MATLAB - SET OPERATIONS

MATLAB provides various functions for set operations, like union, intersection and testing for set membership, etc.

The following table shows some commonly used set operations −

Function	Description
intersect*A*, *B*	Set intersection of two arrays; returns the values common to both A and B. The values returned are in sorted order.
intersect*A*, *B*, '*rows*'	Treats each row of A and each row of B as single entities and returns the rows common to both A and B. The rows of the returned matrix are in sorted order.
ismember*A*, *B*	Returns an array the same size as A, containing 1 *true* where the elements of A are found in B. Elsewhere, it returns 0 *false*.
ismember*A*, *B*, '*rows*'	Treats each row of A and each row of B as single entities and returns a vector containing 1 *true* where the rows of matrix A are also rows of B. Elsewhere, it returns 0 *false*.
issorted*A*	Returns logical 1 *true* if the elements of A are in sorted order, and logical 0 *false* otherwise. Input A can be a vector or an N-by-1 or 1-by-N cell array of strings. **A is considered to be sorted if A** and the output of sort*A* are equal.
issorted*A*, '*rows*'	Returns logical 1 *true* if the rows of two-dimensional matrix A is in sorted order, and logical 0 *false* otherwise. **Matrix A is considered to be sorted if A** and the output of sortrows*A* are equal.
setdiff*A*, *B*	Sets difference of two arrays; returns the values in A that are not in B. The values in the returned array are in sorted order.
setdiff*A*, *B*, '*rows*'	Treats each row of A and each row of B as single entities and returns the rows from A that are not in B. The rows of the returned matrix are in sorted order. The 'rows' option does not support cell arrays.
setxor	Sets exclusive OR of two arrays
union	Sets union of two arrays
unique	Unique values in array

Example

Create a script file and type the following code −

```
a = [7 23 14 15 9 12 8 24 35]
b = [ 2 5 7 8 14 16 25 35 27]
u = union(a, b)
i = intersect(a, b)
s = setdiff(a, b)
```

When you run the file, it produces the following result −

```
a =

    7    23    14    15     9    12     8    24    35

b =

    2     5     7     8    14    16    25    35    27

u =

    2     5     7     8     9    12    14    15    16    23    24    25    27    35

i =

    7     8    14    35

s =

    9    12    15    23    24
```