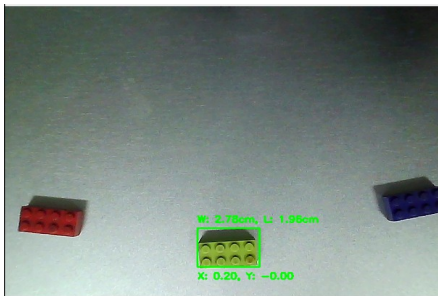
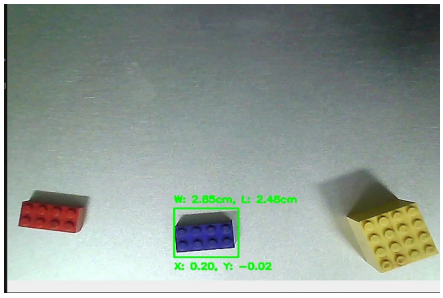
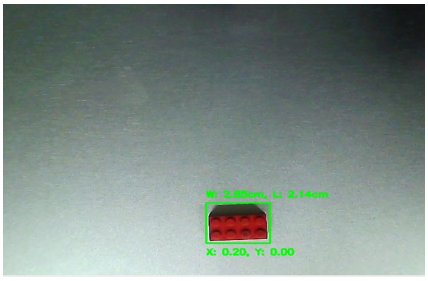
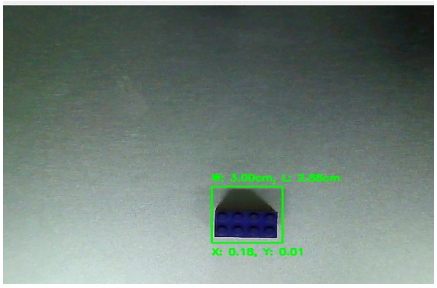
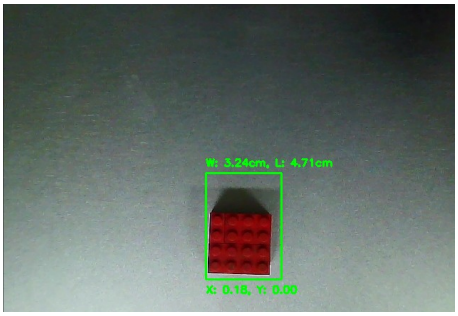
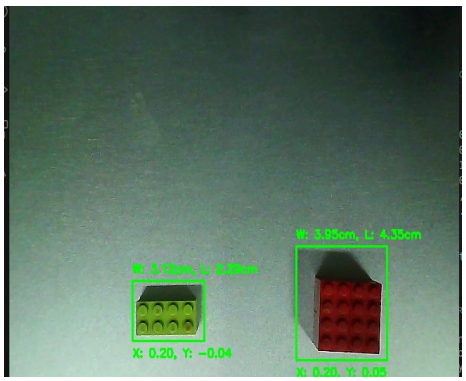
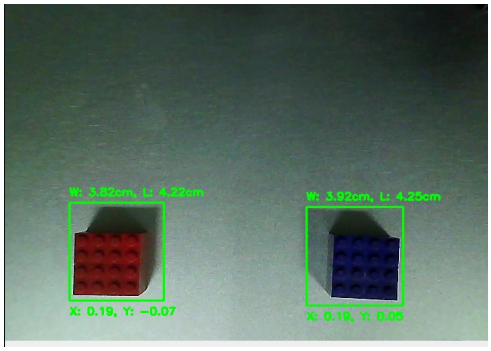
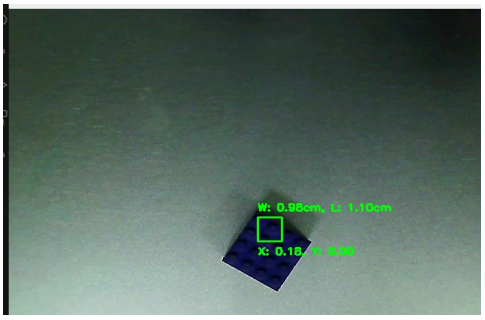
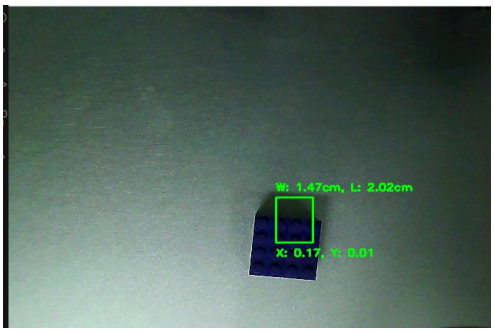
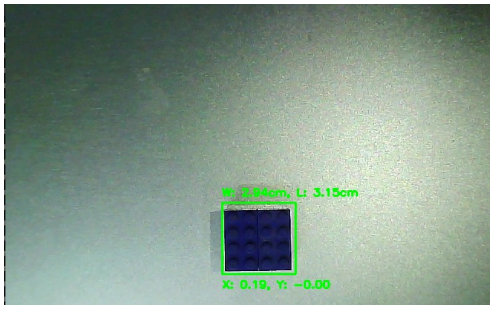
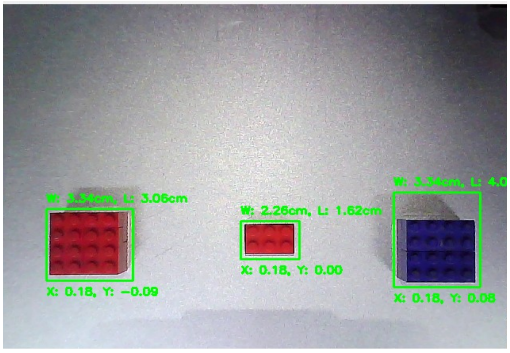
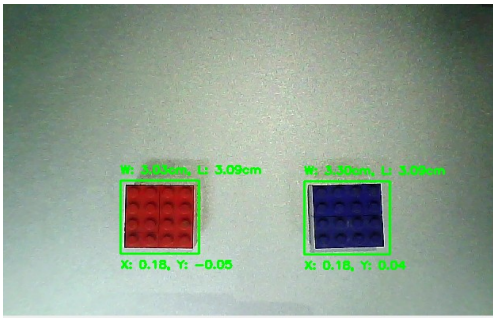
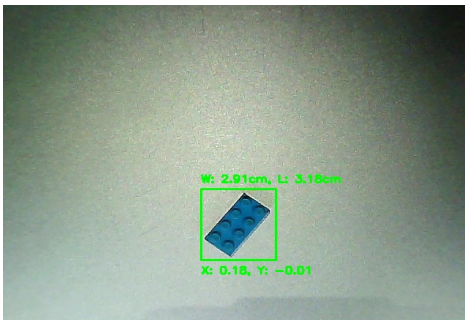
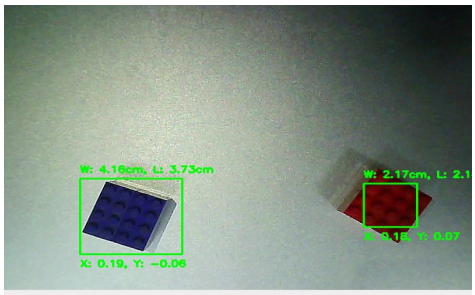
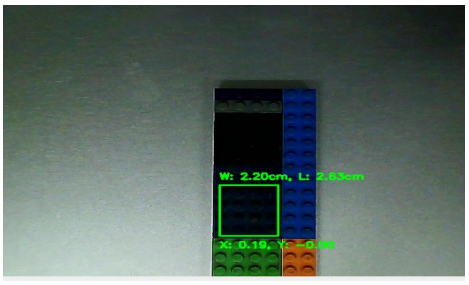
DOCUMENTATION OF TEST CASES

S.NO.	COORDINATE	REMARKS
1.		-Only one block with Horizontal orientation is detected and picked and placed -On multiple trials sometimes the block would slip -No light source
2.		-Only one block with horizontal orientation is detected and picked and placed -No light source
3.		-The block is detected and is picked and placed -Horizontal orientation -No light source
4.		-The block is detected and picked and placed -Horizontal orientation -No light source
5.		-The block is detected and picked and placed -Horizontal orientation -No light source

6.		- Both blocks were detected but only red block is picked and placed -Horizontal orientation -No light source
7.		-Both blocks were detected and picked and placed -Horizontal orientation -No light source
8.		-The block was detected and picked and placed but in multiple trials it failed or was not detected -Non horizontal orientation -No light source
9.		-The block was detected but not picked and placed due to less accurate coordinate -Horizontal orientation -No light source
10.		-The block was detected and picked and placed -Very accurate coordinates -Light source is present

11.		-The three blocks were detected and picked and placed -Horizontal orientation -Light source is present
12.		-Both blocks were detected and picked and placed -Horizontal orientation -No light source
13.		-The block was detected but not picked and placed -Non horizontal orientation -Light source is present
14.		-The blocks were detected but only purple block was picked and placed -Non horizontal orientation -Light source is present
15.		-The block was detected and picked and placed -Not very accurate coordinates -Light source is present

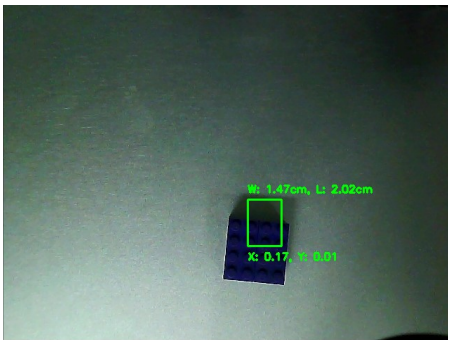
REMARKS

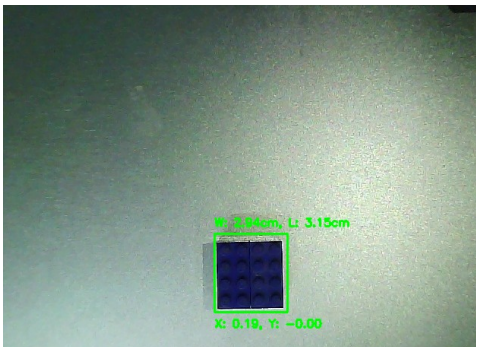
1)When there is no light source then the shadow of the block is detected too, which causes less accurate coordinate detection .Sometimes there are false detection of blocks too.

2)The blocks with more height have a bigger shadow and hence more inaccurate coordinates.

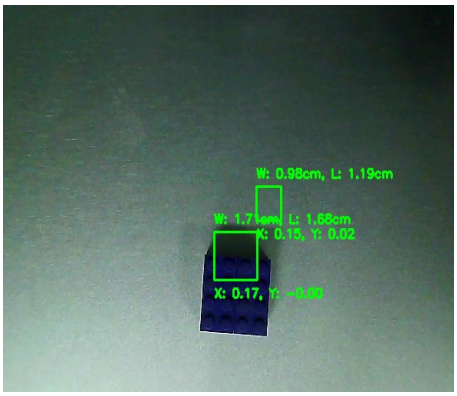
3)When the light source is used there is no shadow and hence the block is detected properly with accurate coordinates

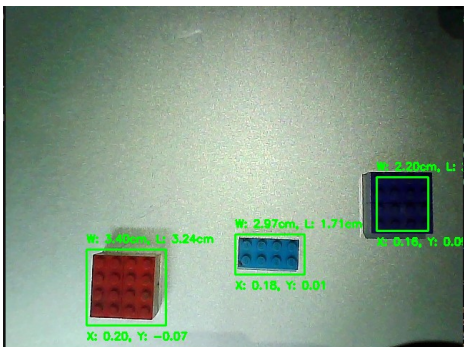
e.g) without light source with light source(no shadow)



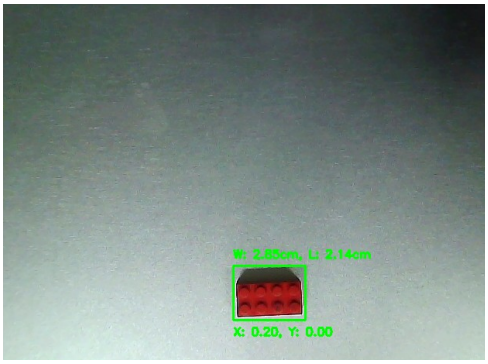


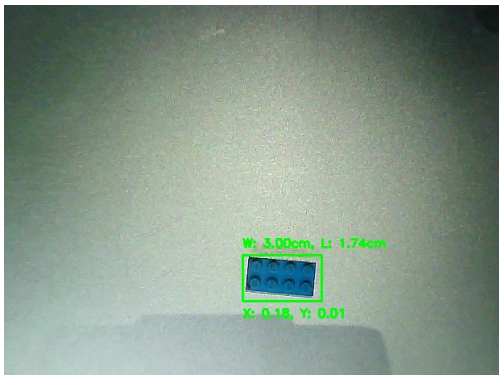
(inaccurate coordinates)





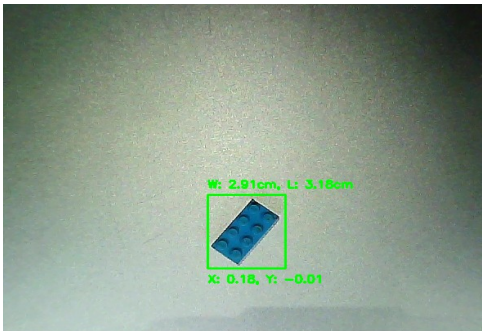
(false detection)





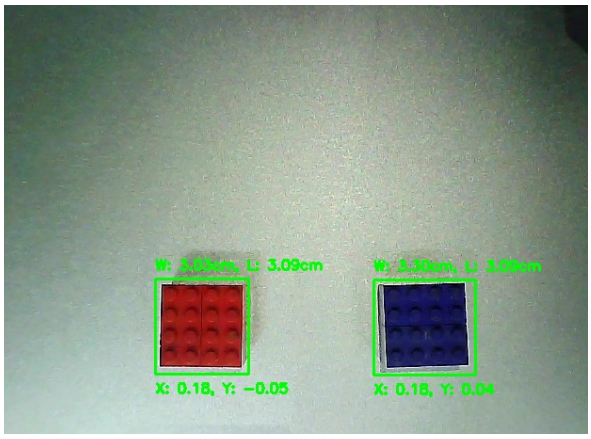
(shadow is detected too)

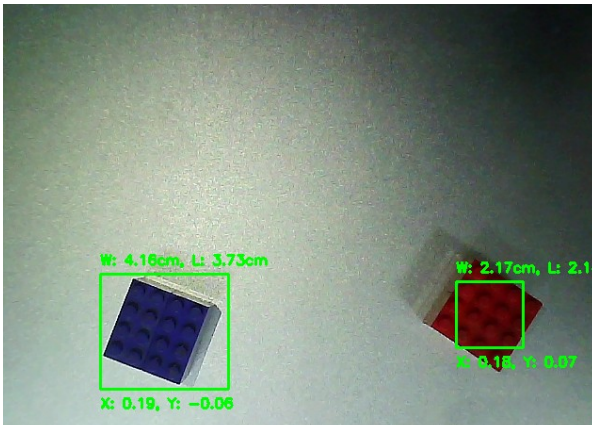
(not detected)



4)the horizontal orientation has better coordinate accuracy and is detected and picked and placed properly which is not the case for non-horizontal orientation.(the block should be in horizontal orientation for better grip)

.g) horizontal orientation non-horizontal orientation





5)Only rectangular lego pieces were detected.

e.g) These pieces were not detected

6)The most optimal result was obtained when the blocks were in horizontal orientation with light source present.So a light source (flash light) can be installed near the camera and orientation estimation of blocks can be done such that gripper aligns itself with the block's orientation when picking it up, leading to improved performance.