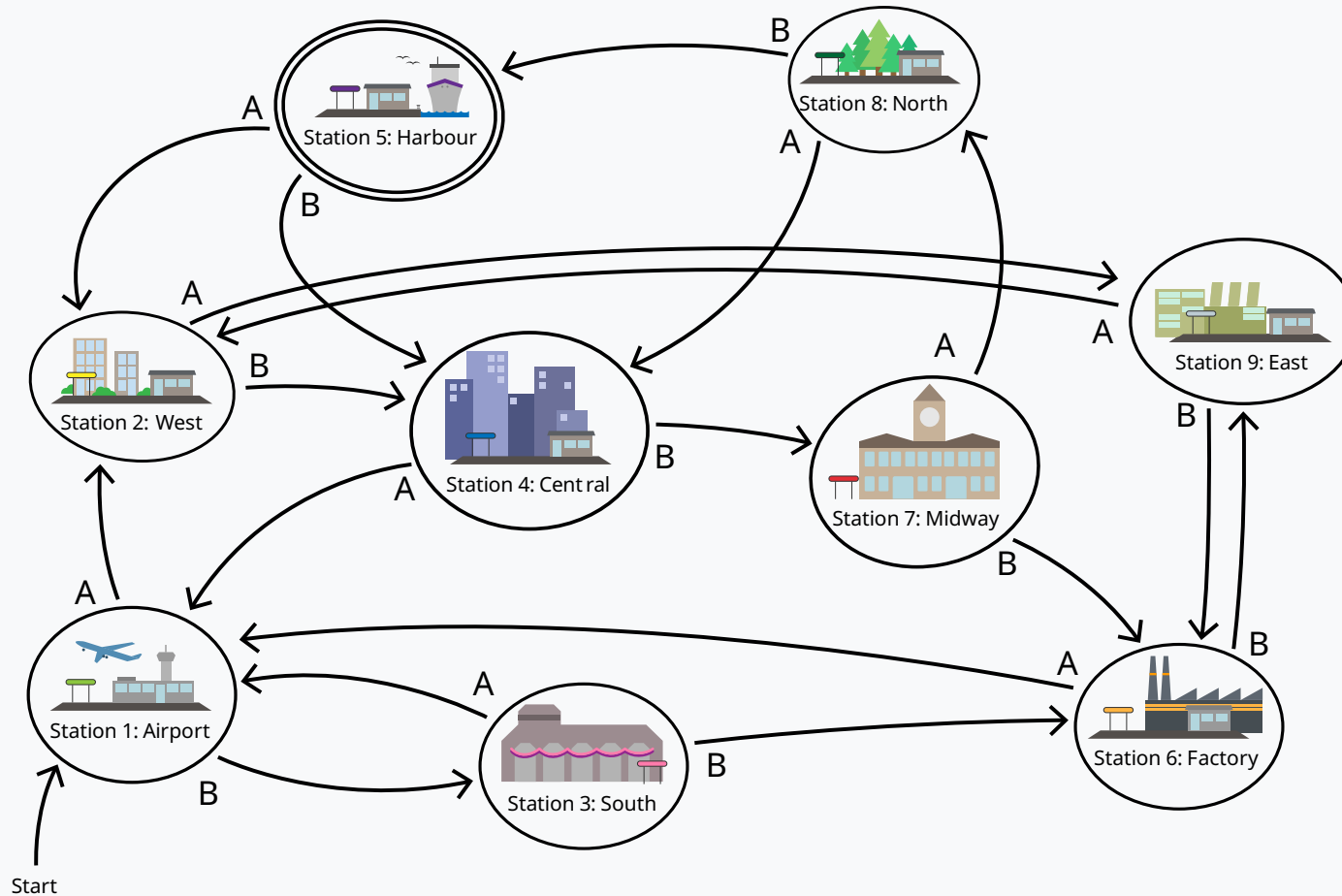
BABA will take us to back to Airport Station

Question 3



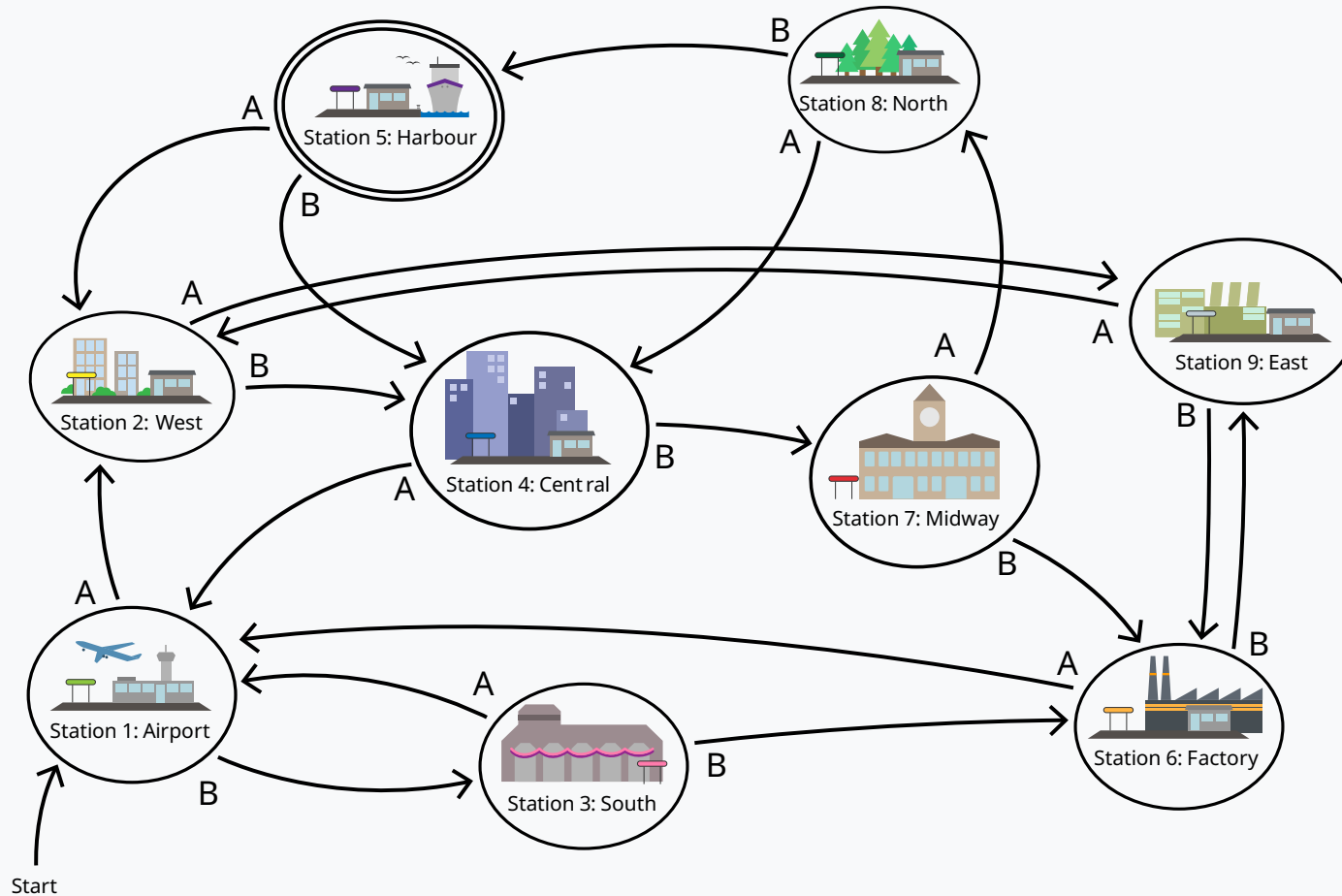
Will AAB get us to Harbour Station? **No**

Question 4



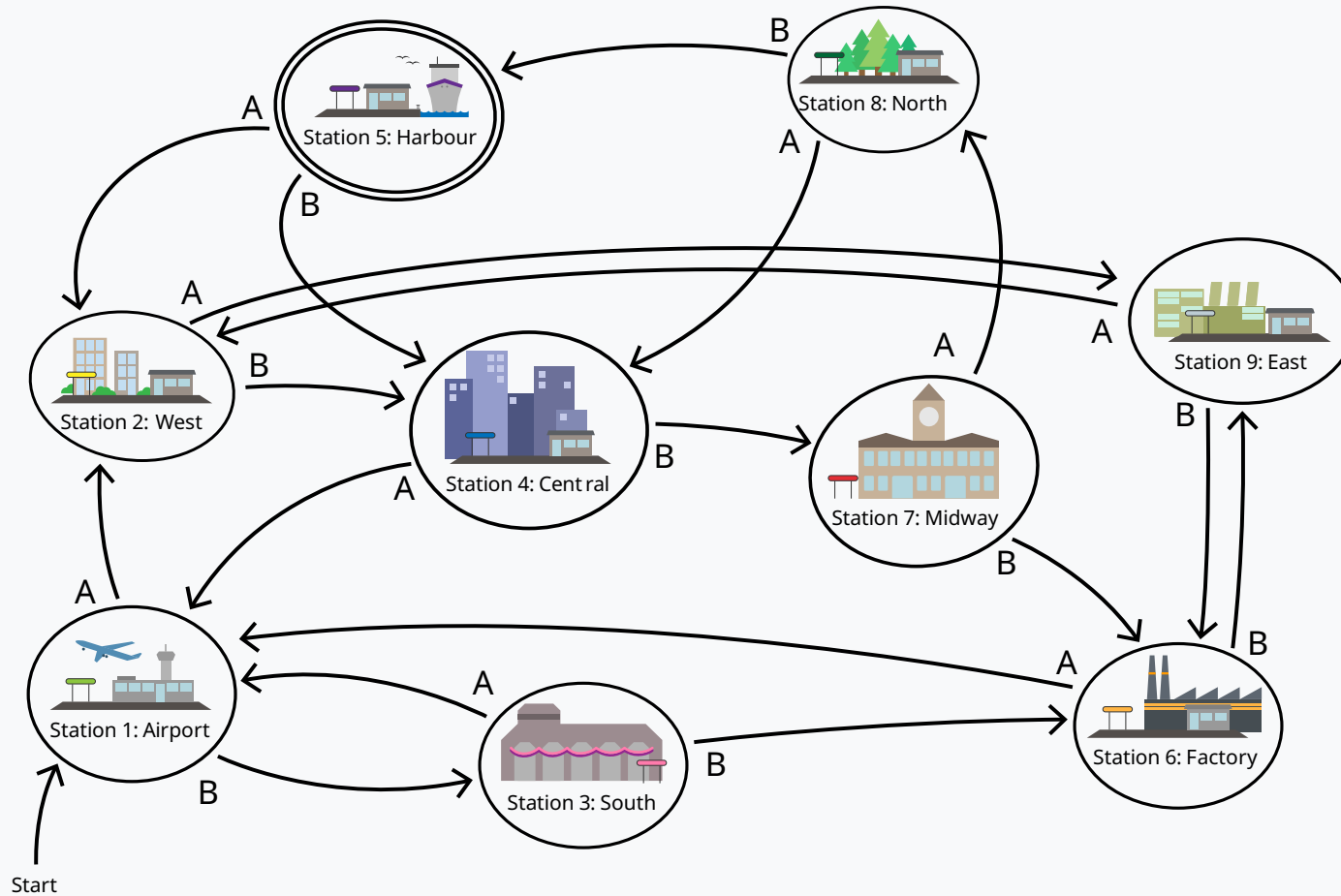
Will ABBAB get us to Harbour Station? **Yes**

Question 5



Will AAABBAB get us to Harbour Station? **Yes**

Question 6



Will BBBB get us to Harbour Station? **No**

What is it all about?

Email or phone

myemail.com

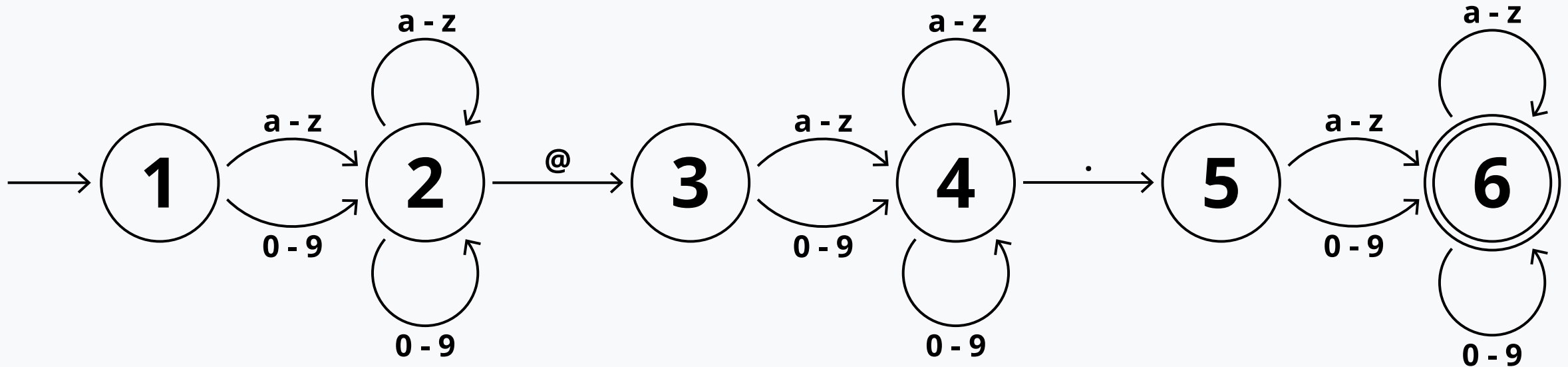
 Couldn't find your account

Is this English?

1. I'm gonna be late
2. ADM;lasdf oodf9 bosfa
3. ancay youay eakspay igpay atinlay?

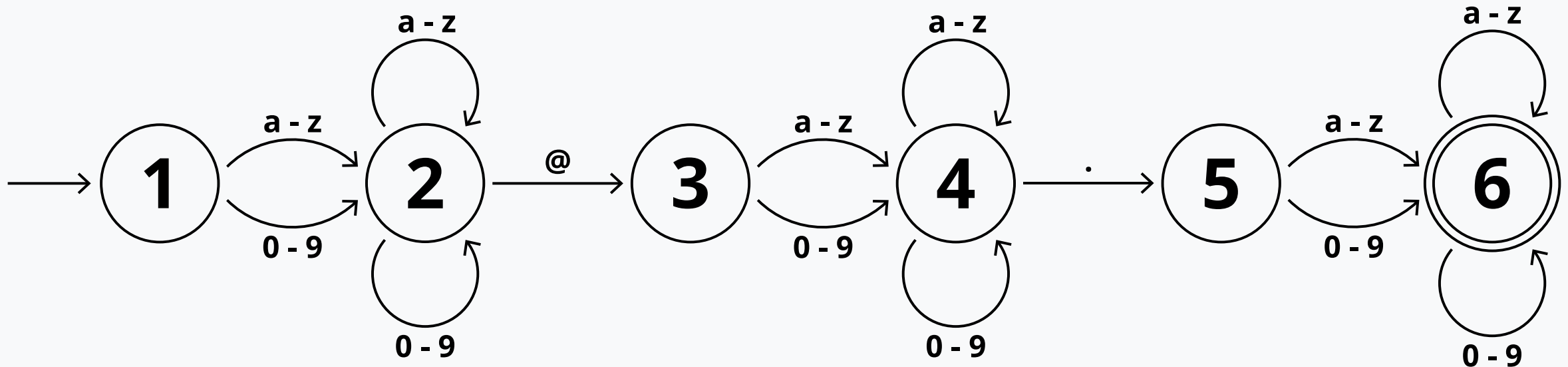
Email address to process

me@a.com



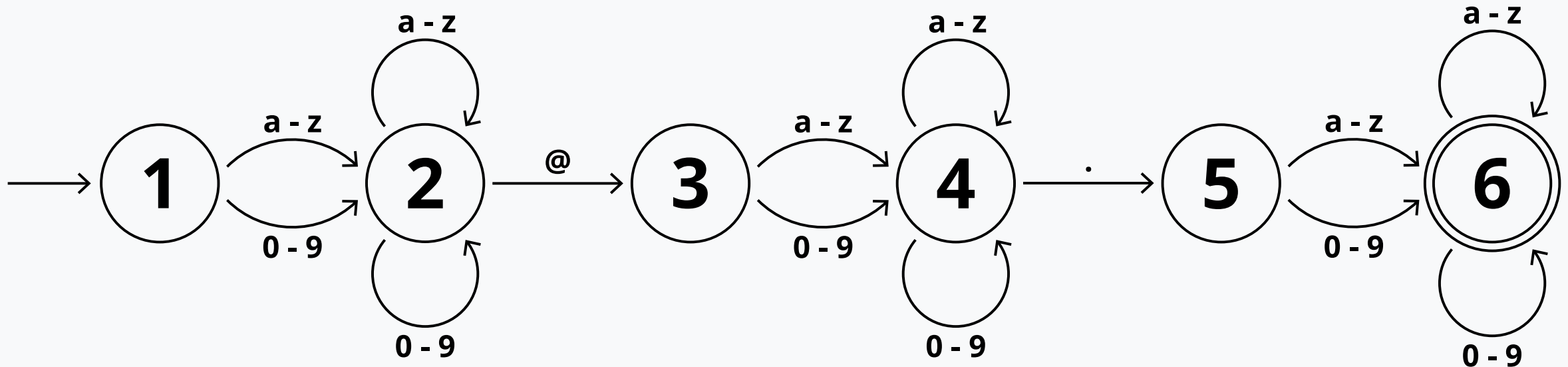
Email address to process

email@gmail.com



Email address to process

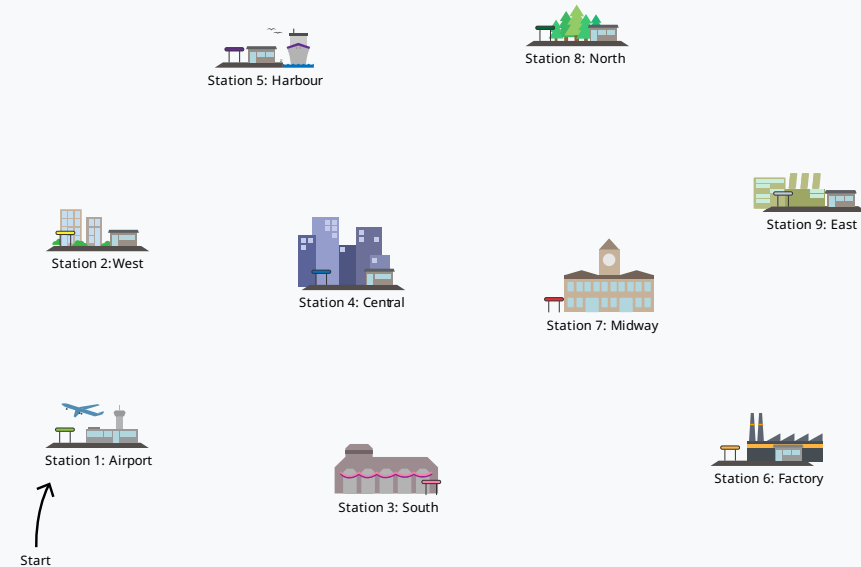
mygooglemail



Finite State Automata

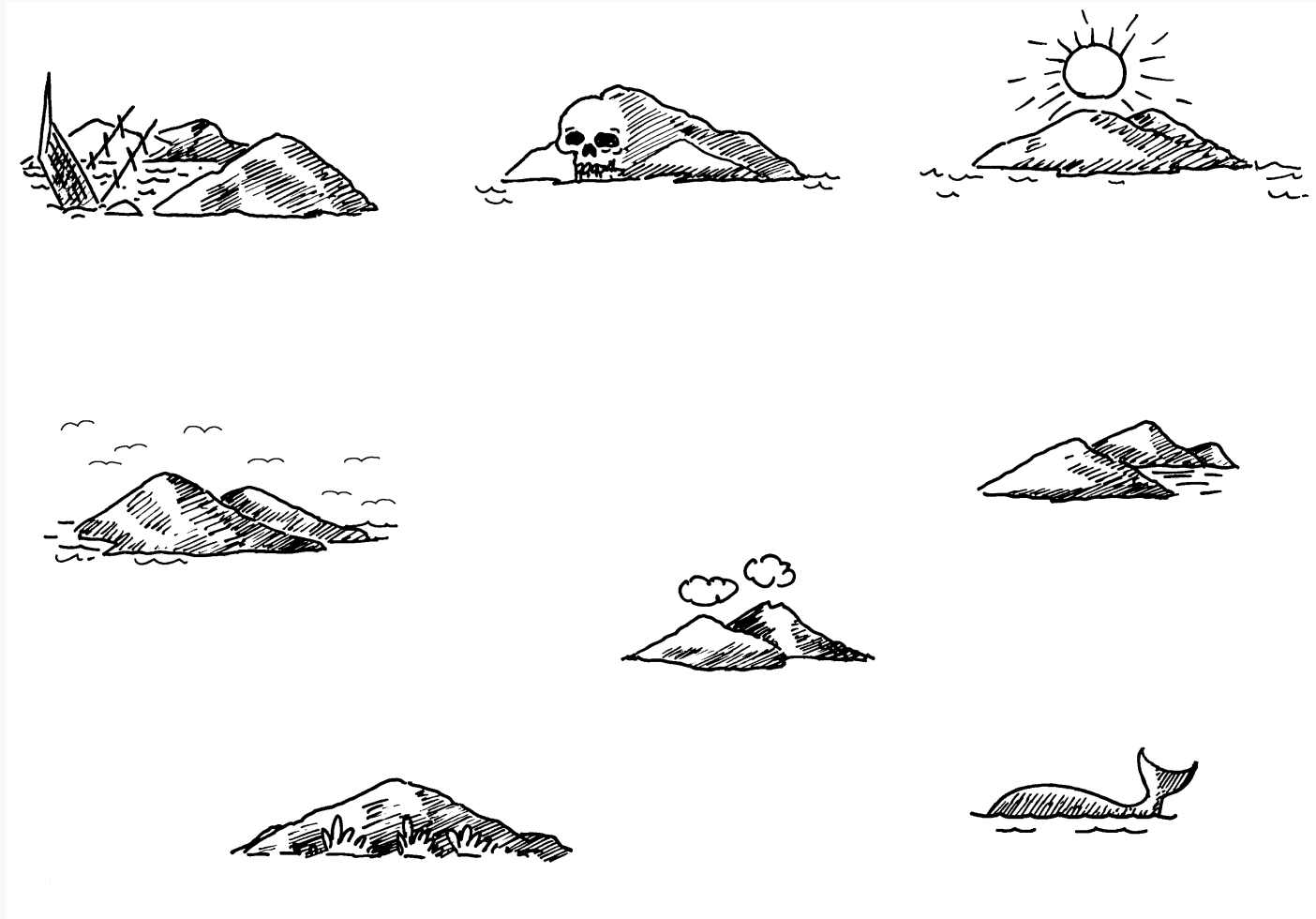
Additional challenges

- Can you find another sequence, perhaps a longer one?
- Suppose you wanted to take a really long route... can you find a sequence of 12 hops that would get you there? 20 hops?



Finite State Automata

Treasure Island version



Supporting Resources

- **Classic CS Unplugged - Treasure Hunt activity**

<https://classic.csunplugged.org/activities/finite-state-automata/>

- **Classic CS Unplugged - Video on FSA**

<https://classic.csunplugged.org/videos/#finite-state-automata>

- **Supporting high school learning - Computer Science Field Guide**

<https://csfieldguide.org.nz/en/chapters/formal-languages/finite-state-automata/>

- **Video supporting high school learning - Regular Languages (especially up to 4:13)**

<https://www.youtube.com/watch?v=PK3wL7DXuuw>