









NumPy - Array Manipulation

Several routines are available in NumPy package for manipulation of elements in ndarray object. They can be classified into the following types –





Changing Shape

Sr.No.	Shape & Description
1	<code>reshape</code>  Gives a new shape to an array without changing its data
2	<code>flat</code>  A 1-D iterator over the array
3	<code>flatten</code>  Returns a copy of the array collapsed into one dimension
4	<code>ravel</code>  Returns a contiguous flattened array





Transpose Operations

Sr.No.	Operation & Description
1	<code>transpose</code>  Permutes the dimensions of an array
2	<code>ndarray.T</code>  Same as <code>self.transpose()</code>
3	<code>rollaxis</code>  Rolls the specified axis backwards
4	<code>swapaxes</code>  Interchanges the two axes of an array




Changing Dimensions

Sr.No.	Dimension & Description
1	<code>broadcast</code>  Produces an object that mimics broadcasting
2	<code>broadcast_to</code>  Broadcasts an array to a new shape
3	<code>expand_dims</code>  Expands the shape of an array
4	<code>squeeze</code>  Removes single-dimensional entries from the shape of an array






Joining Arrays

Sr.No.	Array & Description
1	<code>concatenate</code>  Joins a sequence of arrays along an existing axis
2	<code>stack</code>  Joins a sequence of arrays along a new axis
3	<code>hstack</code>  Stacks arrays in sequence horizontally (column wise)
4	<code>vstack</code>  Stacks arrays in sequence vertically (row wise)

Splitting Arrays

Sr.No.	Array & Description
1	<div>split </div> <div>Splits an array into multiple sub-arrays</div>
2	<div>hsplit </div> <div>Splits an array into multiple sub-arrays horizontally (column-wise)</div>
3	<div>vsplit </div> <div>Splits an array into multiple sub-arrays vertically (row-wise)</div>

Adding / Removing Elements

Sr.No.	Element & Description
1	<div>resize </div> <div>Returns a new array with the specified shape</div>
2	<div>append </div> <div>Appends the values to the end of an array</div>
3	<div>insert </div> <div>Inserts the values along the given axis before the given indices</div>
4	<div>delete </div> <div>Returns a new array with sub-arrays along an axis deleted</div>
5	<div>unique </div> <div>Finds the unique elements of an array</div>