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CSCE A415  
HW #1.1

## Problem 1: Decision Trees

|  |  |  |  |
| --- | --- | --- | --- |
| Size | Orbit | Habitable | Count |
| big | near | yes | 20 |
| big | far | yes | 170 |
| small | near | yes | 139 |
| small | far | yes | 45 |
| big | near | no | 130 |
| big | far | no | 30 |
| small | near | no | 11 |
| small | far | no | 255 |

### Determine Overall Entropy:

Overall:

### Find the best Gain:

Size:

* Big
* Small

Orbit:

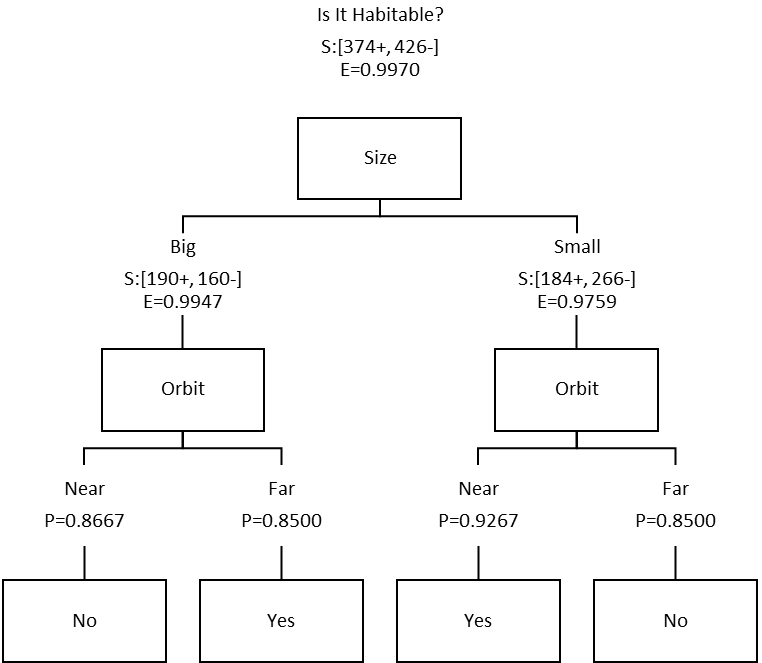
* Near
* Far

### Start the Decision Tree:

There are only two attributes, *size* and *orbit*. The tree will start with *size* because it shows the most gain in the calculations.

### Calculate Orbit Probabilities

Calculating the probability of Y given both attributes for all combinations will give the final Yes/No leaves.



*Wherever you are!*

