

Pensieve header: Undated: Patterns.

Patterns

? Blank

`_` or `Blank[]` is a pattern object that can stand for any Wolfram Language expression.
`_h` or `Blank[h]` can stand for any expression with head h . >>

? Pattern

`s : obj` represents the pattern object `obj`, assigned the name `s`. >>

? BlankSequence

`__` (two `_` characters) or `BlankSequence[]` is a pattern object that can stand for any sequence of one or more Wolfram Language expressions.
`__h` or `BlankSequence[h]` can stand for any sequence of one or more expressions, all of which have head h . >>

? BlankNullSequence

`___` (three `_` characters) or `BlankNullSequence[]` is a pattern object that can stand for any sequence of zero or more Wolfram Language expressions.
`___h` or `BlankNullSequence[h]` can stand for any sequence of expressions, all of which have head h . >>

? Alternatives

`p1 | p2 | ...` is a pattern object that represents any of the patterns p_i . >>

? Repeated

`p..` or `Repeated[p]` is a pattern object that represents a sequence of one or more expressions, each matching p .
`Repeated[p, max]` represents from 1 to max expressions matching p .
`Repeated[p, {min, max}]` represents between min and max expressions matching p .
`Repeated[p, {n}]` represents exactly n expressions matching p . >>

? RepeatedNull

`p...` or `RepeatedNull[p]` is a pattern object that represents a sequence of zero or more expressions, each matching p .
`RepeatedNull[p, max]` represents from 0 to max expressions matching p .
`RepeatedNull[p, {min, max}]` represents between min and max expressions matching p . >>

? Except

`Except[c]` is a pattern object which represents any expression except one that matches c .
`Except[c, p]` represents any expression that matches p but not c . >>

? Longest

`Longest[p]` is a pattern object that matches the longest sequence consistent with the pattern p . >>

? Shortest

`Shortest[p]` is a pattern object that matches the shortest sequence consistent with the pattern p . >>

? Condition

`patt / ; test` is a pattern which matches only if the evaluation of `test` yields True.
`lhs :> rhs / ; test` represents a rule which applies only if the evaluation of `test` yields True.
`lhs := rhs / ; test` is a definition to be used only if `test` yields True. >>

? PatternTest

`p?test` is a pattern object that stands for any expression that matches `p`, and on which the application of `test` gives True. >>

? Optional

`p : v` is a pattern object that represents an expression of the form `p`, which, if omitted, should be replaced by `v`. >>

? Default

`Default[f]` gives the default value for arguments of the function `f` obtained with a `_.` pattern object.
`Default[f, i]` gives the default value to use when `_.` appears as the i^{th} argument of `f`.
`Default[f, i, n]` gives the default value for the i^{th} argument out of a total of n arguments.
`Default[f, ...] = val` defines default values for arguments of `f`. >>

Information[# , LongForm → False] & /@

{OptionsPattern, PatternSequence, Verbatim, HoldPattern, OrderlessPatternSequence, KeyValuePattern};

`OptionsPattern[]` is a pattern object that represents a collection of options given as rules, where the values of the options can be accessed using `OptionValue`.
`OptionsPattern[f]` takes default option values from `Options[f]`.
`OptionsPattern[{opt1 → val1, opt2 → val2, ...}]` uses an explicit list of default option values. >>

`PatternSequence[p1, p2, ...]` is a pattern object which represents a sequence of arguments matching `p1, p2, ...`. >>

`Verbatim[expr]` represents `expr` in pattern matching, requiring that `expr` be matched exactly as it appears, with no substitutions for blanks or other transformations. >>

`HoldPattern[expr]` is equivalent to `expr` for pattern matching, but maintains `expr` in an unevaluated form. >>

`OrderlessPatternSequence[p1, p2, ...]` is a pattern object that represents a sequence of arguments matching `p1, p2, ...` in any order. >>

`KeyValuePattern[{patt1, ...}]` is a pattern object that represents an association or list of rules that includes elements matching each of the `patti`. >>