

# Python for Practice



## Tkinter (continuation)

# Tasks

- Implement text editor (ala Windows notepad)
- Implement URL downloader (like a web browser but without rendering html)
  - Entry for URL
  - ScrolledText for result
- Implement Minesweeper

# Help for tasks

- Manipulating text in ScrolledText
  - clean – `text.delete(1.0, END)`
  - get – `text.get(1.0, END)`
  - insert
    - `text.insert(INSERT, text)`
    - `text.insert(END, text)`

# Alarm callbacks

- `widget.after(delay_ms, callback, *args)`
  - registers an alarm callback that is called after a given time
- `widget.cancel(id)`
  - cancels an alarm callback

See  
[e01\\_text\\_tick\\_after.py](#)

# Alarm callbacks

- Can be used for animations

See  
[e02\\_button\\_animation.py](#)

# Canvas

- Widget for displaying drawings

```
master = Tk()

w = Canvas(master, width=200, height=100)
w.pack()

w.create_line(0, 0, 200, 100)
w.create_line(0, 100, 200, 0, fill="red",
dash=(4, 4))

w.create_rectangle(50, 25, 150, 75,
fill="blue")
```

# Canvas

- drawing
  - arc
  - bitmap
  - image
  - line
  - oval (a circle or an ellipse)
  - polygon
  - rectangle
  - text

# Canvas

- Added items (drawings) are kept until removed
  - can be modified

```
i = w.create_line(xy, fill="red")  
  
w.coords(i, new_xy)  
w.itemconfig(i, fill="blue")  
  
w.delete(i)  
  
w.delete(ALL)
```

See  
[e03\\_canvas\\_move.py](#)



# Canvas

- Items can have tags
  - tag ~ symbolic names

```
item = canvas.create_line(0, 0, 100,
100, tags="uno")
canvas.itemconfig(item, tags=("one",
"two"))
canvas.addtag_withtag("three", "one")
items = canvas.find_withtag("one")
```

- Fullscreen app

- `root.attributes("-fullscreen", True)`

- Mouse cursors

- `widget.configure(cursor="cross")`

- "arrow" "circle" "clock" "cross" "dotbox"  
"exchange" "fleur" "heart" "heart" "man" "mouse"  
"pirate" "plus" "shuttle" "sizing" "spider"  
"spraycan" "star" "target" "tcross" "trek" "watch"

# Task

- Create a simple “shooting” game
  - targets shot from the corner at random direction
  - destroyed by mouse clicks



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