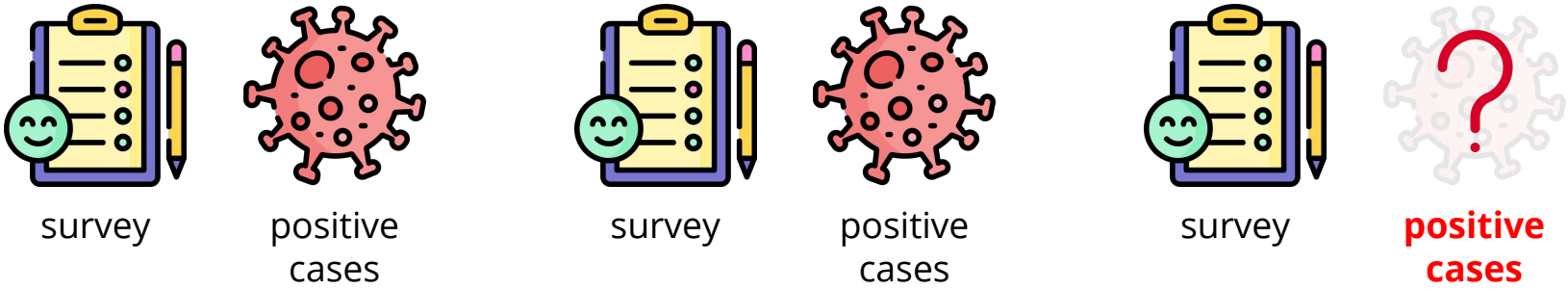
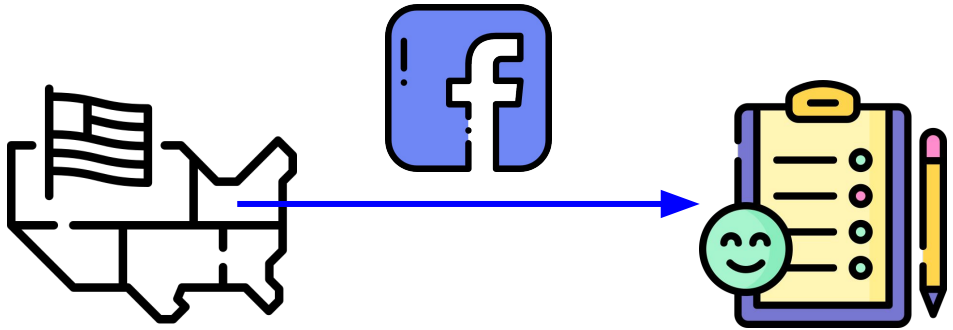
Task Description

- Given survey results in the **past 3 days** in a specific **state** in U.S., then predict the percentage of **new tested positive cases** in the 3rd day.



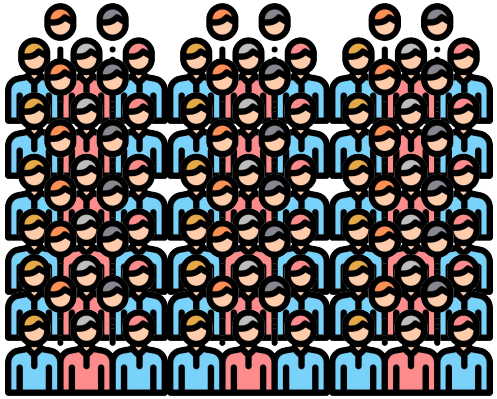
Data -- Delphi's COVID-19 Surveys



Conducted surveys via facebook (**every day** & **every state**)

Survey: symptoms, COVID-19 testing, social distancing, mental health, demographics, economic effects, ...

Data -- Delphi's COVID-19 Surveys



All population in a certain state of the U.S.

some samples

survey

estimation for all population in that state (data we are using)

Data -- Delphi's COVID-19 Surveys

- **States** (40, encoded to **one-hot** vectors)
  - e.g. `AL, AK, AZ, ...`
- **COVID-like illness** (4)
  - e.g. `cli,ili` (influenza-like illness), ...
- **Behavior Indicators** (8)
  - e.g. `wearing_mask, travel_outside_state, ...`
- **Mental Health Indicators** (5)
  - e.g. `anxious, depressed, ...`
- **Tested Positive Cases** (1)
  - **`tested_positive`** (this is what we want to predict)

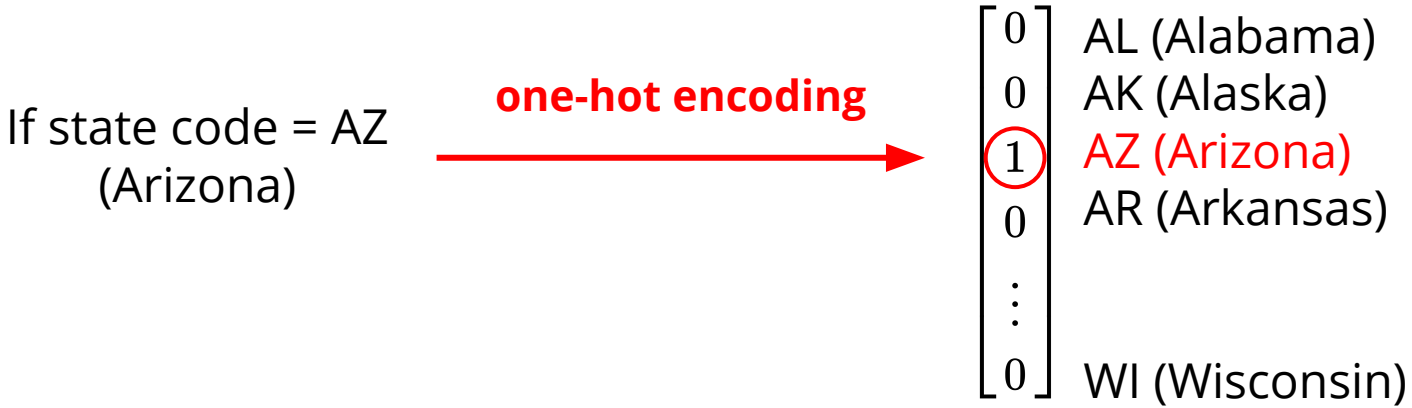
} Percentage

Data -- One-hot Vector

- **One-hot vectors**:

  Vectors with **only one element equals to one** while others are zero.

  Usually used to encode discrete values.



Data -- Training

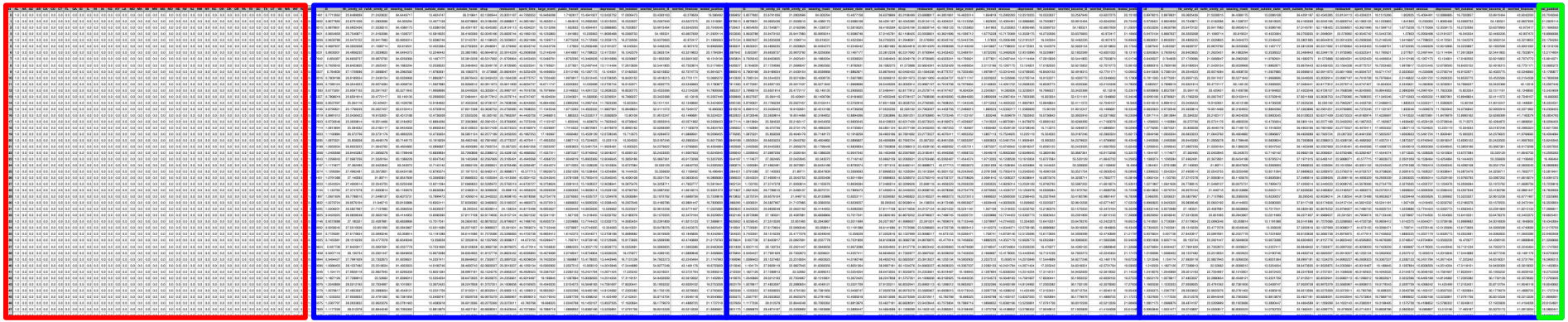
`covid.train.csv` (2700 samples)

state one-hot encoding (40)

Day 1 features (18)

Day 2 features (18)

Day 3 features (18)



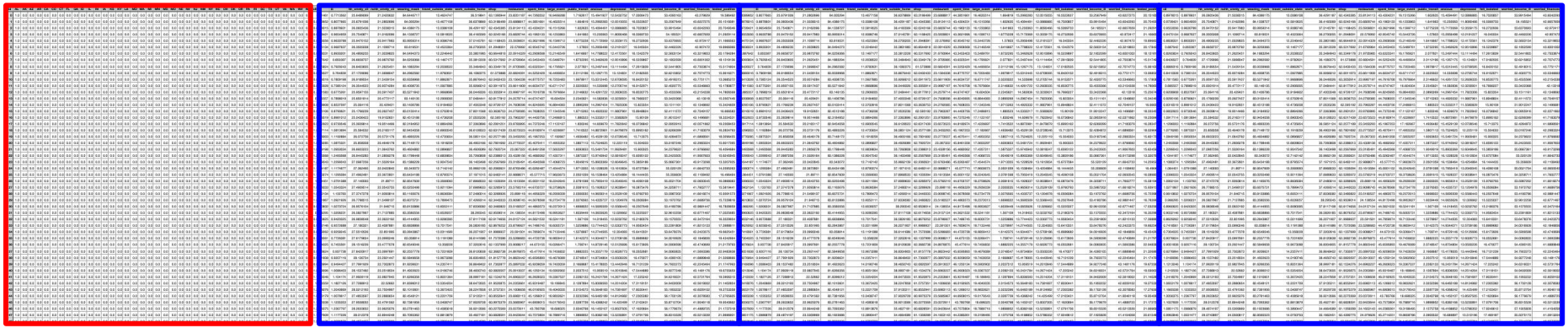
tested positive

1 row = 1 sample

Data -- Testing

`covid.test.csv` (893 samples)

state one-hot encoding (40) | **Day 1 features (18)** | **Day 2 features (18)** | **Day 3 features (17)**



1 row = 1 sample