

## SECTION 16: WORKING WITH IMAGES WITH PYTHON - 24 minutes, 4 parts

### 4/4 Python Image Exercises -

#### Solution

- -> for the image exercise puzzle
- -> we have two images
- -> we want to overlay one over the other, to show the message
- -> he first imports modules
- -> then opens the image and sets this equal to a variable
- -> then does this with the second image
- -> we can't just directly paste one of the images over the other
- -> the first stage is resizing one image to fit the other
- -> we need to enlarge the mask to the size of the matrix
- -> then highlight the words to see which we want
- -> we are resizing one of the images
- -> he prints out the size of one of the images
- -> he has resized one of the images and then changes its opacity and overlays it on top of the spreadsheet image
- -> this shows the message

```
In [1]: from PIL import Image
```

```
In [2]: words = Image.open('word_matrix.png')
```

```
In [3]: mask = Image.open('mask.png')
```


```
In [4]: words
```

```
Out[4]:
```

STOP	FAIR	SCORE	FIELD	WOLF	SNATCH	PIER	DAWN
WOOD	GREAT	MAID	STRONG	FRONT	TEAM	CLOSED	PITCH
HOLD	CURL	BRAVE	SPITE	DESK	FADE	NAME	LIST
FALL	HILL	TREE	WORK	SPHERE	CHORD	COAST	BOLD
YARD	LAND	CHURCH	LATE	TRAY	PLUCK	DARE	GRIND
FIGHT	MY	PAUSE	DOG	TIGHT	FUR	STREAM	SIN
CALF	HIKE	DASH	FLOOD	TENSE	WITH	PUMP	BAT

```
In [5]: mask
```

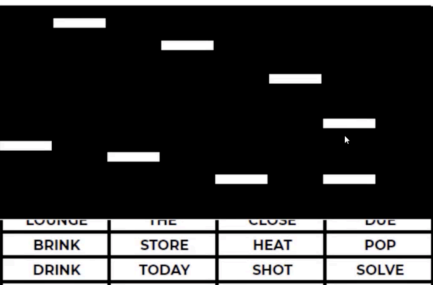
```
Out[5]:
```



```
In [6]: words.paste(mask, (0,0),mask)
```

```
In [7]: words
```

```
Out[7]:
```

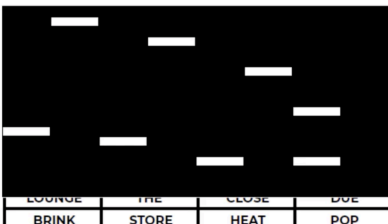


WOLF	SNATCH	PIER	DAWN
FRONT	TEAM	CLOSED	PITCH
DESK	FADE	NAME	LIST
SPHERE	CHORD	COAST	BOLD
TRAY	PLUCK	DARE	GRIND
TIGHT	FUR	STREAM	SIN
TENSE	WITH	PUMP	BAT
DRAWER	HOUSE	TOUCH	SUN
HIKE	SAVE	FOX	WAGE
EAST	SOW	MAP	OH
NOTE	WAVE	IMAGES	TRACE

```
In [6]: words.paste(mask, (0,0),mask)
```

```
In [7]: words
```

```
Out[7]:
```



WOLF	SNATCH	PIER	DAWN
FRONT	TEAM	CLOSED	PITCH
DESK	FADE	NAME	LIST
SPHERE	CHORD	COAST	BOLD
TRAY	PLUCK	DARE	GRIND
TIGHT	FUR	STREAM	SIN
TENSE	WITH	PUMP	BAT
DRAWER	HOUSE	TOUCH	SUN
HIKE	SAVE	FOX	WAGE
EAST	SOW	MAP	OH

```
In [13]: words.size
```

```
Out[13]: (1015, 559)
```

```
In [14]: mask = mask.resize((1015,559))
```

```
In [15]: mask.size
```

```
Out[15]: (1015, 559)
```

```
In [ ]: mask.putalpha(200)
```

```
In [17]: mask
```



```
In [18]: words.paste(mask,(0,0),mask)
```

```
In [19]: words
```

Out[19]:

STOP	FAIR	SCORE	FIELD	WOLF	SNATCH	PIER	DAWN
WOOD	CREAT	MAID	STRONG	FRONT	TEAM	CLOSED	PITCH
HOLD	CURL	BRAVE	SPITE	DESK	FADE	NAME	LIST
FALL	HILL	TREE	WORK	SPHERE	CHORD	COAST	BOLD
YARD	LAND	CHURCH	LATE	TRAY	PLUCK	DARE	GRIND
FIGHT	MY	PAUSE	DOG	TIGHT	FUR	STREAM	SIN
CALF	HIKE	DASH	FLOOD	TENSE	WITH	PUMP	BAT
FLU	WENT	SOW	QUOTE	DRAWER	HOUSE	TOUCH	SUN