



# 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?

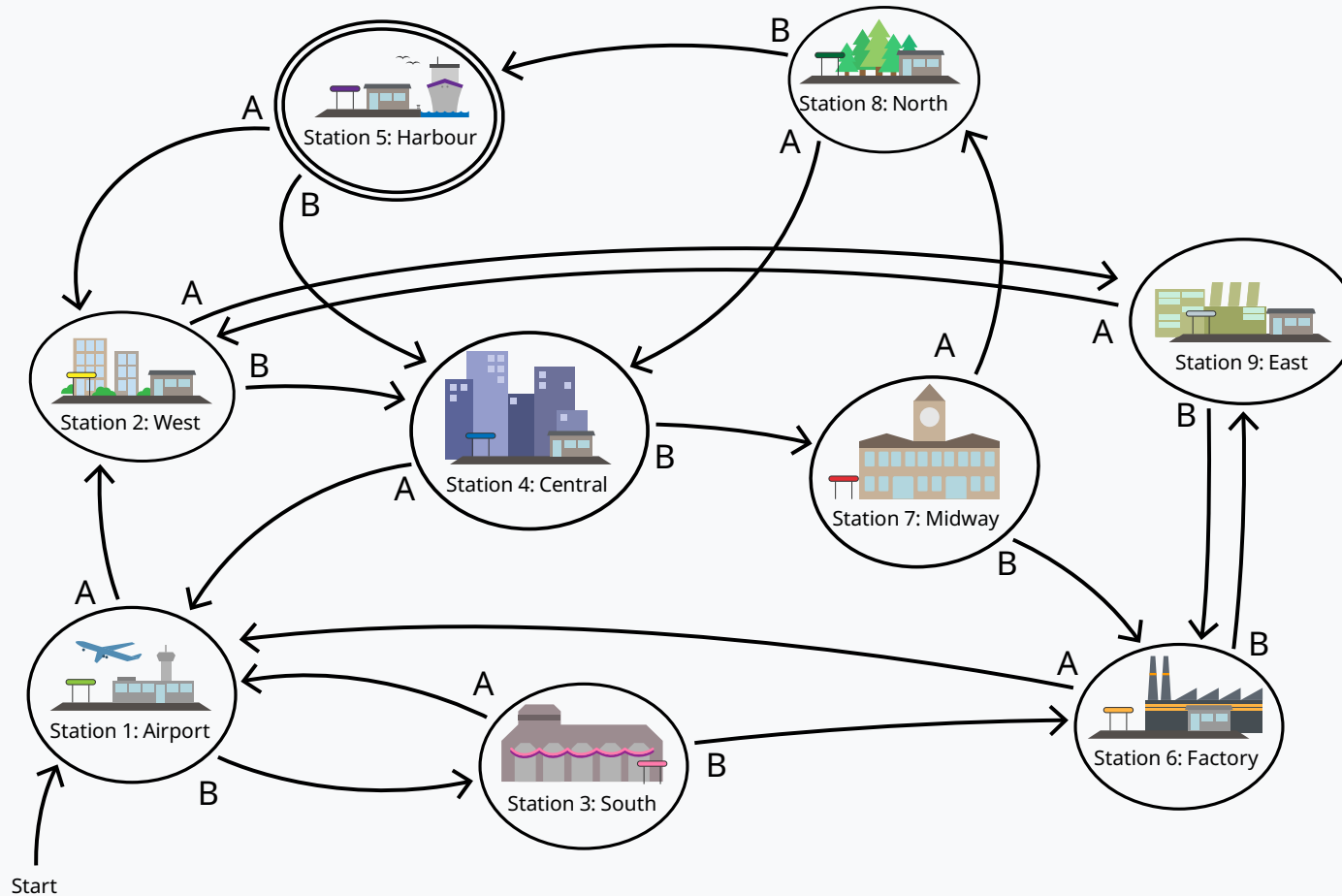
### Trainsylvania Planner

If you take the trains:

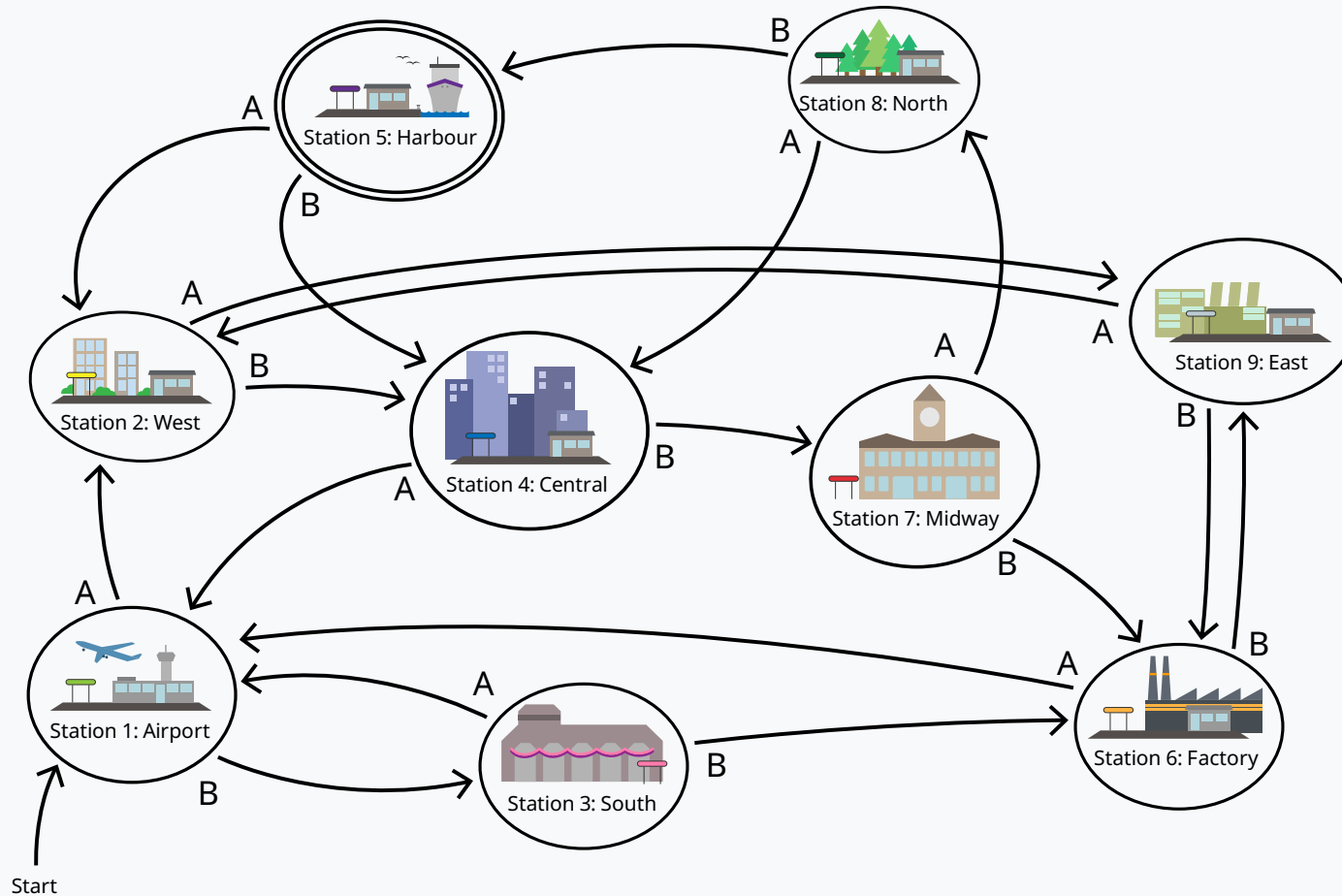
Enter sequence of A's and B's here

You will end up at Station 1: Airport

# Map of Trainsylvania

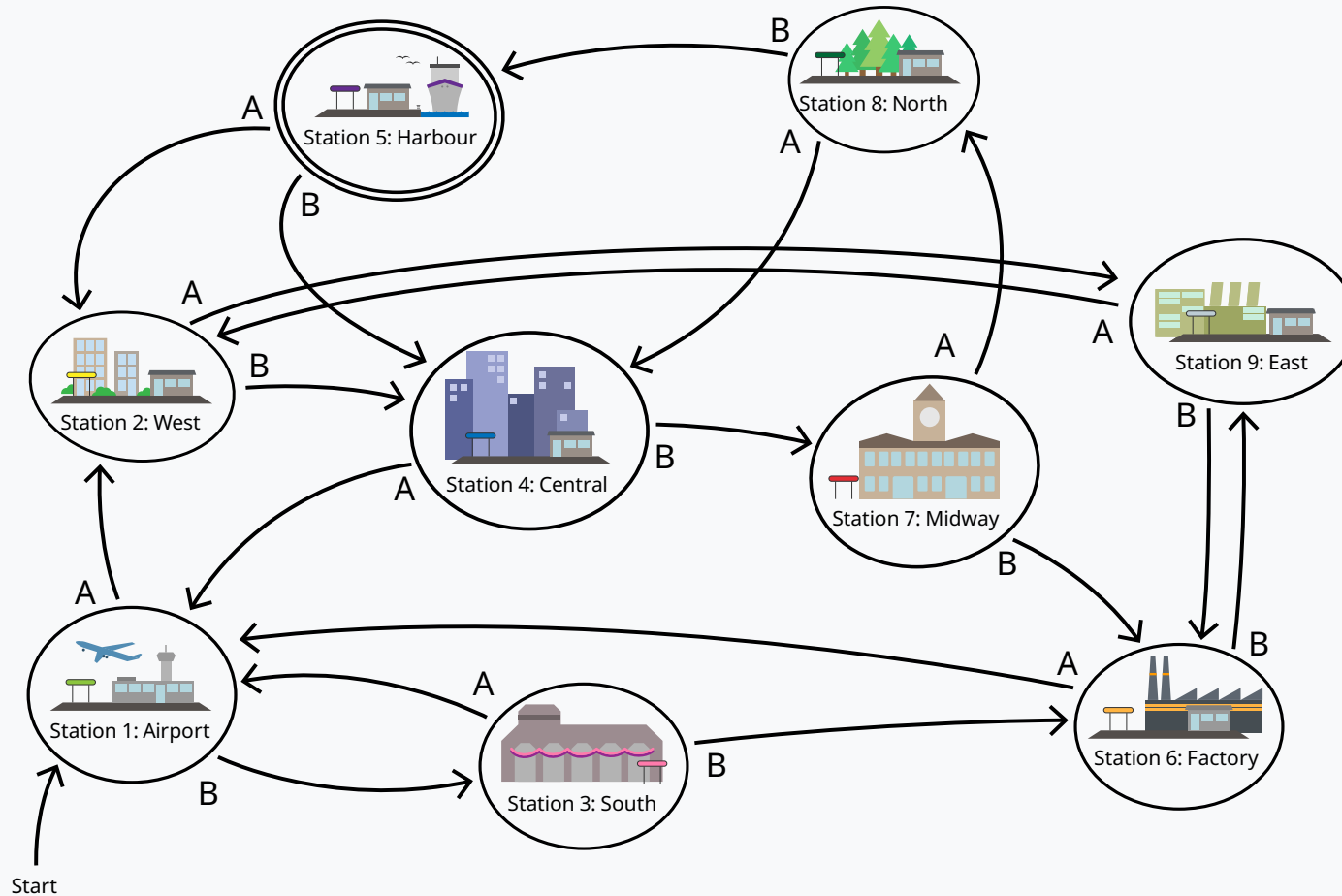


# Question 1



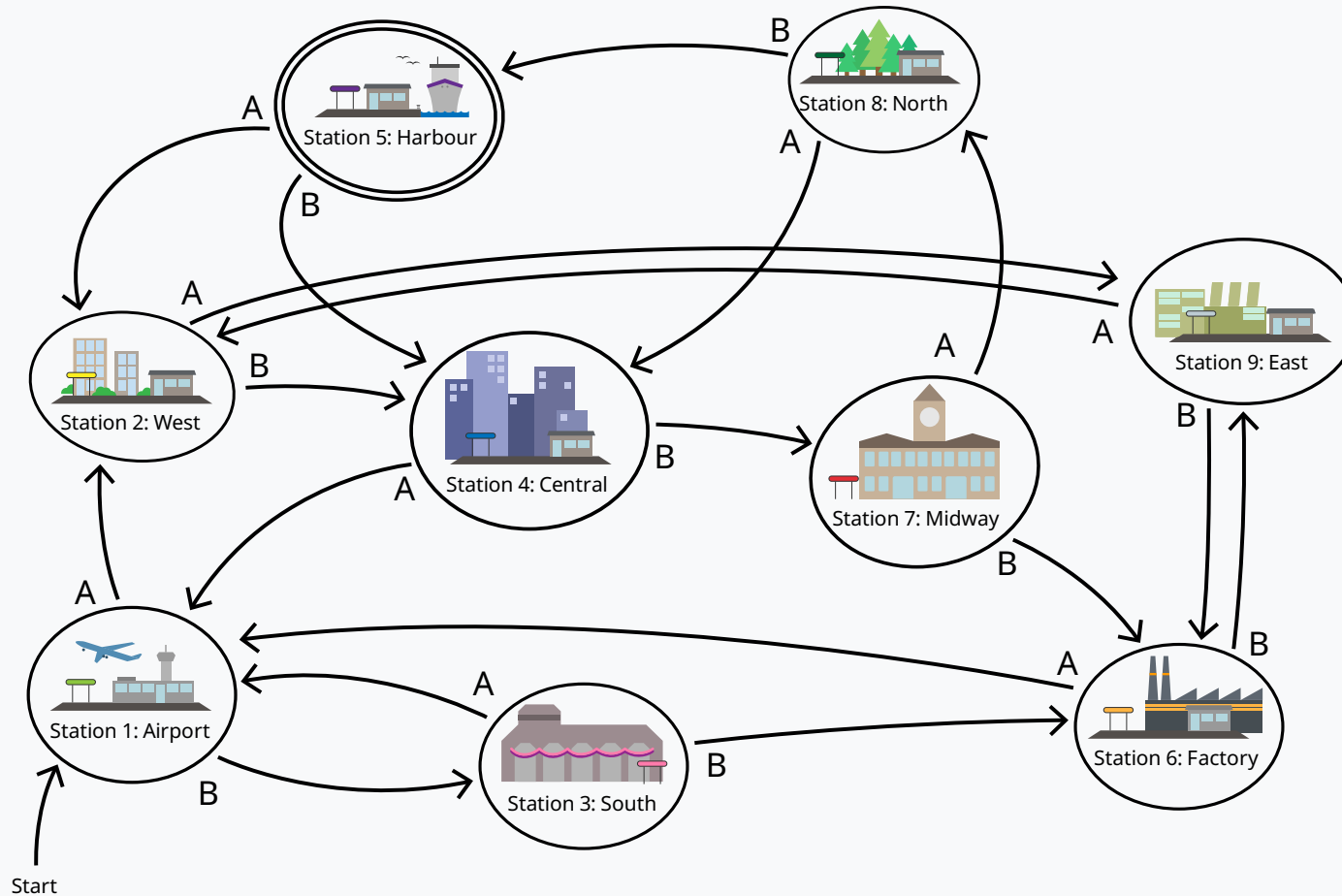
BBB will take us to East Station

# Question 2



BABA will take us to back to Airport Station

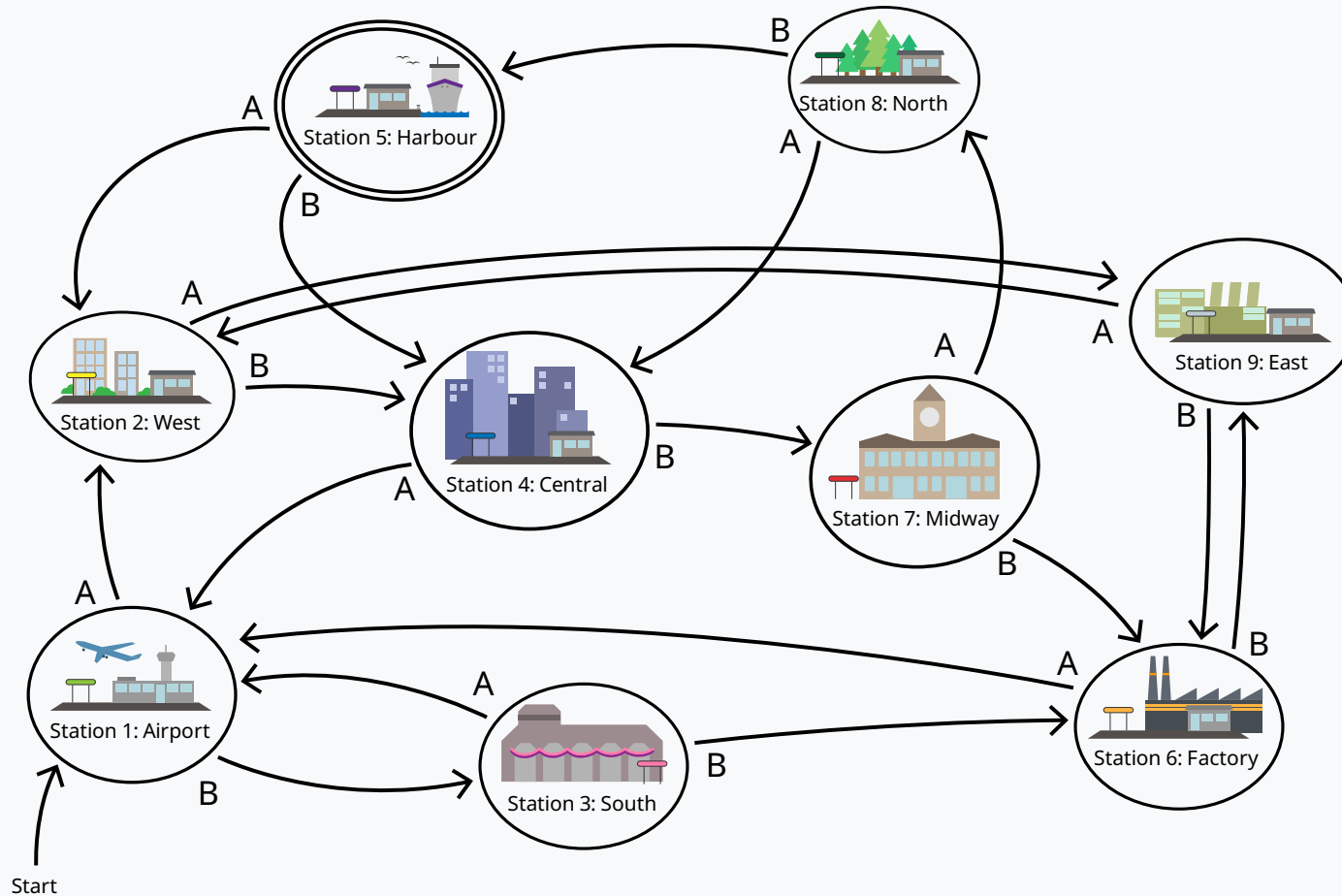
# Question 3



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

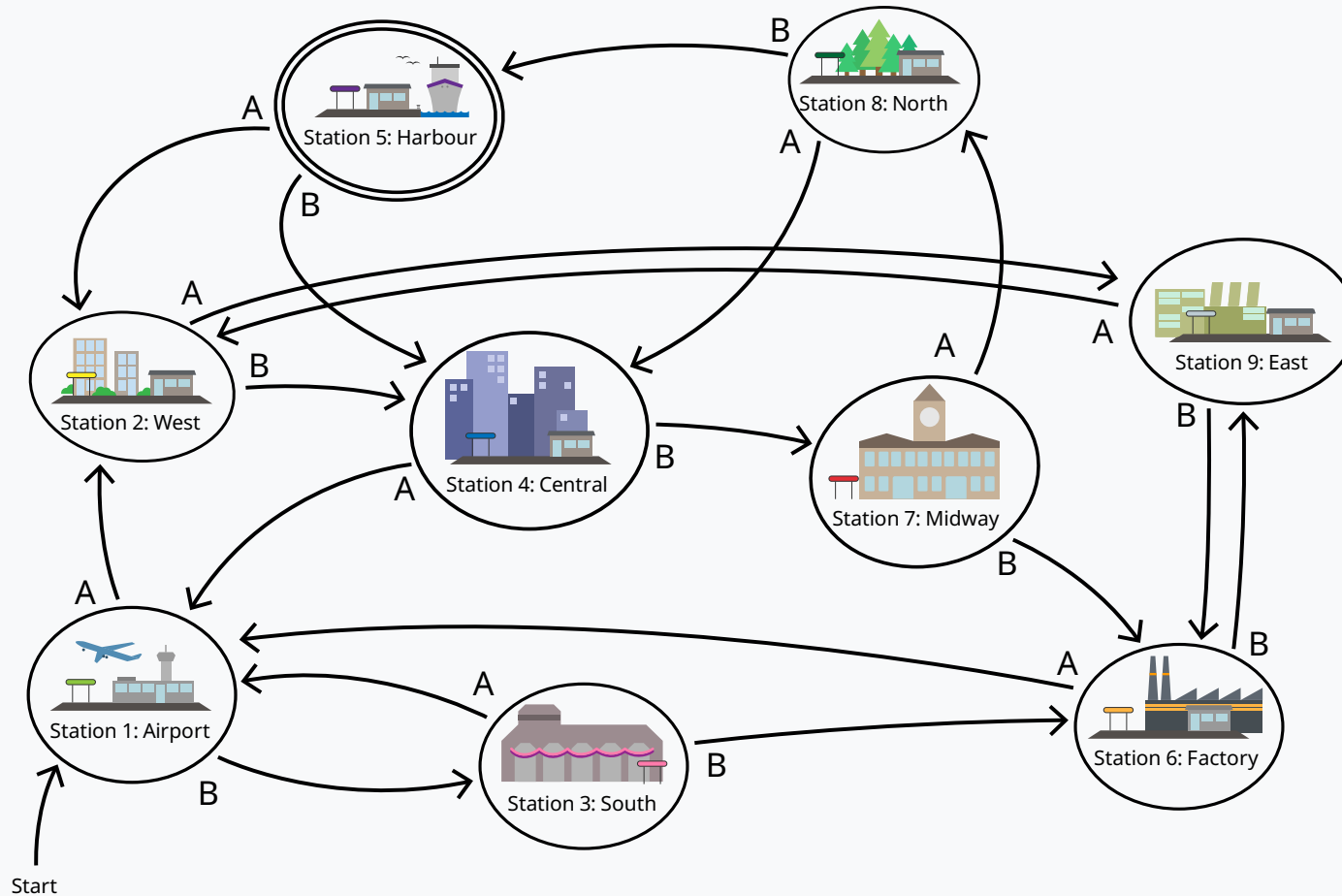


# Question 4



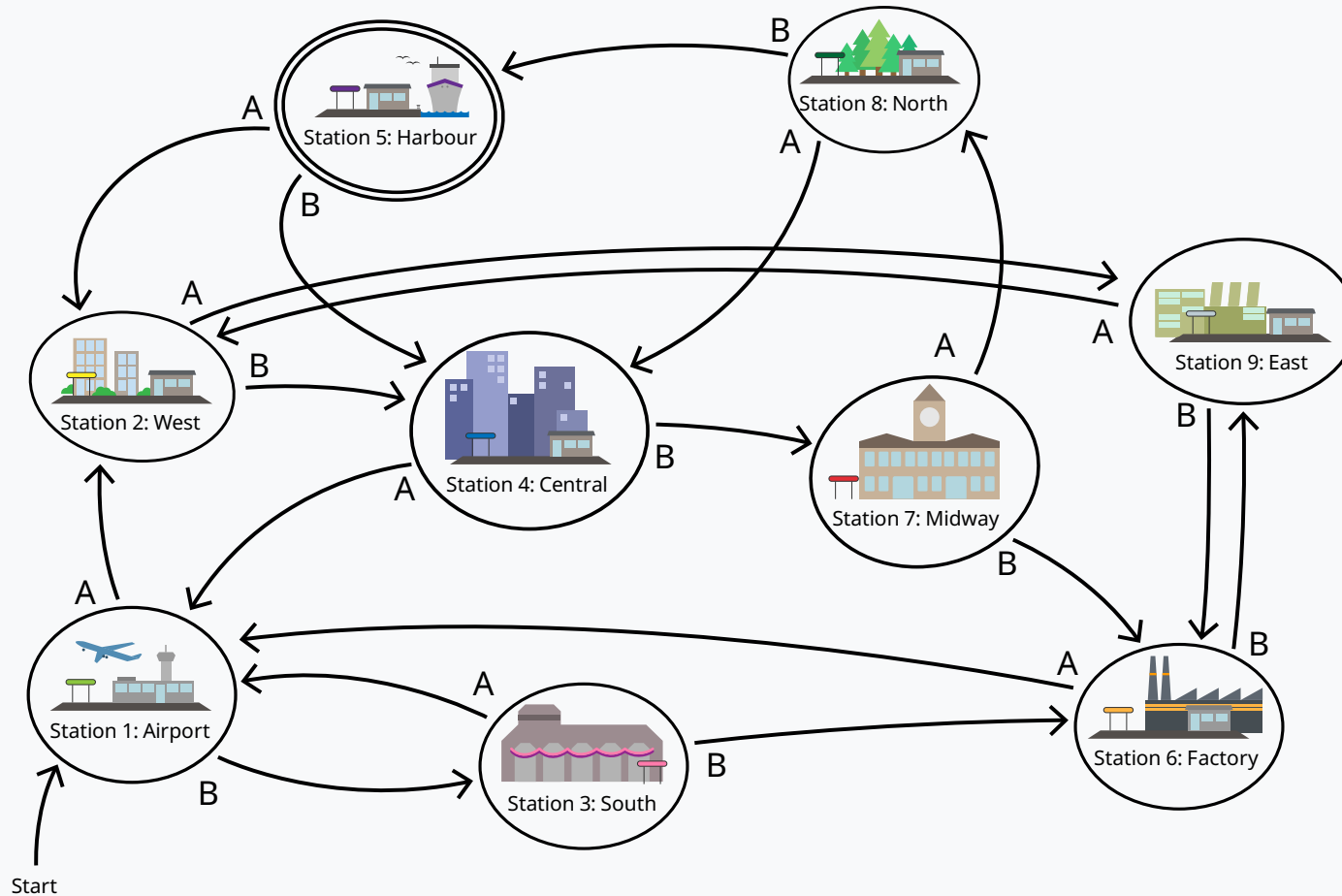
Will ABBAB get us to Harbour Station? **Yes**

# 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

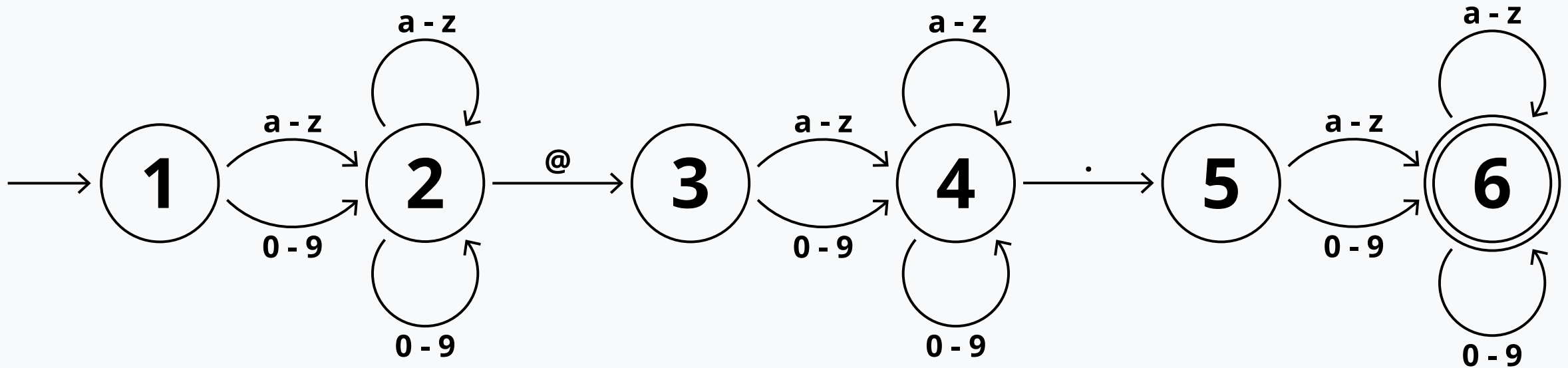
! Couldn't find your account

# Is this English?

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

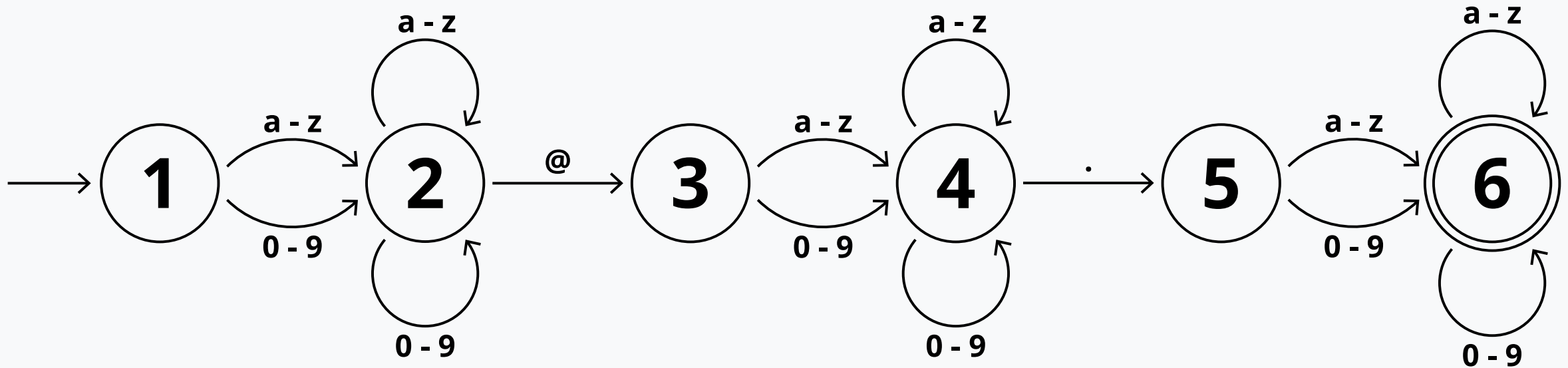
Email address to process

me@a.com



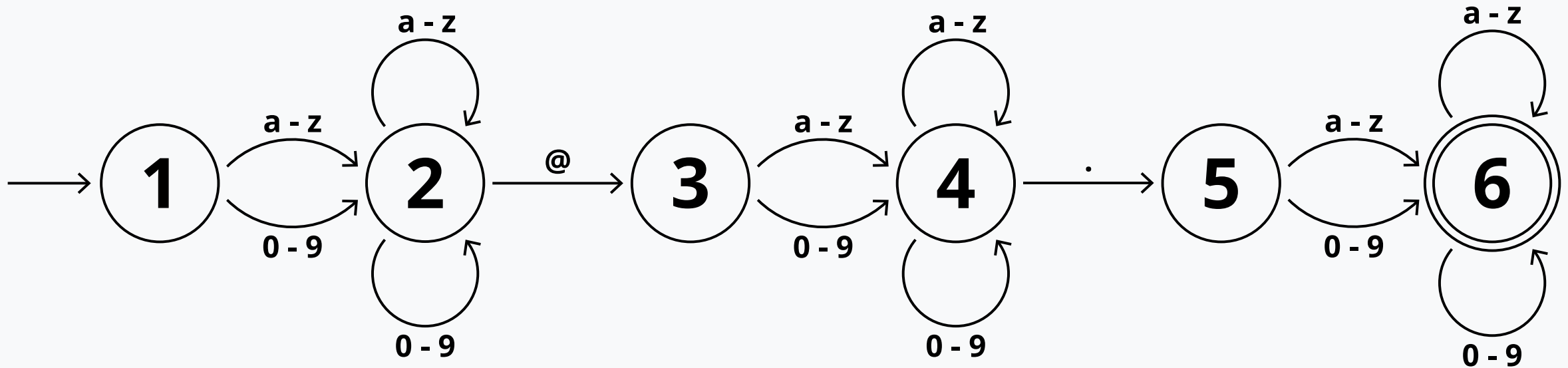
Email address to process

email@gmail.com



Email address to process

mygooglemail

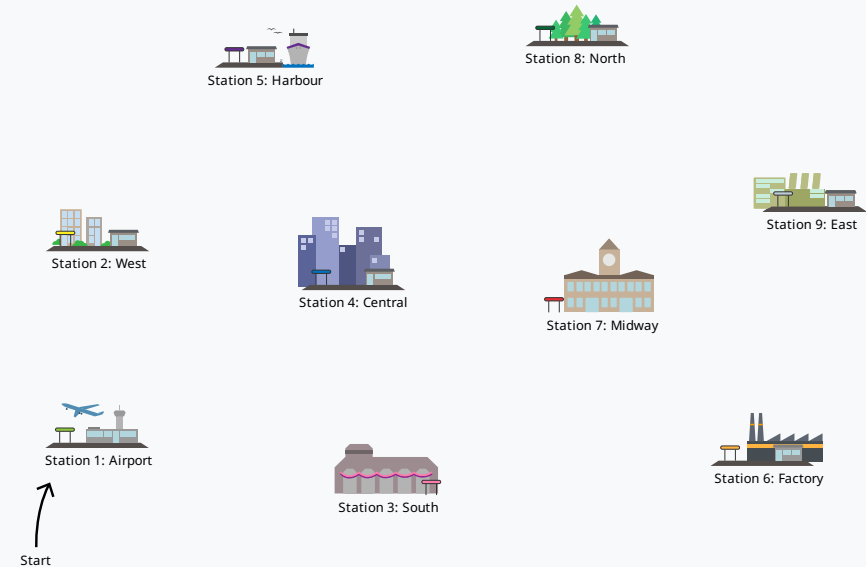




# Finite State Automata

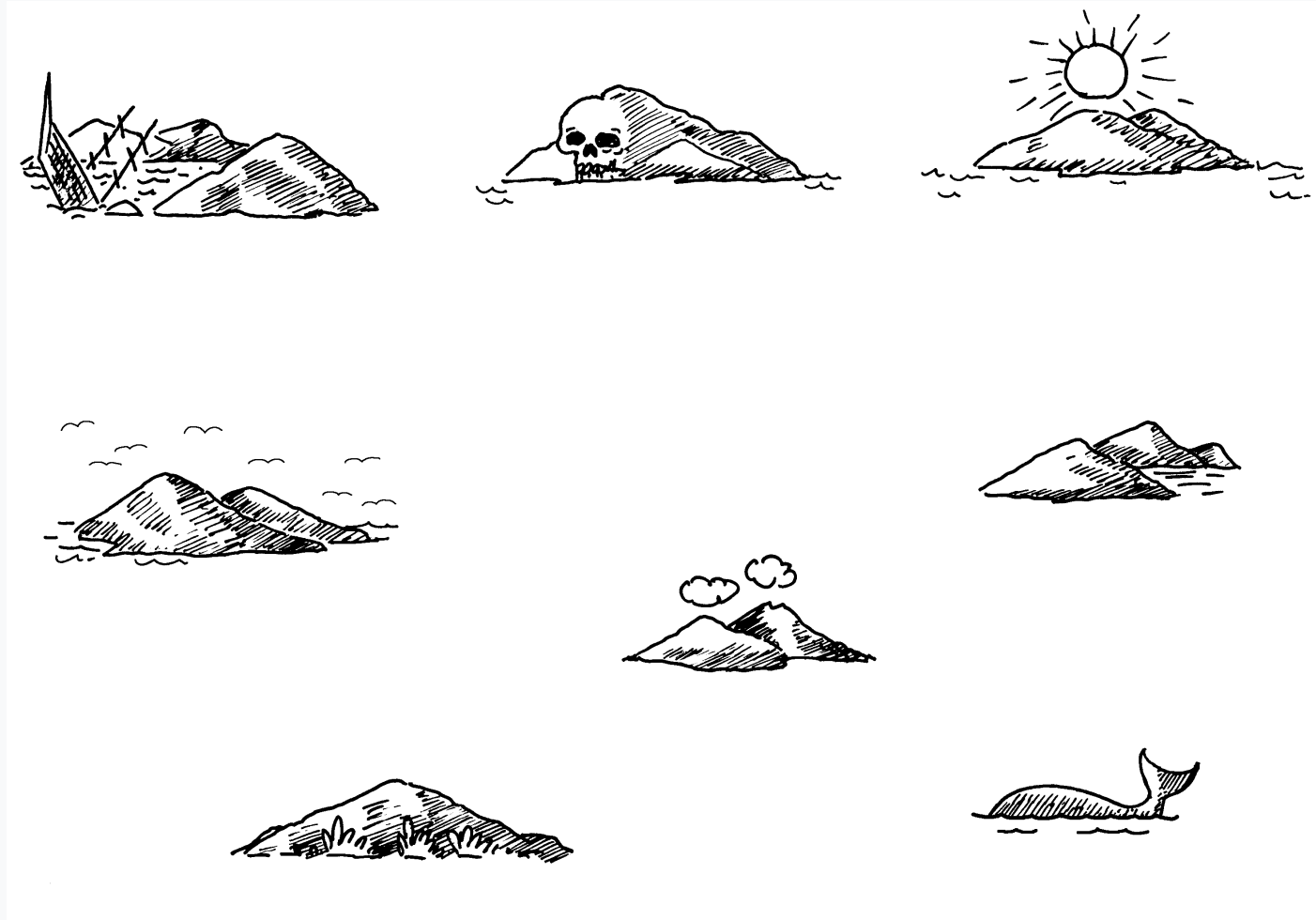
## Additional challenges

- 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>