pyperm

A Python Permutations Class

Contains Various tools for working interactively with permutaions. Easily extensible.

Examples:

```
>>>
>>> import pyperm as pp
>>>
>>>
>>> p = pp.Perm.random(8)
>>>
>>> p
 5 4 7 1 6 2 3 8
>>>
>>>
>>> p.cycles()
'( 6 2 4 1 5 ) ( 7 3 ) ( 8 )'
>>>
>>> p.order()
10
>>>
>>> p ** 10
 1 2 3 4 5 6 7 8
>>>

>>> S = pp.PermSet.all(6)
>>>
>>> S
 Set of 720 permutations
>>>
>>> S.total_statistic(Perm.inversions)
 5400
>>>
>>> S.total_statistic(Perm.descents)
 1800
>>>

>>>
>>> A = pp.AvClass(8)
>>>
>>> A
```

```
<<<
[Set of 0 permutations,
 Set of 1 permutations,
 Set of 2 permutations,
 Set of 6 permutations,
 Set of 24 permutations,
 Set of 120 permutations,
 Set of 720 permutations,
 Set of 5040 permutations,
 Set of 40320 permutations]
>>>
>>>
>>> A.avoid( pp.Perm([2,3,1]) )
>>>
>>> A
<<<
[Set of 0 permutations,
 Set of 1 permutations,
 Set of 2 permutations,
 Set of 5 permutations,
 Set of 14 permutations,
 Set of 42 permutations,
 Set of 132 permutations,
 Set of 429 permutations,
 Set of 1430 permutations]
>>>
>>>
```