Quiz Section Week 7

Viterbi and more functions

2019-05-16

1. HMMs

2. Python (I): random numbers

What are some situations where you'd want to generate random numbers?

- random sequences for null distribution of a sequence alignment
- A Markov change that changes states probabilistically

`Python` module `random`

The `random` function of the `Python` module `random` returns a uniformly distributed random value between 0 and 1.

```
import random
r = random.random()
print(r)
0.261256363123
```

How can we use random numbers to simulate coin flips?

pseudocode

```
import random
# return heads or tails
def coinflip():
    v = random.random()
    if f > 0.5:
        return 'Tails'
    else:
        return 'Heads'
```

How could we use random numbers to simulate a dice roll?

2. Python (II): returning values

What does this function do?

How could we return the sum and the product?

- list assignment
- multiple assignment

pass-by-reference vs. pass-by-value

2. Python (III): arguments

required arguments

optional arguments