

# Programming Constructs

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# if

Executes code if a condition holds.

## Example

```
1 x = 3;  
2  
3 if x>0  
4     disp(" positive")  
5 end
```

# if

Executes code if a condition holds.

## Example

```
1 x = 3;  
2  
3 if x>0  
4     disp(" positive")  
5 end
```

## Output

positive

# if

Executes code if a condition holds.

## Example

```
1 x = -3;  
2  
3 if x>0  
4     disp(" positive")  
5 end
```

# if

Executes code if a condition holds.

## Example

```
1 x = -3;  
2  
3 if x>0  
4     disp(" positive")  
5 end
```

## Output

## if/else

Executes a block of code if a condition holds, and a different block of code if a different condition holds.

### Example

```
1 x = -7;  
2  
3 if x>0  
4     disp(" positive")  
5 else  
6     disp(" negative")  
7 end
```

# if/else

Executes a block of code if a condition holds, and a different block of code if a different condition holds.

## Example

```
1 x = -7;  
2  
3 if x>0  
4     disp(" positive")  
5 else  
6     disp(" negative")  
7 end
```

## Output

negative

# for

Repeats a block of code a number of times, updating the value of a variable on each iteration.

## Example

```
1 for j = 1:3  
2     disp(j);  
3 end
```



# for

Repeats a block of code a number of times, updating the value of a variable on each iteration.

## Example

```
1 for j = 1:3  
2     disp(j);  
3 end
```

## Output

1

2

3

# elseif

Used for potentially executing an alternative block of code when a `if` condition fails.

## Example

```
1 v = [-1,0,1];
2 for k = 1:length(v)
3     disp(k)
4
5     if v(k)<0
6         disp("negative")
7     elseif v(k)>0
8         disp("positive")
9     else
10        disp("zero!")
11    end
```

# elseif

Used for potentially executing an alternative block of code when a `if` condition fails.

## Output

negative

zero!

positive

# break

Used for terminating a loop early.

## Example

```
1 v = [-1,0,1];
2 found = 0;
3 for k=1:length(v)
4     disp k
5     if v(k) == 0
6         found = 1;
7         break
8     end
9 end
10
11 if found == 0
12     disp("sadly , no zeros")
13 else
14     disp("Yay! Found zero!")
15 end
```

# break

Used for terminating a loop early.

## Output

1

2

Yay! Found zero!

# while

Iterates a loop as long as a condition holds.

## Example

```
1 x = 1971;  
2 z = 1;  
3  
4 while z < x;  
5     z = z * 10;  
6 end  
7 disp(x)  
8 disp(z)
```

# while

Iterates a loop as long as a condition holds.

Output

1971

10000