

```
BeginPackage["Perm`"]
```

```
Perm`
```

```
$ContextPath
```

```
{Perm`, System`}
```

```
$Context
```

```
Perm`
```

```
Perm::usage =  
  "Perm[5,2,3,1,4] means the permutation that maps 1→5, 2→2, 3→3, 4→1, 5→4.";
```

```
Begin["`private`"]
```

```
Perm`private`
```

```
PermutationQ[ $\sigma$ _Perm] := Sort[List@@ $\sigma$ ] === Range[Length[ $\sigma$ ]]
```

```
 $\sigma$ _Perm  $\circ$   $\tau$ _Perm /; Length[ $\sigma$ ] == Length[ $\tau$ ] :=  $\sigma$ [[List@@ $\tau$ ]];
```

```
Perm /: ( $\sigma$ _Perm)-1 /; PermutationQ[ $\sigma$ ] := (  
   $\tau$  =  $\sigma$ ;  
  Do[ $\tau$ [[ $\sigma$ [[i]]] = i, {i, Length[ $\sigma$ ]}];  
   $\tau$   
)
```

```
End[]; EndPackage[]
```

See <https://mathematica.stackexchange.com/questions/31302/how-do-i-create-a-package-from-an-existing-notebook>

```
$ContextPath
```

```
{Perm`, DrorBarNatan`, CloudObjectLoader`, InterpreterLoader`, IntegratedServicesLoader`,  
  IconizeLoader`, HTTPHandlingLoader`, GeneralUtilitiesLoader`, AuthenticationLoader`,  
  SystemTools`, StreamingLoader`, SVTools`, PacletManager`, System`, Global`}
```

```
$Context
```

```
Global`
```

```
Perm[2, 3, 1]-1
```

```
Perm[3, 1, 2]
```

```
 $\tau$ 
```

```
 $\tau$ 
```

Perm`private`τ

Perm[3, 1, 2]