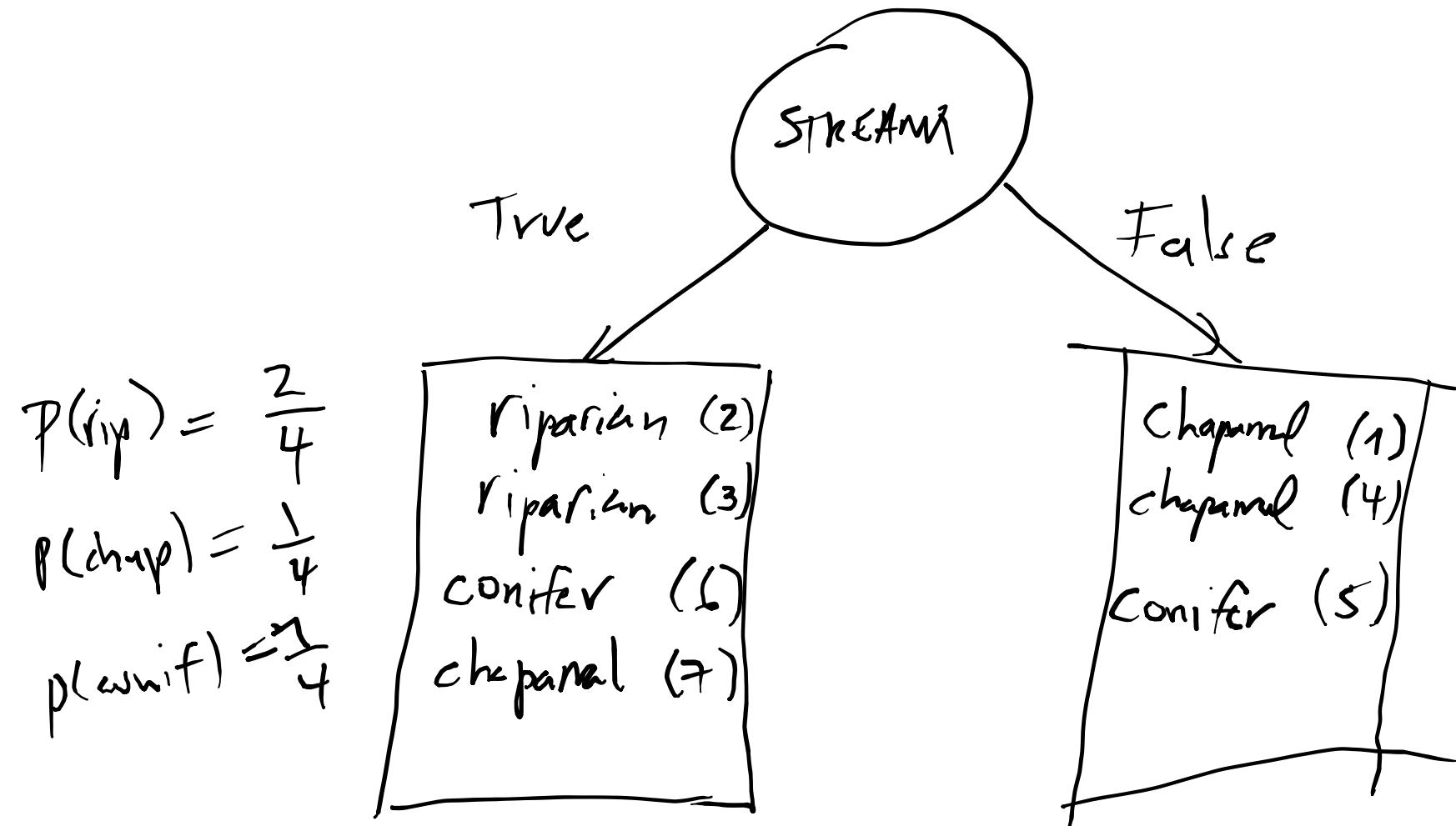


22/04/2020

Online Quiz

$$H(t) = - \left[\left(\frac{4}{12} \right) \log_2 \left(\frac{4}{12} \right) + \frac{8}{12} \log_2 \left(\frac{8}{12} \right) \right]$$

=



$$P(\text{rip}) = \frac{2}{4}$$

$$P(\text{chop}) = \frac{1}{4}$$

$$P(\text{conifer}) = \frac{1}{4}$$

$$\text{Weight}(\text{true}) = \frac{4}{7}$$

$$\text{weight}(\text{false}) = \frac{3}{7}$$

$$P(\text{ripar}) = 0$$

$$P(\text{chop}) = \frac{2}{3}$$

$$P(\text{conifer}) = \frac{1}{3}$$

```
In [1]: import numpy as np
```

```
In [2]: entropy = - ((4/12)*np.log2(4/12)+(8/12)*np.log2(8/12))
```

```
In [3]: entropy
```

```
Out[3]: 0.9182958340544896
```

```
In [4]: entropy_true = -((2/4)*np.log2(2/4)+(1/4)*np.log2(1/4)+(1/4)*np.log2(1/4))
```

```
In [5]: entropy_true
```

```
Out[5]: 1.5
```

```
In [6]: entropy_false = -(0 + (2/3)*np.log2(2/3)+(1/3)*np.log2(1/3))
```

```
In [7]: entropy_false
```

```
Out[7]: 0.9182958340544896
```

```
In [8]: rem_stream = (4/7)*entropy_true + (3/7)*entropy_false
```

```
In [9]: rem_stream
```

```
Out[9]: 1.2506982145947811
```

```
In [10]: IG_stream = 1.5567 - rem_stream
```

```
In [11]: IG_stream
```

```
Out[11]: 0.30600178540521883
```

```
In [13]: variance_true = np.array([900, 4740, 4900, 5800, 6200, 2820])
```

```
In [14]: np.var(variance_true, 'ddof'=1)
File "<ipython-input-14-72c06ba958f3>", line 1
      np.var(variance_true, 'ddof'=1)
                        ^
```

SyntaxError: keyword can't be an expression

```
In [15]:
```

```
In [15]: np.var(variance_true, ddof=1)
```

```
Out[15]: 4026346.666666667
```

```
In [16]: variance_false = np.array([800, 826, 2100, 3000, 2910, 2880])
```

```
In [17]: np.var(variance_false, ddof=1)
```

```
Out[17]: 1077280.0
```

```
In [18]: 0.5*np.var(variance_true, ddof=1)+0.5*np.var(variance_false, ddof=1)
```

```
Out[18]: 2551813.3333333335
```