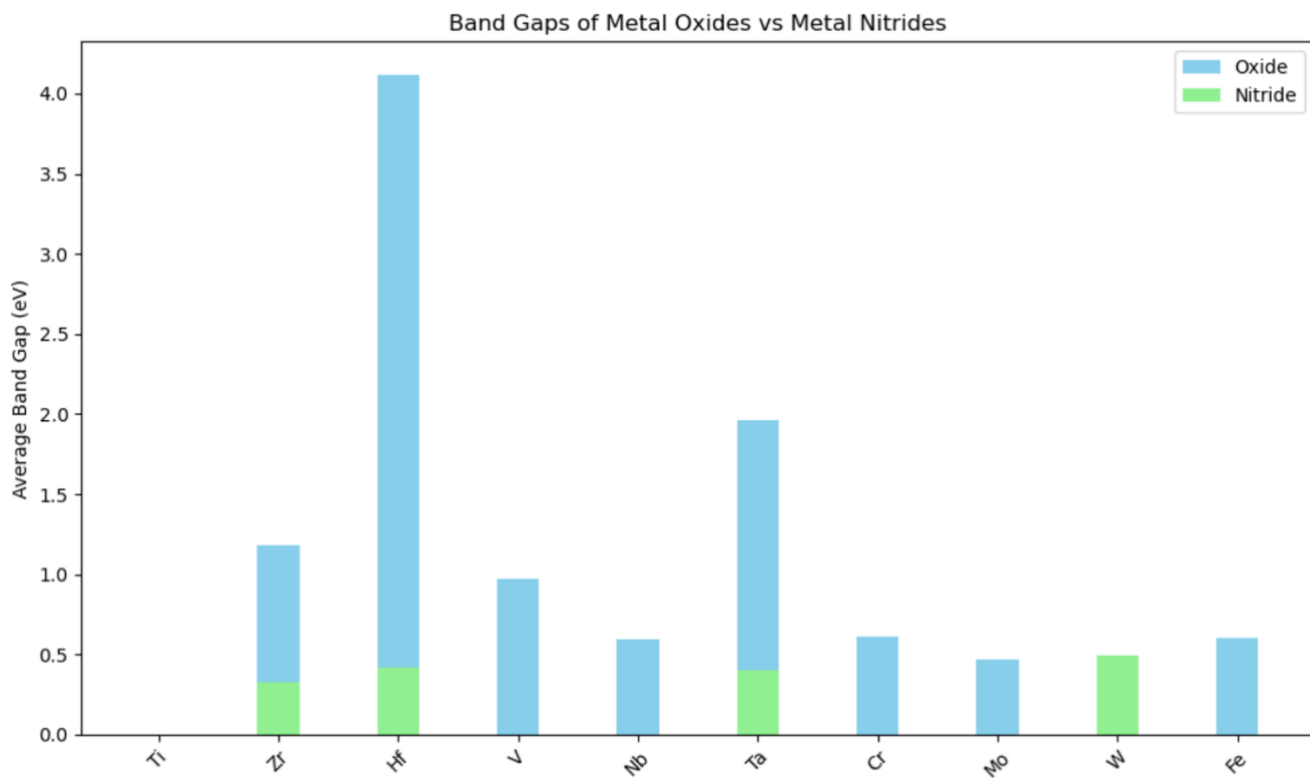


## Oxide vs. Nitride Band Gap Comparison

This script retrieves and compares the band gap of metal oxides to those of metal nitrides. Furthermore, the script generates a table with the energies listed and a bar graph comparing the difference in energy between nitride and oxide band gap.

	Metal	Oxide Band Gap	Nitride Band Gap
0	Ti	0.000000	0.0000
1	Zr	1.177400	0.3235
2	Hf	4.117333	0.4216
3	V	0.973133	0.0000
4	Nb	0.591033	0.0000
5	Ta	1.962433	0.4047
6	Cr	0.612233	0.0000
7	Mo	0.469733	0.0000
8	W	0.452833	0.4926
9	Fe	0.605233	0.0000



### Density Sorter

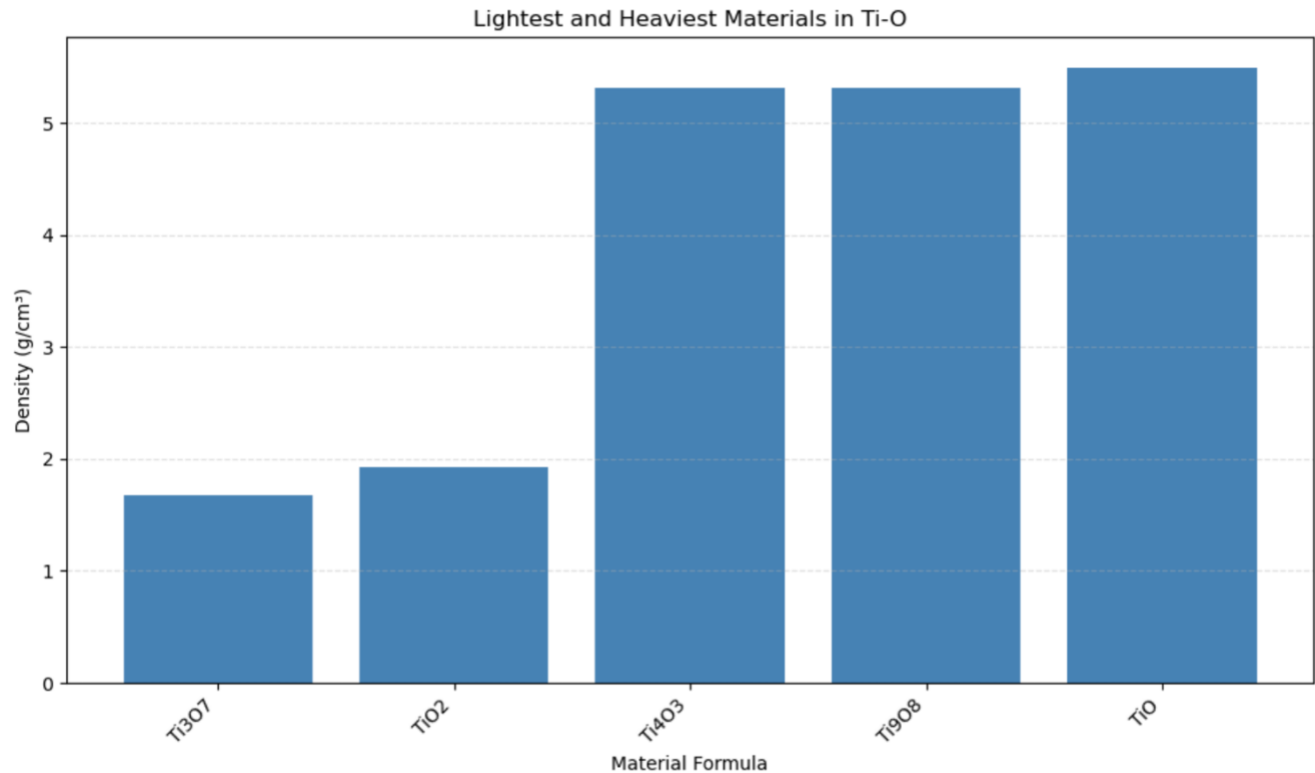
This script utilizes an inputted chemical system and ranks the materials in that system by density. The script finds the five lowest density and five highest density materials in the chemical system and lists them. Additionally, the script generates a graph depicting the differences in density between five of the materials. The examples below use the Ti-O chemical system.

#### Lightest Materials:

	formula	density
42	Ti307	1.400273
114	Ti02	1.401054
113	Ti02	1.401380
43	Ti307	1.680811
112	Ti02	1.931695

#### Heaviest Materials:

	formula	density
45	Ti403	5.313966
64	Ti908	5.315400
72	Ti0	5.375279
75	Ti0	5.409795
76	Ti0	5.491461



## Crystal System Distribution

This script visualizes the distribution of crystal systems within a material family by extracting the data of the crystal structure for each material and sorting them accordingly. The script generates a pie chart and a bar graph to depict the results. The example data below uses the Al-N material family.

