





## ●● Object properties ●●●●●●●●●●●●●●●●●●●●

Where the *value* of a property can be a routine, several formats are possible (but remember: embedded “]” returns false, standalone “]” returns true,):

```
property [; statement; statement; ... ]
```

```
property [; return routine(); ]
```

```
property [; routine(); ]
```

```
property routine
```

“⊕” marks an additive property: such properties in an Object definition supplement, rather than supersede, the same properties in a Class definition (and are dealt with first).

### add\_to\_scope

For an object: additional objects which follow it in and out of scope. The *value* can be: a space-separated list of *objects*, or a routine which invokes `PlaceInScope()` or `ScopeWithin()` to specify objects.

### after ⊕

For an object: receives every *action* and *fake\_action* for which this is the *noun*.

For a room: receives every *action* which occurs here.

The *value* is a routine of structure similar to a *switch* statement, having cases for the appropriate *actions* (and an optional default as well); it is invoked after the action has happened, but before the player has been informed. The routine should return: `false` to continue, telling the player what has happened, or `true` to stop processing the action and produce no further output.

### article

For an object: the object’s indefinite article – the default is automatically “a”, “an” or “some”. The *value* can be: a string, or a routine which outputs a string.

### articles

For a non-English object: its definite and indefinite articles. The *value* is an array of strings.

### before ⊕

For an object: receives every *action* and *fake\_action* for which this is the *noun*.

For a room: receives every *action* which occurs here.

The *value* is a routine invoked before the action has happened. See *after*.

### cant\_go

For a room: the message when the player attempts an impossible exit. The *value* can be: a string, or a routine which outputs a string.

### capacity

For a container or supporter object: the number of objects which can be placed in or on it – the default is 100. For the player: the number which can be carried – `selfobj` has an initial capacity of `MAX_CARRIED`.

The *value* can be: a number, or a routine which returns a number.

### d\_to

For a room: a possible exit. The *value* can be:

- `false` (the default): not an exit;
- a string: output to explain why this is not an exit;
- a *room*: the exit leads to this room;
- a door object: the exit leads through this door;
- a routine which should return: `false`, a string, a *room*, a door object, or `true` to signify ‘not an exit’ and produce no further output.

### daemon

The *value* is a routine which can be activated by `StartDaemon(object)` and which then runs once each turn until deactivated by `StopDaemon(object)`.

### describe ⊕

For an object: called before the object’s description is output. For a room: called before the room’s (long) description is output.

The *value* is a routine which should return: `false` to continue, outputting the usual description, or `true` to stop processing and produce no further output.

### description

For an object: its description (output by `Examine`).  
For a room: its long description (output by `Look`).

The *value* can be: a string, or a routine which outputs a string.

### door\_dir

For a compass object (`d_obj`, `e_obj`, ...): the direction in which an attempt to move to this object actually leads.  
For a door object: the direction in which this door leads.

The *value* can be: a directional property (`d_to`, `e_to`, ...), or a routine which returns such a property.

### door\_to

For a door object: where it leads. The *value* can be:

- `false` (the default): leads nowhere;
- a string: output to explain why door leads nowhere;
- a *room*: the door leads to this room;
- a routine which should return: `false`, a string, a *room*, or `true` to signify ‘leads nowhere’ without producing any output.

### e\_to

See *d\_to*.

### each\_turn ⊕

Invoked at the end of each turn (after all appropriate daemons and timers) whenever the object is in scope. The *value* can be: a string, or a routine.

### found\_in

For an object: the rooms where this object can be found, unless it has the *absent* attribute. The *value* can be:

- a space-separated list of *rooms* (where this object can be found) or *objects* (whose locations are tracked by this object);
- a routine which should return: `true` if this object can be found in the current location, otherwise `false`.

### grammar

For an animate or talkable object: the *value* is a routine called when the parser knows that this object is being addressed, but has yet to test the grammar. The routine should return: `false` to continue, `true` to indicate that the routine has parsed the entire command, or a dictionary word (*word* or *-word*).

### in\_to

See *d\_to*.

### initial

For an object: its description before being picked up.  
For a room: its description when the player enters the room.

The *value* can be: a string, or a routine which outputs a string.

### inside\_description

For an enterable object: its description, output as part of the room description when the player is inside the object.

The *value* can be: a string, or a routine which outputs a string.

#### invent

For an object: the *value* is a routine for outputting the object's inventory listing, which is called twice. On the first call nothing has been output; *inventory\_stage* has the value 1, and the routine should return: *false* to continue or *true* to stop processing and produce no further output. On the second call the object's indefinite article and short name have been output, but not any subsidiary information; *inventory\_stage* has the value 2, and the routine should return: *false* to continue or *true* to stop processing and produce no further output.

#### life ⊕

For an animate object: receives person-to-person *actions* (Answer Ask Attack Give Kiss Order Show Tell ThrowAt WakeOther) for which this is the *noun*. The *value* is a routine of structure similar to a *switch* statement, having cases for the appropriate *actions* (and an optional default as well). The routine should return: *false* to continue, telling the player what has happened, or *true* to stop processing the action and produce no further output.

#### list\_together

For an object: groups related objects when outputting an inventory or room contents list. The *value* can be:

- a *number*: all objects having this value are grouped;
- a *string*: all objects having this value are grouped as a count of the string;
- a routine which is called twice. On the first call nothing has been output; *inventory\_stage* has the value 1, and the routine should return: *false* to continue, or *true* to stop processing and produce no further output. On the second call the list has been output; *inventory\_stage* has the value 2, and there is no test on the return value.

#### n\_to

See *d\_to*.

#### name ⊕

Defines a space-separated list of words which are added to the Inform dictionary. Each word can be supplied in apostrophes ' . . . ' or quotes " . . . "; in all other cases only words in apostrophes update the dictionary.

For an object: identifies this object.

For a room: outputs "does not need to be referred to".

#### ne\_to

See *d\_to*.

#### number

For an object or room: the *value* is a general-purpose variable freely available for use by the program. A player object must provide (but not use) this variable.

#### nw\_to

See *d\_to*.

#### orders

For an animate or talkable object: the *value* is a routine called to carry out the player's orders. The routine should return: *false* to continue, or *true* to stop processing the action and produce no further output.

#### out\_to

See *d\_to*.

#### parse\_name

For an object: the *value* is a routine called to parse an object's name. The routine should return: zero if the text makes no sense, -1 to cause the parser to resume, or the positive number of words matched.

#### plural

For an object: its plural form, when in the presence of others like it. The *value* can be: a string, or a routine which outputs a string.

#### react\_after

For an object: detects nearby actions – those which take place when this object is in scope. The *value* is a routine invoked after the action has happened, but before the player has been informed. See *after*.

#### react\_before

For an object: detects nearby actions – those which take place when this object is in scope. The *value* is a routine invoked before the action has happened. See *after*.

#### s\_to

#### se\_to

See *d\_to*.

#### short\_name

For an object: an alternative or extended short name. The *value* can be: a string, or a routine which outputs a string. The routine should return: *false* to continue by outputting the object's 'real' short name (from the head of the object definition), or *true* to stop processing the action and produce no further output.

#### short\_name\_indef

For a non-English object: the short name when preceded by an indefinite object. The *value* can be: a string, or a routine which outputs a string.

#### sw\_to

See *d\_to*.

#### time\_left

For a timer object: the *value* is a variable to hold the number of turns left until this object's timer – activated and initialised by *StartTimer(object)* – counts down to zero and invokes the object's *time\_out* property.

#### time\_out

For a timer object: the *value* is a routine which is run when the object's *time\_left* value – initialised by *StartTimer(object)*, and not in the meantime cancelled by *StopTimer(object)* – counts down to zero.

#### u\_to

#### w\_to

See *d\_to*.

#### when\_closed

#### when\_open

For a container or door object: used when including this object in a room's long description. The *value* can be: a string, or a routine which outputs a string.

#### when\_off

#### when\_on

For a switchable object: used when including this object in a room's long description. The *value* can be: a string, or a routine which outputs a string.

#### with\_key

For a lockable object: the 'key' *object* needed to lock and unlock the object, or nothing if no key fits.

## ●● Object attributes ●●●●●●●●●●●●●●●●●●●●

- absent  
For a 'floating' object (one with a `found_in` property, which can appear in many rooms): is no longer there.
- animate  
For an object: is a living creature.
- clothing  
For an object: can be worn.
- concealed  
For an object: is present but hidden from view.
- container  
For an object: other objects can be put in (but not on) it.
- door  
For an object: is a door or bridge between rooms.
- edible  
For an object: can be eaten.
- enterable  
For an object: can be entered.
- female  
For an animate object: is female.
- general  
For an object or room: a general-purpose flag.
- light  
For an object or room: is giving off light.
- lockable  
For an object: can be locked; see the `with_key` property.
- locked  
For an object: can't be opened.
- male  
For an animate object: is male.
- moved  
For an object: is being, or has been, taken by the player.
- neuter  
For an animate object: is neither male nor female.
- on  
For a switchable object: is switched on.
- open  
For a container or door object: is open.
- openable  
For a container or door object: can be opened.

- pluralname  
For an object: is plural.
- proper  
For an object: the short name is a proper noun, therefore not to be preceded by "The" or "the".
- scenery  
For an object: can't be taken; is not listed in a room description.
- scored  
For an object: awards `OBJECT_SCORE` points when taken for the first time. For a room: awards `ROOM_SCORE` points when visited for the first time.
- static  
For an object: can't be taken.
- supporter  
For an object: other objects can be put on (but not in) it.
- switchable  
For an object: can be switched off or on.
- talkable  
For an object: can be addressed in "object, do this" style.
- transparent  
For a container object: objects inside it are visible.
- visited  
For a room: is being, or has been, visited by the player.
- workflag  
Temporary internal flag, also available to the program.
- worn  
For a clothing object: is being worn.

## ●● Optional entry points ●●●●●●●●●●●●●●●●●●●●

- These routines, if you supply them, are called when shown.
- `AfterLife()`  
The player has died. Setting `deadflag` to 0 resurrects her.
  - `AfterPrompt()`  
The ">" prompt has been output.
  - `Amusing()`  
The player has won and `AMUSING_PROVIDED` is defined.
  - `BeforeParsing()`  
The parser has input some text, set up the buffer and parse tables, and initialised `wn` to 1, but done nothing else.

- `ChooseObjects(object, flag)`  
Parser has found "ALL" or an ambiguous noun phrase and decided that `object` should be excluded (`flag` is 0), or included (`flag` is 1). The routine should return: 0 to let this stand, 1 to force inclusion, or 2 to force exclusion. If `flag` is 2, the parser is undecided, and the routine should return an appropriate score 0..9.
- `DarkToDark()`  
The player has moved from one dark room to another.
- `DeathMessage()`  
The player has died and `deadflag` is 3 or more.
- `GamePostRoutine()`  
Called after all *actions*.
- `GamePreRoutine()`  
Called before all *actions*.
- `Initialise()`  
**Mandatory; note British spelling:** called at start. Must set `location`; can return 2 to suppress game banner.
- `InScope()`  
Called during parsing.
- `LookRoutine()`  
Called at the end of every `Look` description.
- `NewRoom()`  
Called when room changes, before description is output.
- `ParseNoun(object)`  
Called to parse the `object`'s name.
- `ParseNumber(byte_array, length)`  
Called to parse a number.
- `ParserError(number)`  
Called to handle an error.
- `PrintRank()`  
Completes the output of the score.
- `PrintTaskName(number)`  
Prints the name of the task.
- `PrintVerb(addr)`  
Called when an unusual verb is printed.
- `TimePasses()`  
Called after every turn.
- `UnknownVerb()`  
Called when an unusual verb is encountered.

