MATLAB Array Manipulation Functions

Array Creation

zeros() – Create array of zeros
A = zeros(3,3);

ones() – Create array of ones
A = ones(2,4);

eye() – Create identity matrix
I = eye(3);

rand() – Random values (0–1)
A = rand(2,2);

linspace() – Linearly spaced array
v = linspace(1,10,5);

colon (:) – Create sequence array
v = 1:2:10;

Size & Dimension

size() – Get array dimensions
size(A);

length() – Largest dimension length
length(A);

numel() – Total elements count
numel(A);

ndims() – Number of dimensions
ndims(A);

Indexing & Access

() – Access elements
A(2,3);

: – Access entire row/column
A(:,2);

end – Last index access
A(end,end);

find() – Find index of condition
find(A>5);

Reshape & Modify

reshape() – Change array shape
reshape(A,3,2);

transpose (') – Transpose array
A';

permute() – Reorder dimensions
permute(A,[2 1]);

repmat() – Repeat array
repmat(A,2,3);

cat() – Concatenate arrays
cat(1,A,B);

Math Operations

sum() – Sum of elements
sum(A);

mean() – Average value
mean(A);

max() – Maximum element
max(A);

min() – Minimum element
min(A);

prod() – Product of elements
prod(A);

Logical & Condition

any() – Any true condition
any(A>0);

all() – All true condition
all(A>0);

logical() – Convert to logical
logical(A);

isempty() – Check empty array
isempty(A);

Sorting & Set Ops

sort() – Sort array
sort(A);

unique() – Unique elements
unique(A);

union() – Union of arrays
union(A,B);

intersect() – Common elements
intersect(A,B);

setdiff() – Difference of sets
setdiff(A,B);