

# the query language

## some exercises

- 0: example: find recursive functions, using \$\$
- 1: find global variables with fewer than 3 characters
- 2: find loops that contain gotos but no labels
- 4: find goto statements immediately followed by the label

### answer 0

```
: fcts          # mark all fct names
: s top }       # stretch to end of fct body
: m ir $$      # the fct name is bound to $$
: n; m & (; b   # make sure these are all fct calls
```

### answer 1

```
: m @ident
: m & (.curly == 0 && .round == 0 && .len < 3)
```

### answer 2

```
: for; m do; m while
: n (; j; n; m & {
: c goto; c no :
```

```
.range  # nr of lines in a range
.fnm    # source filename (a string)
.lnr    # source line-number
.curly  # level of {...} nesting
.round  # level of (...) nesting
.bracket # level of [...] nesting
.len    # length of token text
.typ    # token type (a string)
.txt    # token text (a string)
.seq    # token sequence number
.mark   # marked value
```

### answer 4

```
: pat goto x:@ident \; :x
: m goto; n; s $$; c no \;
```