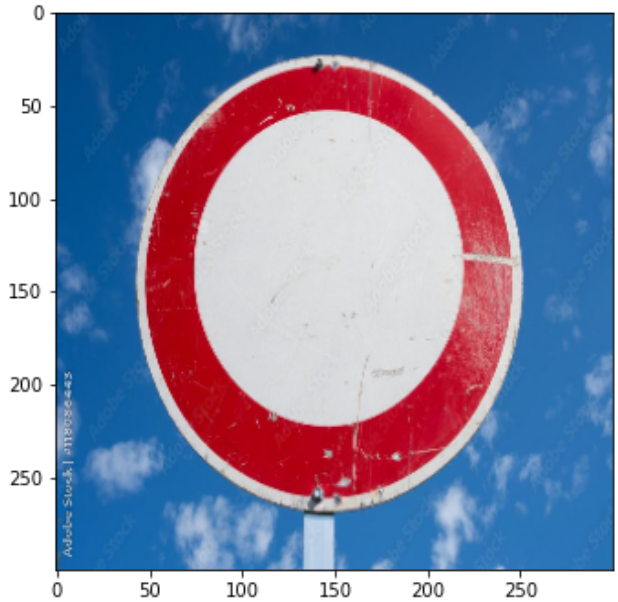
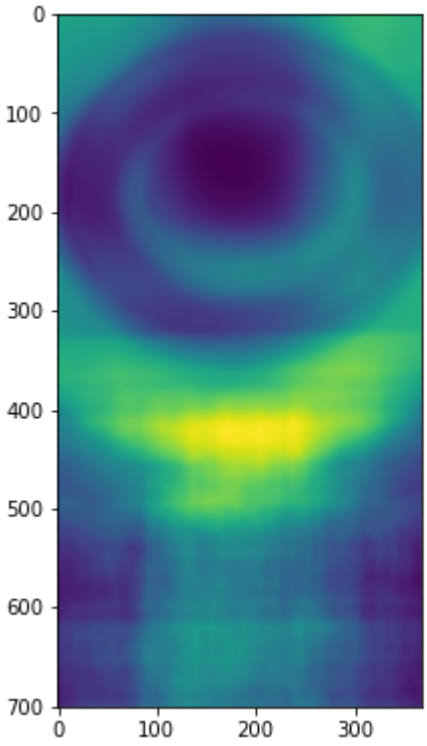
In [1]:
```
import cv2 as cv
import numpy as np
import matplotlib.pyplot as plt
import os
%matplotlib inline
```

In [2]:
```
def load(path):
    img=cv.imread(path)
    img=cv.cvtColor(img,cv.COLOR_BGR2RGB)
    return img
```

In [3]:
```
def display(img1,img2):
    fig=plt.figure(figsize=(12,14))
    ax=fig.add_subplot(221)
    ax.imshow(img1)
    ax=fig.add_subplot(222)
    ax.imshow(img2,cmap="gray")
    plt.show()
```

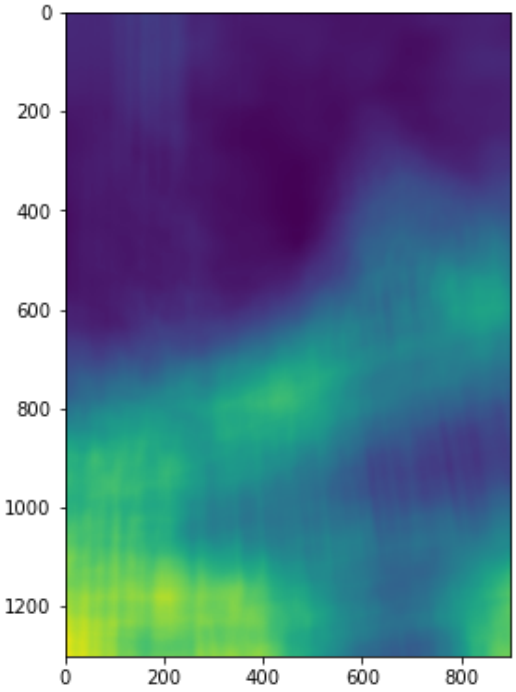
In [4]:
```
#template matching
query_image=cv.imread("/Users/mehradhq/Computer_Vision/Research_2/dataset/train/Prohibition_Signs/13.jpeg")
target_image=cv.imread("/Users/mehradhq/Computer_Vision/Research_2/dataset/train/Prohibition_Signs/21.jpeg")
query_image=cv.resize(query_image,(300,300))
query_image=cv.cvtColor(query_image,cv.COLOR_BGR2RGB)
target_image=cv.cvtColor(target_image,cv.COLOR_BGR2RGB)
result=cv.matchTemplate(target_image,query_image,cv.TM_SQDIFF_NORMED)
min_val,max_val,min_loc,max_loc=cv.minMaxLoc(result)
top_left=min_loc
bottom_right=(int(top_left[0]+query_image.shape[1]),int(top_left[1]+query_image.shape[0]))
display(query_image,target_image)
cv.rectangle(target_image,top_left,bottom_right,color=(255,0,0),thickness=10)
display(result,target_image)
```





In [5]:

```
#template matching
query_image=cv.imread("/Users/mehradhq/Computer_Vision/Research_2/dataset/train/Prohibition_Signs/38.jpeg")
target_image=cv.imread("/Users/mehradhq/Computer_Vision/Research_2/dataset/train/Prohibition_Signs/2.jpeg")
query_image=cv.resize(query_image,(300,300))
query_image=cv.cvtColor(query_image,cv.COLOR_BGR2RGB)
target_image=cv.cvtColor(target_image,cv.COLOR_BGR2RGB)
result=cv.matchTemplate(target_image,query_image,cv.TM_SQDIFF_NORMED)
min_val,max_val,min_loc,max_loc=cv.minMaxLoc(result)
top_left=min_loc
bottom_right=(int(top_left[0]+query_image.shape[1]),int(top_left[1]+query_image.shape[0]))
display(query_image,target_image)
cv.rectangle(target_image,top_left,bottom_right,color=(255,0,0),thickness=10)
display(result,target_image)
```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