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1 Insert Source Code Block for Org Babel—ask for a name

This project is a function for Org Babel that, before inserting a source code block, ask the user for a name. If the user does not inform a name, nothing changes. But if the user does inform a name, the function will automatically

- decorate the block with a nicely formatted string,
- insert a `:noweb-ref` for the block, and
- create an Org heading for the code block section.

The idea is to make it easier to do [literate programming](#) on [Emacs](#).

All the text below *is* literate programming (LP) itself: the ideas and divagations are mixed with the source code, and the final product is automatically extracted from this text via *tangling*.

Thus, the whole entire source code for the program is listed below! For me, this was the first not-so-short project that I used LP, and I loved it!

1.1 Introduction

Org Babel has this nice little functionality of

Insert[ing] a block structure of the type `#+begin_foo/#+end_foo`.

using the function `org-insert-structure-template`. This is very practical, because I have to type less.

What I *wish* Org Babel had was a way to insert the *name* of the code blocks. This would help a lot in my literate programming activities.

```
<<Function to insert an Org Babel code block>>
```

1.2 Function to insert an Org Babel code block

The code block may or may not have a name, and this will determine several things about the tangling process. The general structure of the function is depicted below.

```
⟨ Function to insert an Org Babel code block ⟩ ≡
```

```
(defun my-org-babel-insert-src-block ()
  (interactive)
  <<Ask for a name and update variable>>
  <<Update other variables dependent on the name>>
  <<Insert the code block>>)
```

1.3 Ask for a name and update variable

```
⟨ Block name ⟩ ≡
```

```
my-org-babel-insert-src-block-name
```

```
⟨ Ask for a name and update variable ⟩ ≡
```

```
(setq <<Block name>>
  (read-string "Name: "))
```

1.4 Update other variables dependent on the name

```
⟨ Update other variables dependent on the name ⟩ ≡
```

```
<<Update section name header variable>>
<<Update noweb-ref block header variable>>
```

1.5 Update section name header variable

```
< Section name header > ≡  
  my-org-babel-insert-src-block-section-name-header  
  
< Update section name header variable > ≡  
  (setq <<Section name header>>  
    <<Get the section name header>>)
```

1.6 Get the section name header

```
< Get the section name header > ≡  
  (if (string= <<Block name>> "") ""  
      (concat "\\noindent\\langle " <<Block name>> " \\rangle\\equiv"))
```

1.7 Update noweb-ref block header variable

```
< noweb-ref block header > ≡  
  my-org-babel-insert-src-block-noweb-ref-block-header  
  
< Update noweb-ref block header variable > ≡  
  (setq <<noweb-ref block header>>  
    <<Get noweb-ref block header>>)
```

1.8 Get noweb-ref block header

```
< Get noweb-ref block header > ≡  
  (if (string= <<Block name>> "") ""  
      (concat " :noweb-ref " <<Block name>>))
```

1.9 Insert the code block

```
< Insert the code block > ≡  
  
  <<Insert the block name, if non-empty>>  
  <<Insert the section name header, if non-empty>>  
  (insert "#+begin_src ")  
  <<Insert the language>>  
  <<Insert the noweb-ref block header, if non-empty>>  
  (insert "\n\n#+end_src\n")  
  (previous-line)(previous-line)
```

1.10 Insert the language

Insert the language `< Insert the language >` \equiv

```
(insert
  (completing-read "Language: "
    <<Languages>>))
```

1.11 Languages

These are the [languages supported by Org Babel](#), as of November, 2022.

`< Languages >` \equiv

```
(list
  "C"
  "D"
  "F90"
  "R"
  "awk"
  "calc"
  "clojure"
  "comint"
  "cpp"
  "css"
  "ditaa"
  "dot"
  "elisp"
  "emacs-lisp"
  "eshell"
  "forth"
  "gnuplot"
  "groovy"
  "haskell"
  "java"
  "js"
  "julia"
  "latex"
  "lisp"
  "lua"
  "ly"
  "makefile"
```

```

"matlab"
"max"
"ocaml"
"octave"
"org"
"perl"
"plantuml"
"processing"
"python"
"ruby"
"sass"
"scheme"
"screen"
"sed"
"shell"
"sql"
"sqlite")

```

1.12 Insert the block name, if non-empty

⟨ Insert the block name, if non-empty ⟩ ≡

```

(unless (string= <<Block name>> "")
  (org-insert-heading)
  (insert <<Block name>> "\n\n"))

```

1.13 Insert the section name header, if non-empty

⟨ Insert the section name header, if non-empty ⟩ ≡

```

(unless (string= <<Section name header>> "")
  (insert <<Section name header>> "\n"))

```

1.14 Insert the noweb-ref block header, if non-empty

⟨ Insert the noweb-ref block header, if non-empty ⟩ ≡

```

(unless (string= <<noweb-ref block header>> "")
  (insert <<noweb-ref block header>>))

```

1.15 Add a keybinding

Add a keybinding

⟨ Add a keybinding ⟩ ≡

```
(define-key org-mode-map
  (kbd "C-. s")
  'my-org-babel-insert-src-block)
```

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