CLIPR - Computer Laboratory for Instruction in Psychological Research

PsychoPy Question Library (Qlib) version 2.36

The PsychoPy Question Library (qLib) is a library of functions that simplify the creation of questionnaire items in PsychoPy. Once the qLib has been imported, the functions from this library can be called in any PsychoPy experiment. QLib contains 8 customizable question types:

- textField: A single line text entry (can limit allowed response length and type (text or numeric))
- form - multiple item text entry
- multiChoice: A multiple response multiple choice
- choice: A vertically-oriented, (single response) multiple-choice
- slider: Continuous response
- scale: A horizontally-oriented, (single response) multiple-choice
- bars: A comparative rating
- textInput: A multi-line text entry
- textDialog: Scrolling text entry

In order to use qLib, the qLib folder must be saved in the same location as your PsychoPy program. For example, if the program example.py were moved outside of the original folder qLib2012, the program will not run. However, if the subfolder 'qLib' were moved to the same location, example.py would run successfully.

qLib2012 - version 2.36 - 5 December 2017

Changes since version 2.32

- added passwordMode argument to textfield and form (display #s instead of typed characters
- fixed a couple of text size bugs in forms and textFields

Changes since version 2.23

- added the capability to use a keypress to advance to the next question (instead of having to click on the "Next" button. This applies to all question types except

textDialog. If using a keypress to advance, the "next" button will not be displayed'

- changed the default for "forceChoice" to False for all question types that allow this option.
- added minTime and timeout to textDialog.
- fixed a couple of minor bugs including one where you could click in the location of the hidden "Next" button and it would advance even though forceChoice was set to True.

Using qLib

In order to use qLib, the qLib folder must be saved in the same location as your PsychoPy program. For example, if the program example.py were moved outside of the original folder qLib2012, the program will not run. However, if the subfolder 'qLib' were moved to the same location, example.py would run successfully.

To call qLib functions within your program, you must first import qLib.

from qLib.qLib import *

If you do not include this step, PsychoPy will not recognize any of the functions in qLib as available functions.

Question Functions

In the following documentation, the pictures on the left show how the screen would appear if the function were called with the default arguments and a single blue textStim in the drawlist for the function. The pictures on the right show an example with a picture stimulus in the drawlist and some of the arguments specified representing a more typical use of the function. The program that produces these screens is included in the qLib package as example.py.

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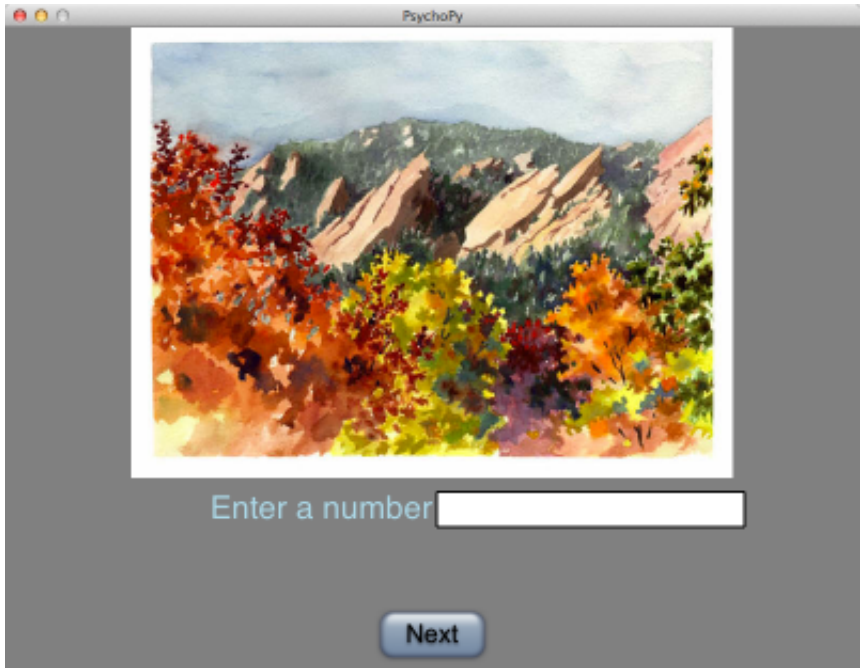
textField



This is a text input question that returns a one-line response of a limited size. This is good for short text response items or numbers. You can specify the maximum length of the response and can restrict it to allow only integers or floating point numbers.

This function returns a tuple containing the field text, the response time, the response status (either 'click' or 'timeout') and whether the field was edited ('t' or 'f').

function definition with default values:

```
textField(window, clock=None,
                  label = 'your label',
                  labelColor = 'black',
                  drawList=[],
                  text=None,
                  maxChars=12,
                  size=.1, pos=[0,0],
                  fieldtype='string',
                  timeout = None,
                  nextCharString = None,
                  passwordMode = False)
```

keyword arguments:

- window: The parent window within which the trial is drawn (must be specified)

- clock: If provided, the psychopy clock object will be used for timing. If not, one will be created.
- labelColor: Color of the text item (see below)
- drawList: A list of objects that should be drawn along with the trial
- text: "None" or text to appear initially in the entry window. Will be replaced by any text entered.
- maxChars: maximum # of characters for a response
- size: size of the entry text
- pos: position of the text entry box (in 'norm' units)
- fieldtype: Limit the entered data by limiting input to valid characters: 'string', 'int', or 'float'
- timeout: number of seconds after which to time out - if time out, return -99 in rt
- nextCharString – a one character string which when typed is recognized as clicking the 'Next' button (which will not be displayed)
- passwordMode: boolean - if True, # will be displayed for each typed character (default: False)

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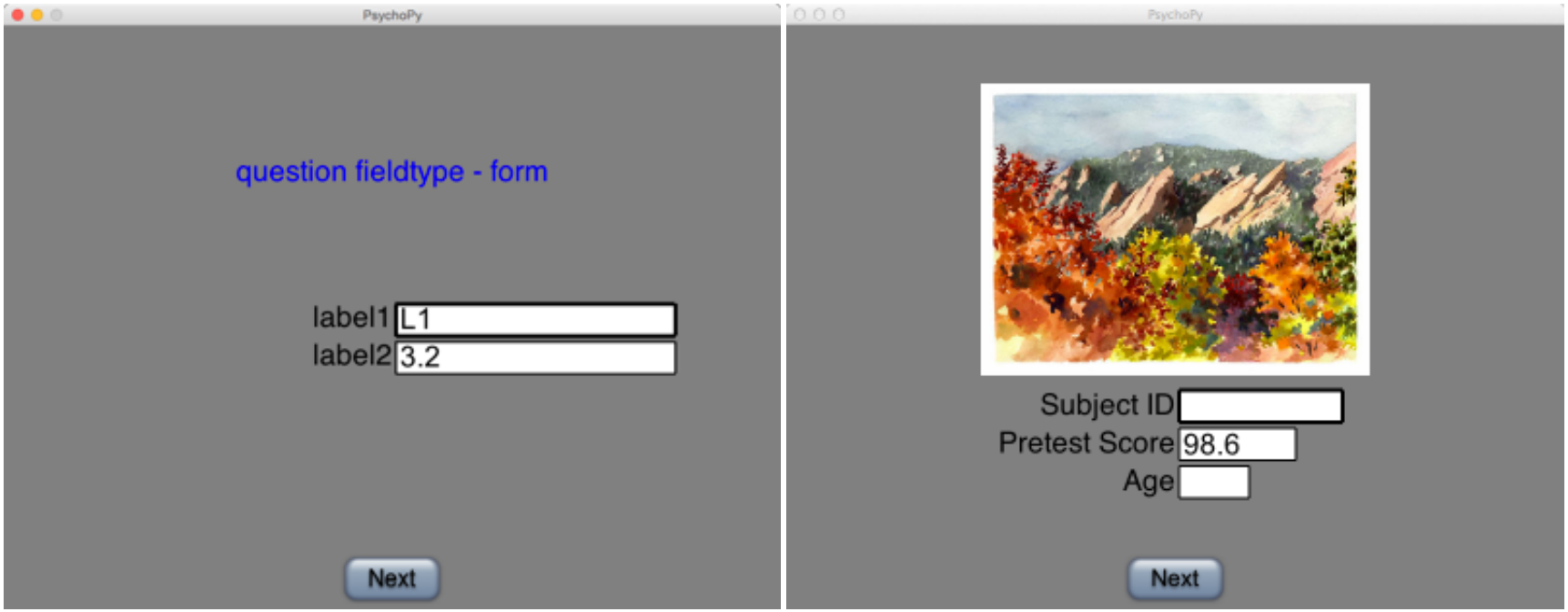
form



This is a simple form question that returns a list of text responses from multiple fields. This is good for collecting experiment control info like subject ID, condition etc. You can specify the characteristics of each field much like the textField question above. Form returns a list containing the character strings in the fields when the next button is clicked. While it can constrain text input to force entry of integers or floating point numbers, it does not convert the character strings into those data types.

This function returns a tuple containing a tuple with the current values of the form fields, the response time, the response status (either 'click' or 'timeout') and whether

any field was edited ('t' or 'f').

function definition with default values:

```
form(window, clock=None,
        drawList=[],
        fields = [ ['label1', 'black', 'L1', 12, 'string'], ['label2', 'black', '3.2', 12, 'string'] ],
        size=.1,
        pos = [0,0],
        nextCharString = None,
        passwordMode = False):
```

keyword arguments:

- window – The parent window within which the text input box is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the slider
- fields – a list of field descriptor lists. Each field descriptor list must have the 5 following elements:
    - label - the text label to appear to the left of the field
    - labelColor - color of the text label
    - text - Initial text that appears in the box - will be replaced by typed characters. (default = None)
    - maxChars - Maximum nuber of characters (default = 12)
    - fieldtype - Limit the entered data by limiting input to valid characters - 'string', 'letters', 'int', or 'float' (default: string (any characters))
- size – The size of the text (default = 0.1)
- pos – Position of the left edge of the first field box (default = [0,0])
- timeout – number of seconds after which to time out - if time out, return -99 in rt (default = None)
- nextCharString – a one character string which when typed is recognized as clicking the 'Next' button (which will not be displayed)
- passwordMode: boolean - if True, # will be displayed for each typed character (default: False)

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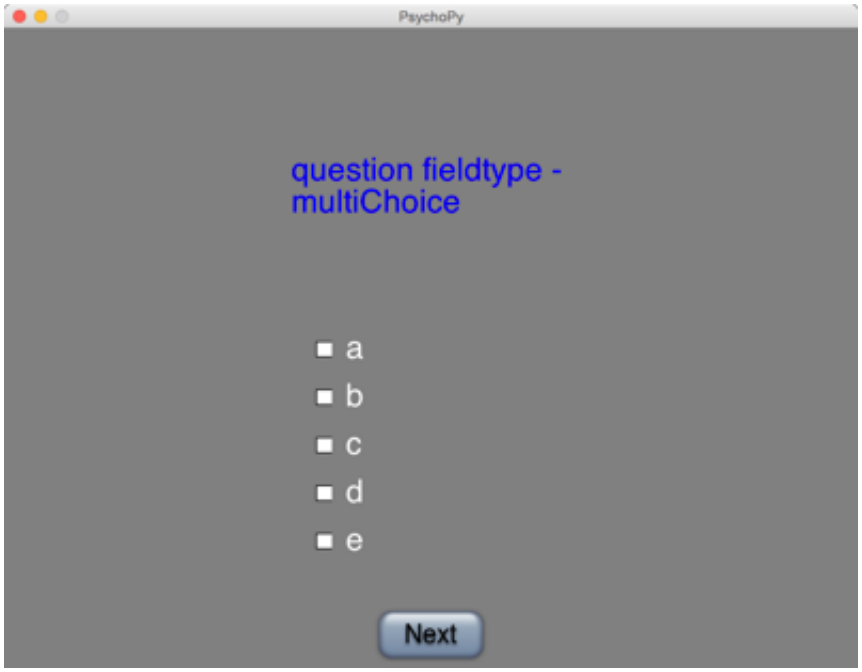
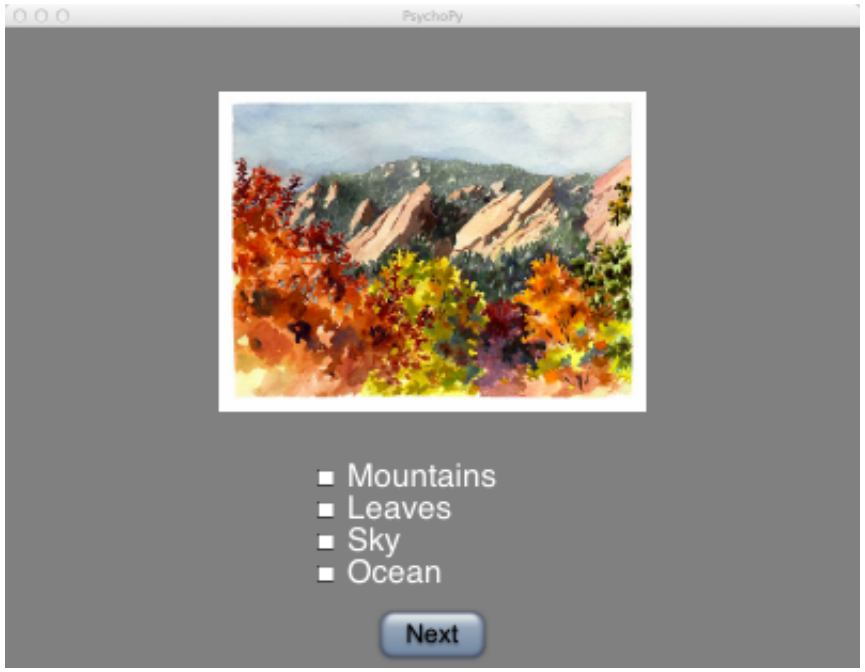
multiChoice





The multichoice question presents a trial with a set of checkboxes. Multiple checkboxes may be selected. Multichoice returns a list of the numbers of boxes selected or an empty list if no boxes are selected.

This function returns a tuple containing a tuple with the selected items, the response time, the response status (either 'click' or 'timeout') and whether a selection was clicked ('t' or 'f').

function definition with default values:

```
multiChoice(window,drawList=[],
            clock = None,
            vPos = 0.0, hPos = -0.2,
            labels=['a','b','c','d','e'],
            labelColor='white',
            labelSize=0.1,
            forceChoice = False,
            nextKey = None)
```

keyword arguments:

- window – The parent window within which the slider is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.

- drawList – A list of objects that should be drawn along with the slider
- vPos – The vertical position of the first item on the list of check boxes. The boxes will be spaced evenly between this location ant the Next button at the bottom of the window.
- hPos – The horizontal position of the left edge of the check box items
- labels – A list with the check box labels to be placed evenly spaced between vPos and the Next button
- labelColor – Color of the label text
- labelSize – Size of the text of the labels
- forceChoice – If True, require the subject to select at least one box before displaying the Next button.
- nextKey – psychopy keyname for a key to substitute for clicking the 'Next' button (which will not be displayed)

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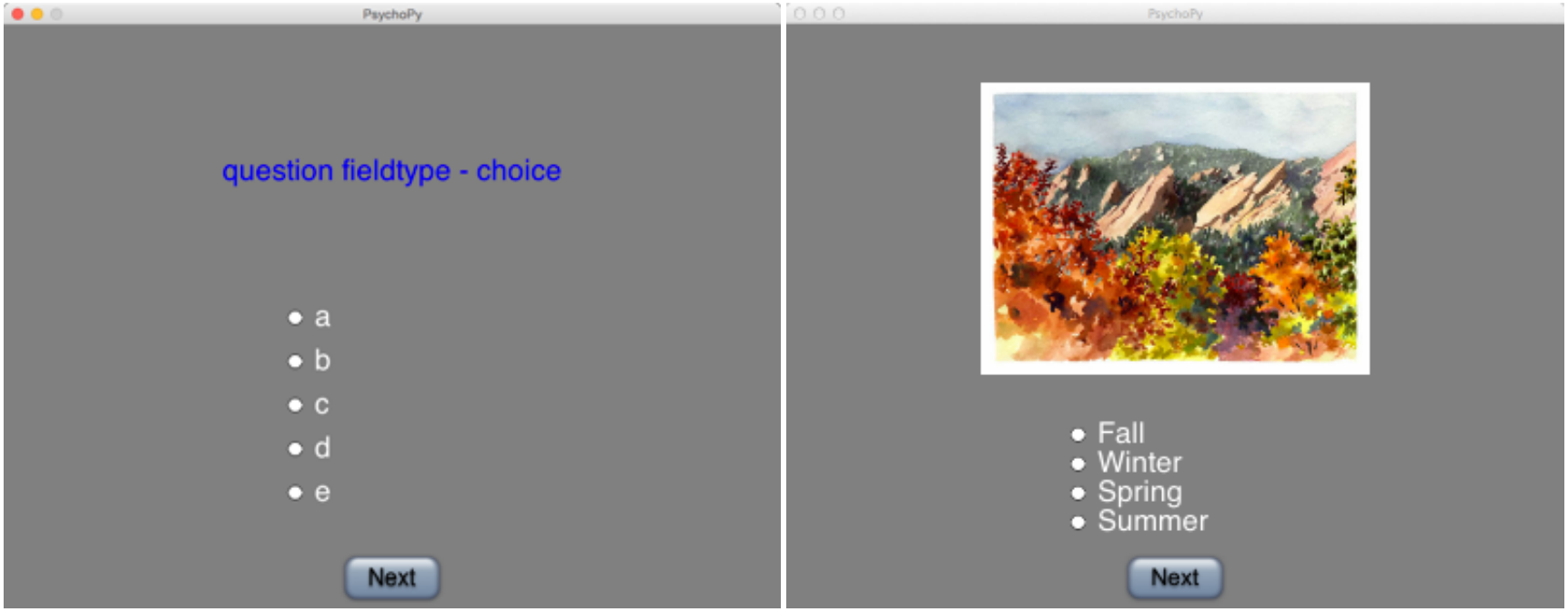
choice



The choice question presents a trial with a set of radio buttons. Only one radio button may be selected. Choice question returns the number of the selected button or None if no buttons are selected.

This function returns a tuple containing the current selection, the response time, the response status (either 'click' or 'timeout') and whether a selection was clicked ('t' or 'f').

function definition with default values:

```
choice(window,clock=None,
       drawList=[],
       vPos = 0.0,
       hPos = -0.2,
       labels=['a','b','c','d','e'],
       labelColor='white',
       labelSize=0.1,
       forceChoice=False,
       nextKey = None)
```

keyword arguments:

- window – The parent window within which the slider is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the slider
- vPos – The vertical position of the first item on the list of radio buttons. The buttons will be spaced evenly between this location ant the Next button at the bottom of the window.
- hPos – The horizontal position of the left edge of the radio button items
- labels – A list with the radio button labels to be placed evenly spaced between vPos and the Next button
- labelColor – Color of the label text
- labelSize – Size of the text of the labels
- forceChoice – If True, require the subject to select a radio button before displaying the Next button.
- nextKey – psychopy keyname for a key to substitute for clicking the 'Next' button (which will not be displayed)

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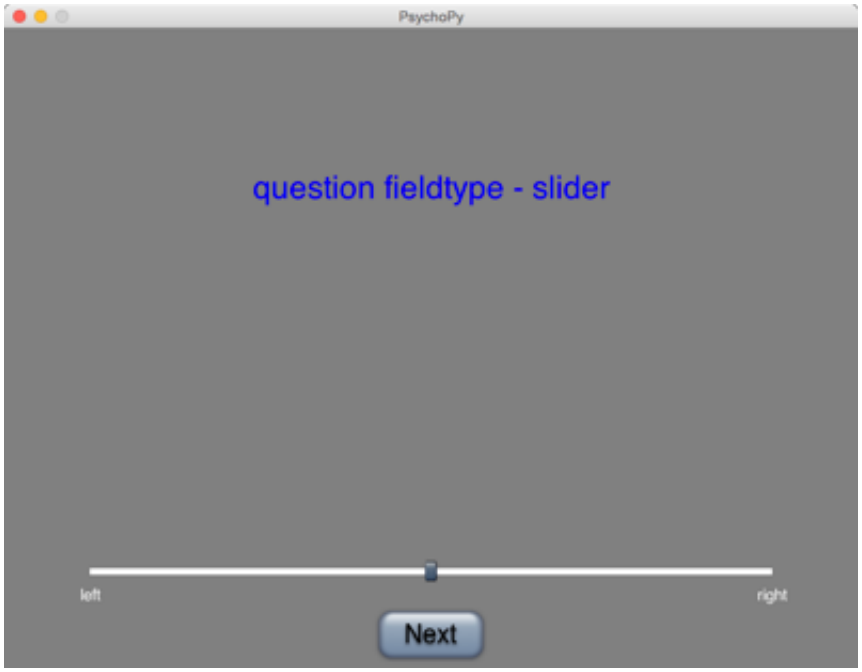
slider



Present a trial with a slider for response. The subject can move the slider back and forth, with or without feedback, and then selects a value by clicking the Next button. Returns the value of the slider when the Next button is clicked.

This function returns a tuple containing the current position of the slider, the response time, the response status (either 'click' or 'timeout') and whether the slider was manipulated ('t' or 'f').

function definition with default values:

```
slider(window,drawList = [],
               clock = None,
               width = 0.8,
               limits = [0, 100],
               start = None,
               labels = ['left', 'right'],
               snap2mouse = False,
               snap2labels = False,
               feedback = False,
               feedbackDigits = 2,
               feedbackColor = 'lightblue',
               labelColor = 'white',
               sliderLoc = -0.7,
               forceChoice = False,
               nextKey = None):
```

keyword arguments:

- window – The parent window within which the slider is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the slider
- width – The width of the slider relative to the window
- limits – A list containing the min and max values to be returned by the slider
- start – starting position in the units defined in "limits". If None, starting position will be the middle
- labels – A list with the labels to be placed evenly spaced between the ends of the slider
- snap2mouse – If True, then the subject may click anywhere on the slider line and the slider will "snap" to that position. If False, the subject must click and drag the slider to change the value.
- snap2labels – If True, slider motion is constrained to the label positions.
- feedback – If True, then the current value is displayed while the slider is being moved
- feedbackDigits – Precision of the feedback number, i.e. number of digits to the right of the decimal
- feedbackColor – Color of the feedback number
- labelColor – Color of the label text
- sliderLoc – vertical position in norm units (-1 to +1) of the slider
- forceChoice – if True, requires the participant to click the slider before the next button is made visible
- nextKey – psychopy keyname for a key to substitute for clicking the 'Next' button (which will not be displayed)

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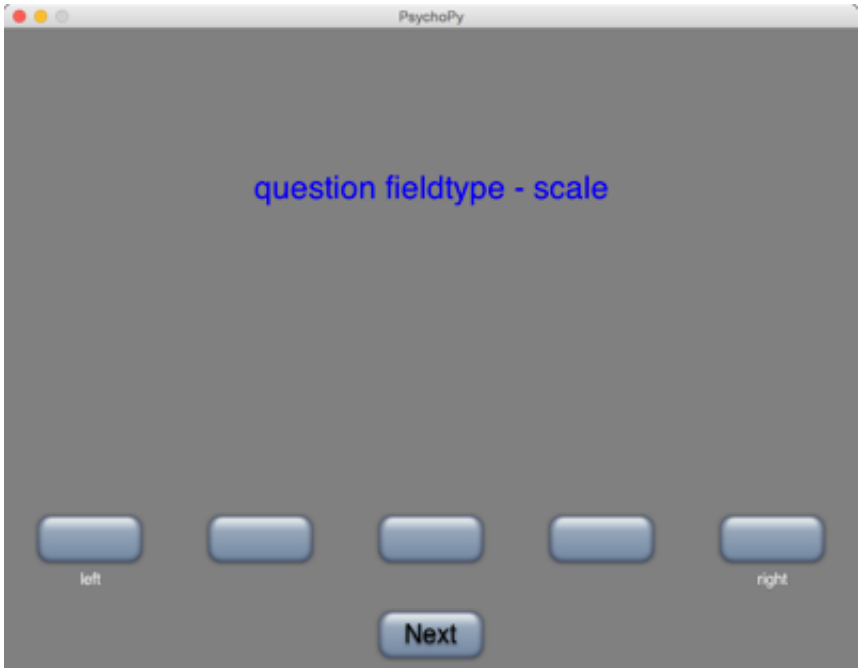
scale



The scale question allows for a single response by clicking on one of a specified number of buttons arranged horizontally across the screen. Participants respond by clicking one of the response buttons then the 'Next' button. Returns button number and response time.

This function returns a tuple containing the currently selected button, the response time, the response status (either 'click' or 'timeout') and whether the scale was clicked ('t' or 'f').

function definition with default values:

```
scale(window,clock = None,
      drawList = [],
      width = 0.8,
      labels = ['left', 'right'],
      labelColor = 'white',
      nButtons = 5,
      numberButtons = False,
      forceChoice=False,
      scaleLoc = -0.6,
      nextKey = None)
```

keyword arguments:

- window – The parent window within which the slider is drawn

- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the slider
- width – The width of the slider relative to the window
- labels – A list with the labels to be placed evenly spaced between the ends of the scale
- labelColor – Color of the label text
- nButtons – the number of buttons in the scale
- numberButtons – If True then the buttons will be numbered
- forceChoice – If True, require the subject to select a scale button before displaying the Next button.
- scaleLoc – vertical position of the scal in "norm" units.
- nextKey – psychopy keyname for a key to substitute for clicking the 'Next' button (which will not be displayed)

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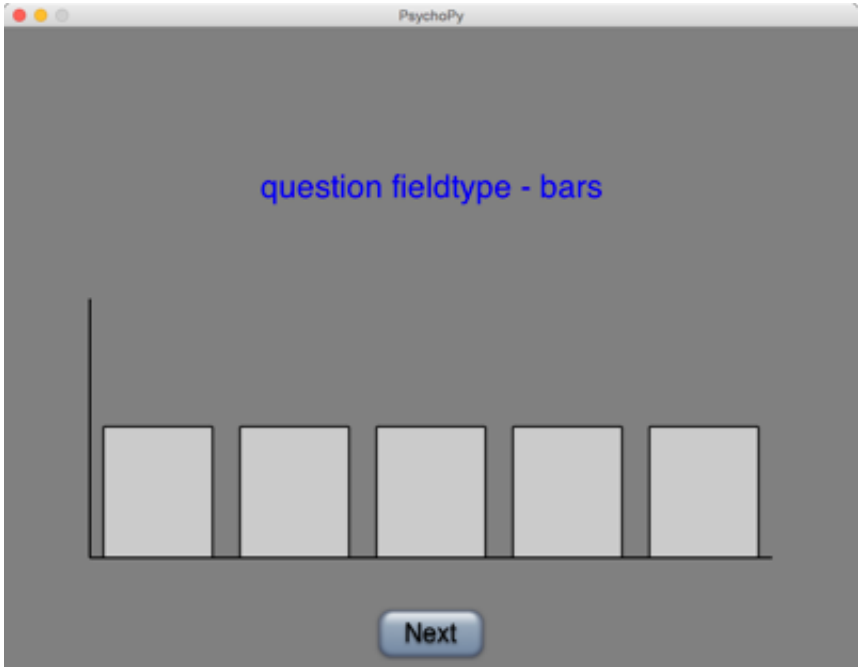
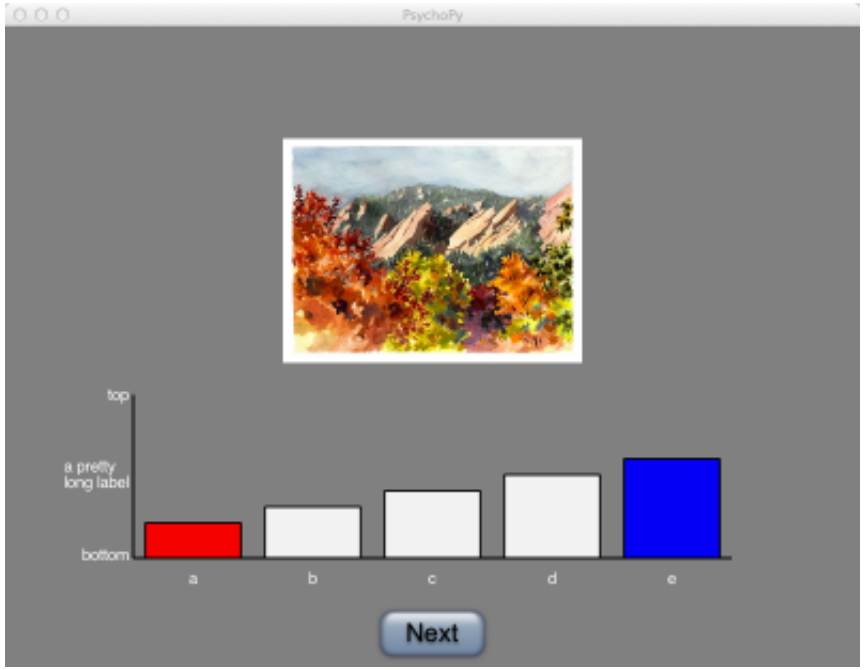
bars





Present a trial with a bar chart for response. The subject clicks and drags the bars to the desired height, and then selects these values by clicking the Next button.

This function returns a tuple containing the the heights of the bars, the response time, the response status (either 'click' or 'timeout') and whether a bar was clicked ('t' or 'f').

function definition with default values:

```
bars(window,clock = None,
     drawList = [],
     width = 0.8,
     height = 0.8,
     labels = None,
     labelColors = None,
     yLabels = None,
     yLabelColors = None,
     barColors = None,
     nBars = 5,
     limits = [0.0,100.0],
     defaultHeight = None,
     drawAxes = True,
     forceChoice=False,
     nextKey = None)
```

keyword arguments:

- window – The parent window within which the barchart is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the barchart
- width – The width of the barchart relative to the window
- height – the height of the barchart in window coordinates
- labels – A list with the labels to be placed evenly spaced between the ends of the barchart
- labelColors – A list of colors for the labels (default: black if background is white, white otherwise)
- yLabels – a list of labes to be evenly paced to the left of the Y axis
- yLabelColors – A list of colors for the Y labels (default: black if background is white, white otherwise)
- barColors – A list of colors for the bars (default: white if background is grey, grey otherwise)
- nBars – the number of bars in the chart
- limits – a two item list with the min and max values for the bar chart
- defaultHeight – the default bar height in the units of limits above (default: halfway) can also be a list with heights for each bar (must be nBars long)
- drawAxes – if True, draw X and Y axes for the bar chart
- forceChoice – If True, require the subject to move a bar before displaying the Next button.
- nextKey – psychopy keyname for a key to substitute for clicking the 'Next' button (which will not be displayed)

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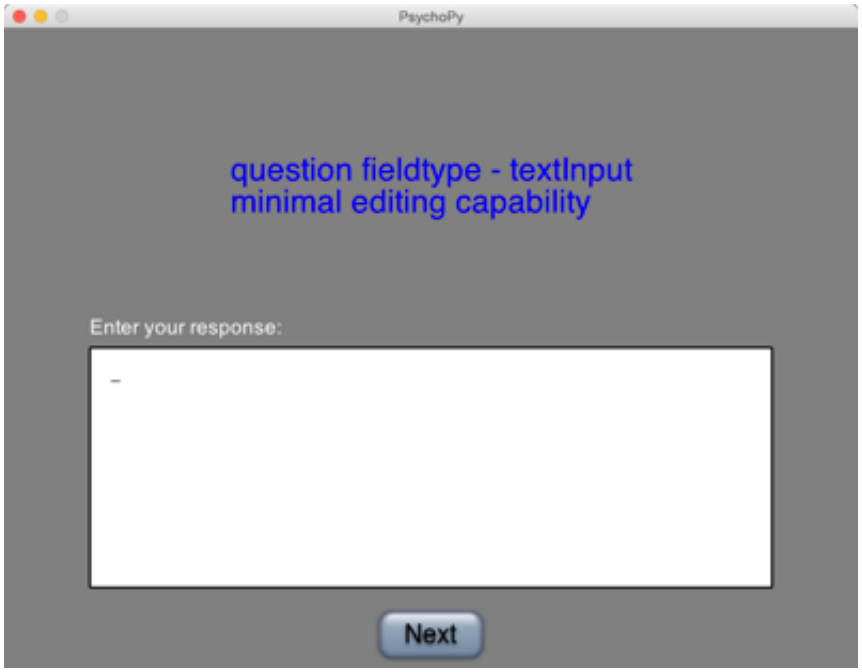
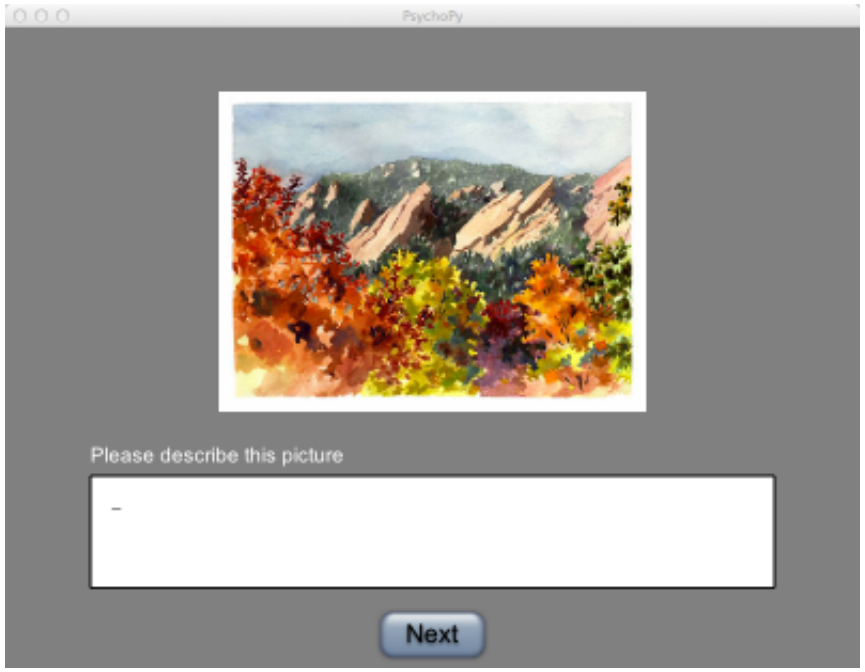
textInput





Present a trial with a text input box which allows minimal editing capabilities (just typing and the delete key).

This function returns a tuple containing the the text, the response time, the response status (either 'click' or 'timeout') and whether the text was edited ('t' or 'f').

function definition with default values:

```
textInput(window, clock=None,
          drawList=[],
          prompt='Enter your response:',
          promptHeight=0.065,
          promptOffset = 0.1,
          promptColor='white',
          boxTop=0.0,
          nextCharString = None)
```

keyword arguments:

- window – The parent window within which the text input box is drawn
- clock – If provided, the psychopy clock object will be used for timing. If not, one will be created.
- drawList – A list of objects that should be drawn along with the slider
- prompt – Text that appears as instructions above the text input box.

- promptHeight – The size of the prompt text
- promptOffset – The distance that the prompt appears from the text input box
- promptColor – Color of the prompt text
- boxTop – Position of the top of the text input box in normal window units (-1.0 to 1.0) (default = 0.0, center of the screen)
- nextCharString – a one character string which when typed is recognized as clicking the 'Next' button (which will not be displayed)

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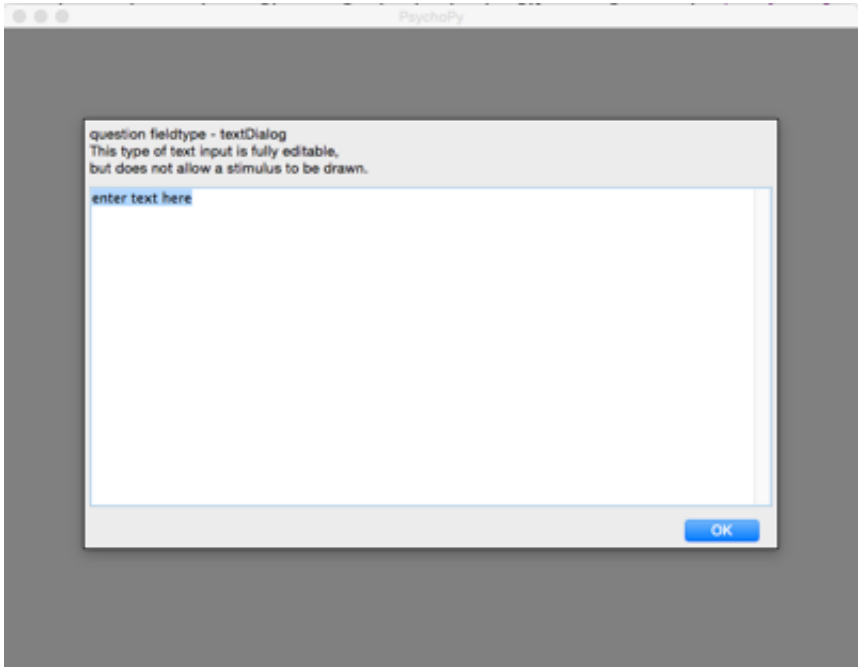
textDialog



This function is a dialog box than can be used to record text entry. The box appears in front of the psychoPy window and may be best for recording long (multi-line or multi-paragraph) responses. This function allows for scrolling and has a read-only function that is convenient for presenting large amounts of text on one page.

This function returns a tuple containing the text entered, the response time, the response status (either 'click' or 'timeout') and whether the text was edited ('t' or 'f').

function definition with default values:

```
textDialog(window, clock=None,
           wsize=(.8,.5),
           caption='',
           initialText='enter text here',
           select=None,
```

```
        readOnly = False,
        minTime = None,
        timeout = None)
```

keyword arguments:

- window: The parent window within which the trial is drawn (must be specified)
- clock: if provided, the specified clock will be used for timing, if not, a new one will be created.
- wsize: tuple indicating the size of the total dialog box (including border) in 'norm' units - (2,2) should be full screen.
- caption: string, appears in the border at the top left of the dialog. Could be used to display a question or prompt.
- initialText: Text displayed in the entry window at outset. By default highlighted (so any key press will delete this). If no response is given, this text will be returned as the participant response.
- select: Boolean (True/False) variable specifying whether the initialText should be highlighted when the dialog box is presented. If True, text is highlighted. If false, initialText is not highlighted and cursor is set immediately after initialText. By default this is True.
- readOnly: Boolean(True/False) variable specifying whether text displayed in dialog box can be changed. If True, text can be entered. If false, initialText cannot be deleted and text cannot be entered in the dialog box.
- minTime: the number of milliseconds to wait until showing the "OK" button essentially forcing the dialog to be present for that amount of time
- timeout: number of milliseconds to wait before returning from the dialog even when the "OK" button has not been clicked

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