Today we will implement the forward backward algorithm in python.
First we will implement the forward part:

Input data:

```
states = ('Healthy', 'Fever')
end_state = 'E'

observations = ('normal', 'cold', 'dizzy')

start_probability = {'Healthy': 0.6, 'Fever': 0.4}

transition_probability = {
   'Healthy' : {'Healthy': 0.69, 'Fever': 0.3, 'E': 0.01},
   'Fever' : {'Healthy': 0.4, 'Fever': 0.59, 'E': 0.01},
   }

emission_probability = {
   'Healthy' : {'normal': 0.5, 'cold': 0.4, 'dizzy': 0.1},
   'Fever' : {'normal': 0.1, 'cold': 0.3, 'dizzy': 0.6},
   }
```

1. Write a function receiving as input: observations, states, start_prob, trans_prob, emm_prob, end_st
   And calculating the forward probabilities. Have a loop over all time steps t, while each iteration performs a sum over all states of previous time step
2. Write the backward pass by iterating over all observations from the end to the current state, summing over all states using the next state in the calculation
3. Combine the two algorithms results by multiplying the forward value by the backward value and dividing by total probability
4. Return the forward, backward and combined values

You can use the implementation at the bottom of this wikipedia page as reference:
https://en.wikipedia.org/wiki/Forward%E2%80%93backward_algorithm