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	**reshape** Gives a new shape to an array without changing its data
2	**flat** A 1-D iterator over the array
3	**flatten** Returns a copy of the array collapsed into one dimension
4	**ravel** Returns a contiguous flattened array

Transpose Operations

Sr.No.	Operation & Description
1	**transpose** Permutes the dimensions of an array
2	**ndarray.T** Same as self.transpose()

3	**rollaxis** Rolls the specified axis backwards
4	**swapaxes** Interchanges the two axes of an array

Changing Dimensions

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

Joining Arrays

Sr.No.	Array & Description
1	**concatenate** Joins a sequence of arrays along an existing axis
2	**stack** Joins a sequence of arrays along a new axis

3	**hstack** Stacks arrays in sequence horizontally (column wise)
4	**vstack** Stacks arrays in sequence vertically (row wise)

Splitting Arrays

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

Adding / Removing Elements

Sr.No.	Element & Description
1	**resize** Returns a new array with the specified shape
2	**append** Appends the values to the end of an array
3	**insert** Inserts the values along the given axis before the given indices

4	**delete** Returns a new array with sub-arrays along an axis deleted
5	**unique** Finds the unique elements of an array