Image Exercise - Solution

In the folder "Working with Images" (same folder this notebook is located in) there are two images we will be working with:

- word_matrix.png
- mask.png

The word_matrix is a .png image that contains a spreadsheet of words with a hidden message in it.

Your task is to use the mask.png image to reveal the hidden message inside the word_matrix.png. Keep in mind, you may need to resize the mask.png in order for this to work.

This exercise is more open-ended, so we won't guide you with the steps, instead, letting you explore and figure things out on your own as you would in a real world situation. However, if you get stuck, you can always view the solutions video or notebook for guidance. Best of luck!

Import Images

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

```python
In [2]: words = Image.open('word_matrix.png')
```
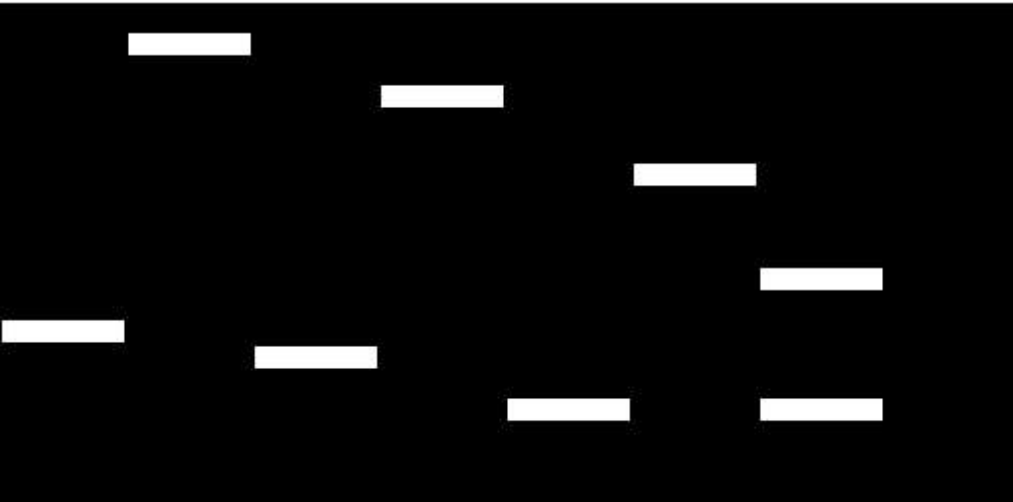
```python
In [3]: words
```

Out[3]:

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
FLU	WENT	SOW	QUOTE	DRAWER	HOUSE	TOUCH	SUN
LOUNGE	THE	CLOSE	DUE	HIKE	SAVE	FOX	WAGE
BRINK	STORE	HEAT	POP	EAST	SOW	MAP	OH
DRINK	TODAY	SHOT	SOLVE	NOTE	WAVE	IMAGES	TRACE
TURN	FOR	JAM	DECK	SOAK	STAB	SPIN	WEALTH
YOU	NOW	NEWS	CHEAT	LAST	FRAME	TRUCK	SPLURGE
GLARE	TRAVEL	ARE	ROOT	SCREAM	GHOST	BENCH	TONGUE
STYLE	LOOT	LODGE	MILE	PRAYER	MONTH	TROOP	STOP
SWING	MASS	FRESH	DORM	THE	BRIDE	BEST	SUM
SMASH	REST	PLAN	SITE	MOLE	DRY	DOSE	SCALE
CHOP	MY	GIFT	CORE	JUDGE	BLONDE	BEACH	STORE
HALT	WORK	NUT	SHIFT	TAIL	EAST	SLANT	REACH

In [4]:
```python
mask = Image.open("mask.png")
```

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

Out[5]:

Resize Images to Match

In [6]:
```python
mask.size
```

Out[6]:
```
(505, 251)
```

In [8]:
```python
words.size
```

Out[8]:
```
(1015, 559)
```

In [12]:
```python
mask = mask.resize((1015,559))
```

In [13]:
```python
mask.size
```
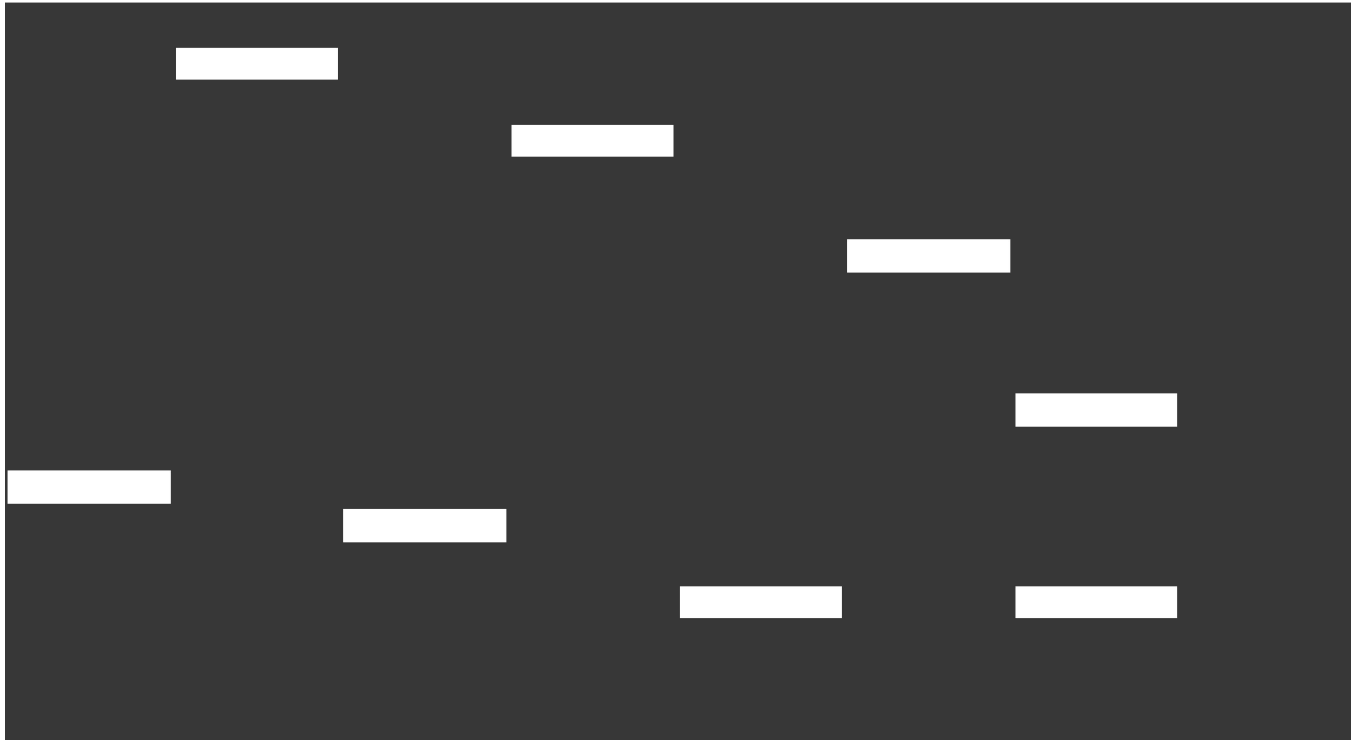
Out[13]:
```
(1015, 559)
```

Add in alpha parameter

Now we can't just paste them over, otherwise we won't see what is underneath, we need to add an alpha value.

```
In [14]:  mask.putalpha(200)
          # links.putalpha(128)
```

```
In [15]:  mask
```

Out[15]:


```
In [16]:  words.paste(mask,(0,0),mask)
```

```
In [17]:  words
```

Out[17]:

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
FLU	WENT	SOW	QUOTE	DRAWER	HOUSE	TOUCH	SUN
LOUNGE	THE	CLOSE	DUE	HIKE	SAVE	FOX	WAGE
BRINK	STORE	HEAT	POP	EAST	SOW	MAP	OH
DRINK	TODAY	SHOT	SOLVE	NOTE	WAVE	IMAGES	TRACE
TURN	FOR	JAM	DECK	SOAK	STAB	SPIN	WEALTH
YOU	NOW	NEWS	CHEAT	LAST	FRAME	TRUCK	SPLURGE
GLARE	TRAVEL	ARE	ROOT	SCREAM	GHOST	BENCH	TONGUE
STYLE	LOOT	LODGE	MILE	PRAYER	MONTH	TROOP	STOP
SWING	MASS	FRESH	DORM	THE	BRIDE	BEST	SUM
SMASH	REST	PLAN	SITE	MOLE	DRY	DOSE	SCALE
CHOP	MY	GIFT	CORE	JUDGE	BLONDE	BEACH	STORE
HALT	WORK	NUT	SHIFT	TAIL	EAST	SLANT	REACH

Excellent! Hope you enjoyed this one!