**Manual Calculations for Pandas File:**

Subset of Data Below(first 10 rows of our bigger dataset): Only includes relevant columns to pandas functions. If the row is empty that mean that there is no values there.

|  |  |  |  |
| --- | --- | --- | --- |
| Planet Hostname | Planet Name | Planet Count Per System | Planet Mass [Earth Mass] |
| 11 Com | 11 Com b | 1 |  |
| 11 UMi | 11 UMi b | 1 |  |
| 14 And | 14 And b | 1 |  |
| 14 Her | 14 Her b | 1 |  |
| 16 Cyg B | 16 Cyg B b | 1 |  |
| 18 Del | 18 Del b | 1 |  |
| 1RXS J160929.1-210524 | 1RXS J160929.1-210524 b | 1 | 3000 |
| 24 Boo | 24 Boo b | 1 |  |
| 24 Sex | 24 Sex b | 2 |  |
| 24 Sex | 24 Sex c | 2 |  |

**Calculating Average Planets Per :**

Manual Value:

1. Do groupby():

|  |  |
| --- | --- |
| Planet Hostname | Planet Count Per System |
| 11 Com | 1 |
| 11 UMi | 1 |
| 14 And | 1 |
| 14 Her | 1 |
| 16 Cyg B | 1 |
| 18 Del | 1 |
| 1RXS J160929.1-210524 | 1 |
| 24 Boo | 1 |
| 24 Sex | 2 |

1. Find average: 1 + 1 + 1 + 1 + 1+ 1 + 1 + 1 + 2 = 10/9 = **1.1**

When printing the grouped table it looks exactly as it does above in the pandas file.

Pandas Value = **1.111**

**Max number of Planets for a solar system:**

From the dataset we see that number is **2**.  
Value returned from pandas: **2.**

**Average Mass for Solar Systems:**

|  |  |
| --- | --- |
| 1RXS J160929.1-210524 | 3000 |

This should be the return value because we drop NaN values. The function in our code does return this so it is correct.