Table of Contents

..... 1
1 1
2 1
3 2
4/extra 2

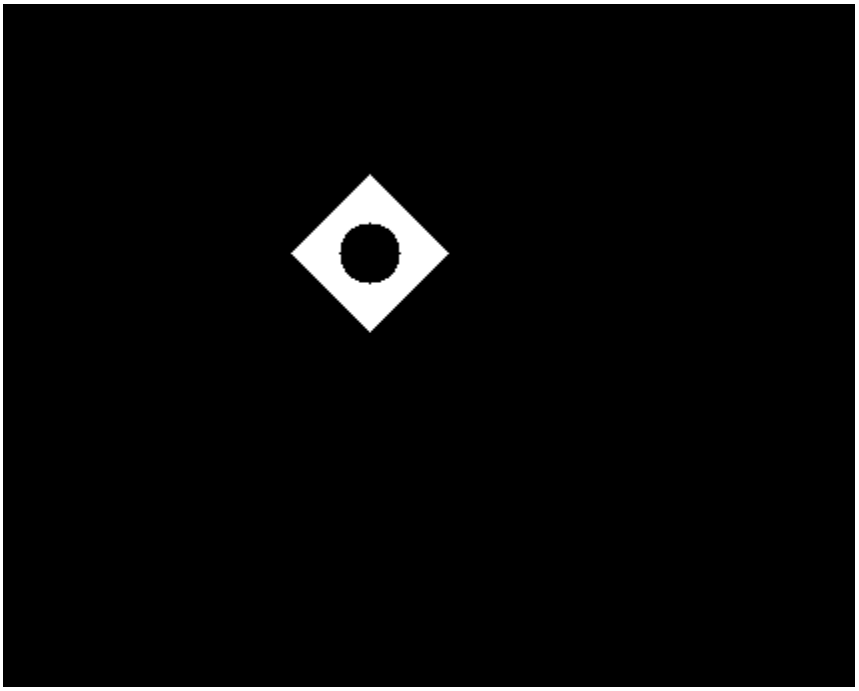
```
% zidane karim
```

1

```
u_nums = linspace(-pi, pi, 10^4);
u = exp(sin(u_nums));

v = u(u < 2);

avg = sum(v) / length(v); % not / 10^4 bc includes too many
```

2

```
rows = [1:256];
cols = [1:256]';
first = (abs(rows - 100) + abs(cols - 100)) < 40;
second = sqrt((rows - 100).^2+(cols - 100).^2) > 15;
L = first & second;

imshow(L);
```



3

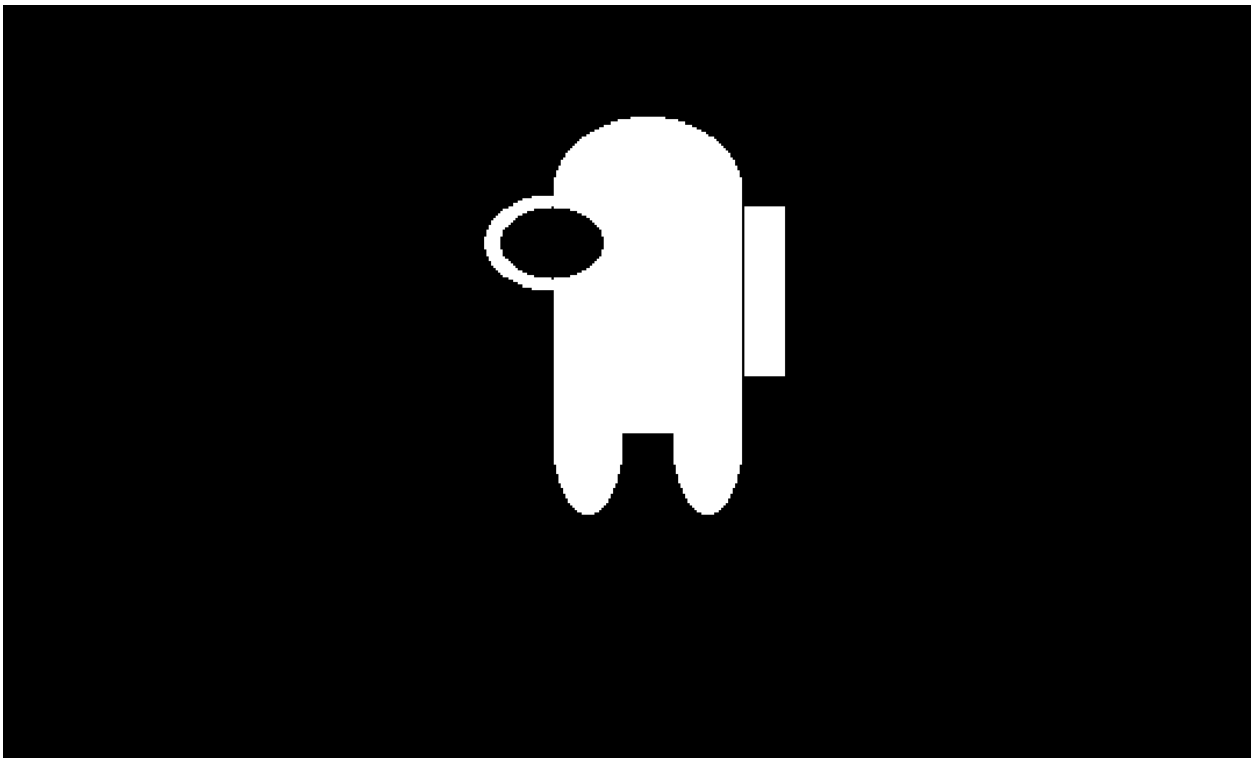
```
vector_1 = [1:6];
vector_2 = [1:6]';
vector_3 = reshape(1:6, 1, 1, 6);

S = vector_1 + vector_2 + vector_3;

S_2 = sum(S(:) >= 11);
disp(S_2); % 108
prob = S_2 / numel(S); % 50%
```

```
   108
```

4/extra

```
rows2 = [1:256];
cols2 = [1:256]';

first_term = ((rows2-88) .^2)./2 ;
second_term  = ((cols2-76).^2);
primary_condition = (sqrt(first_term + second_term) > 15);

extra1 = max(abs(rows2 - 128), (4*abs(cols2 - 106))/5) < 40;
extra2 = max(abs(rows2 - 177), abs(cols2 - 96)/4) < 9;
extra3 = sqrt((rows2 - 128).^2 + (3*(cols2 - 56).^2)/2) < 40;
extra4 = sqrt(((rows2 - 88).^2)/2 + (cols2 - 76).^2) < 20;
extra5 = sqrt((rows2 - 103).^2 + ((cols2 - 156).^2)/5) < 15;
extra6 = sqrt((rows2 - 153).^2 + ((cols2 - 156).^2)/5) < 15;
```

```
extra_joined = extra1 | extra2 | extra3 | extra4 | extra5| extra6;


U = primary_condition & extra_joined;


figure;
imshow(U); % sus!
```



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