

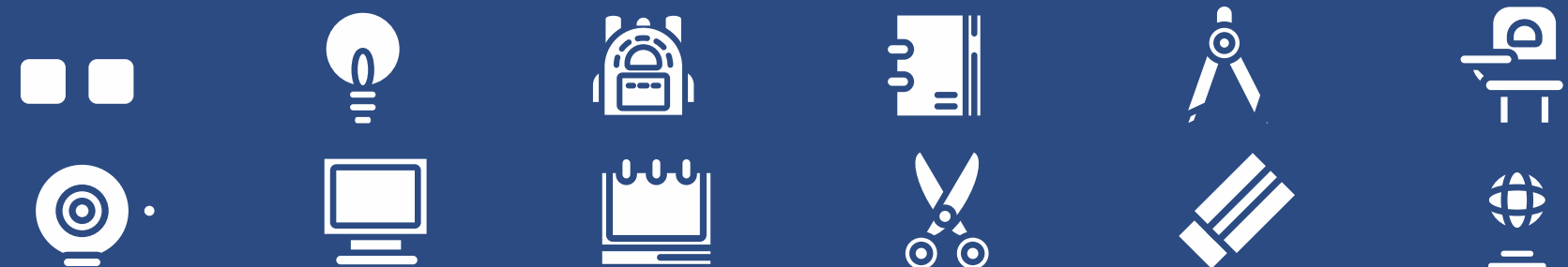
smart
methods



7 JULY 2021

INDUSTRIAL SCENARIO

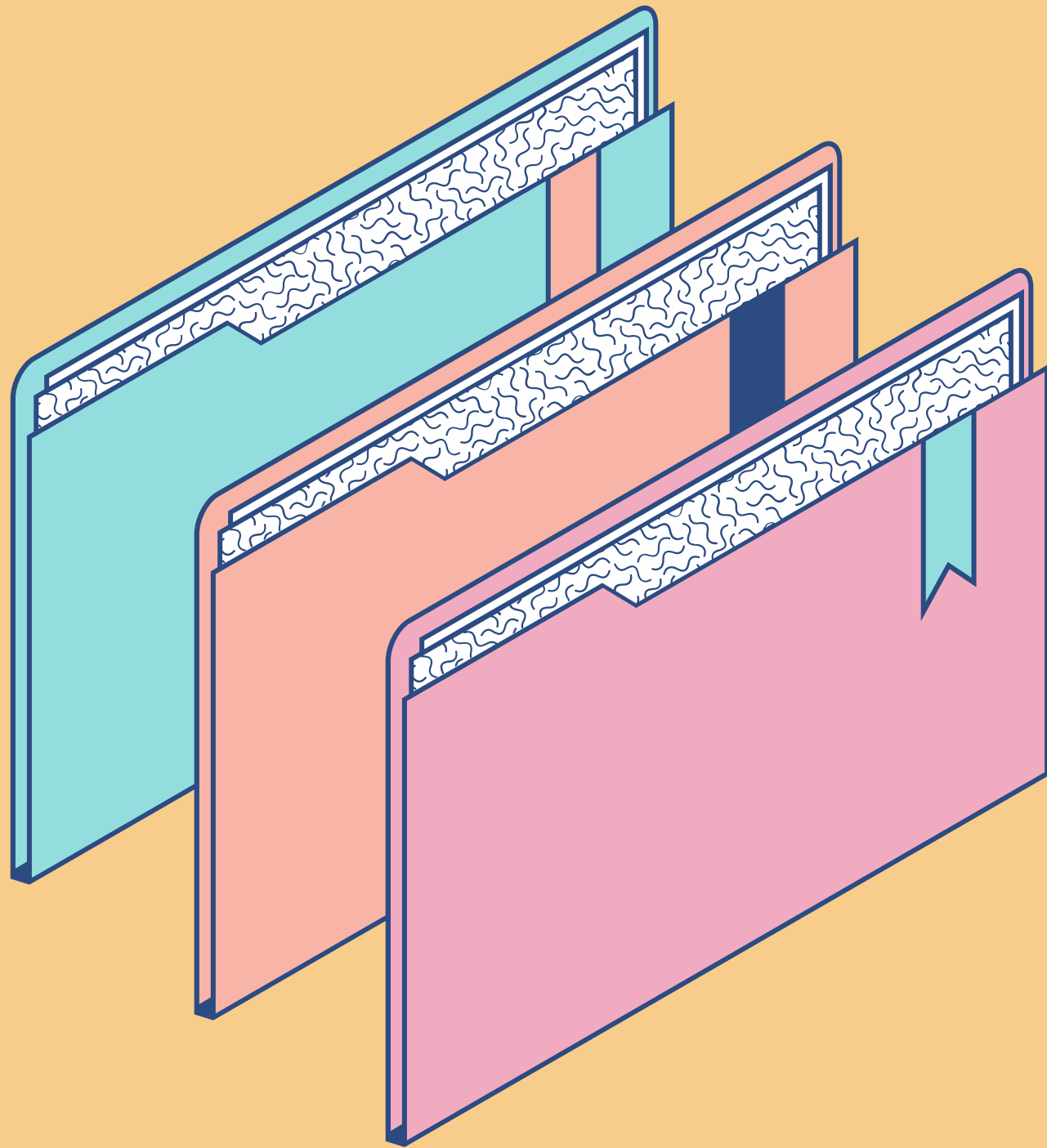
rahaf fahd



Operation

IT IS A ROBOT WITH HUMAN CONTROL VIA THE INTERNET THAT CONTAINS A BASE, AN ARM, A BALLOON AND A BOX .

- The robot attacks and defends by moving the arm and the base .
- The robot tries to blow up the opponent's balloon and protect its balloon .
- The box contains electronic parts .

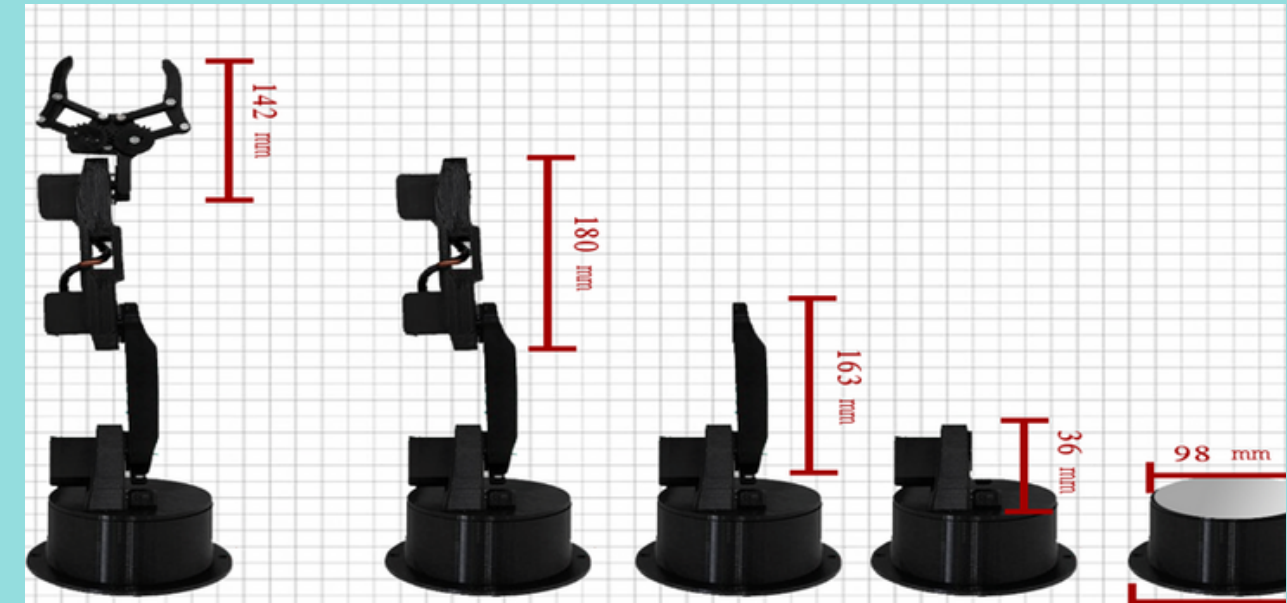


Robot dimensions

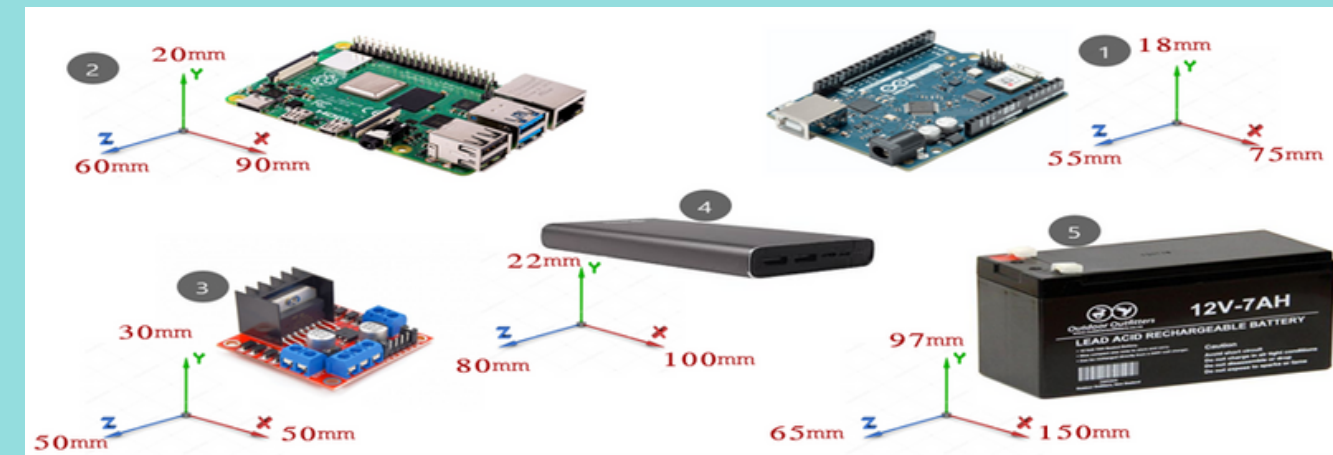
The full dimensions of the robot
 $X=600\text{mm}$, $Z=500\text{mm}$, $Y=620\text{mm}$

ARM DIMENSIONS

$X=122\text{mm}$, $Z=122\text{mm}$, $Y=620\text{mm}$

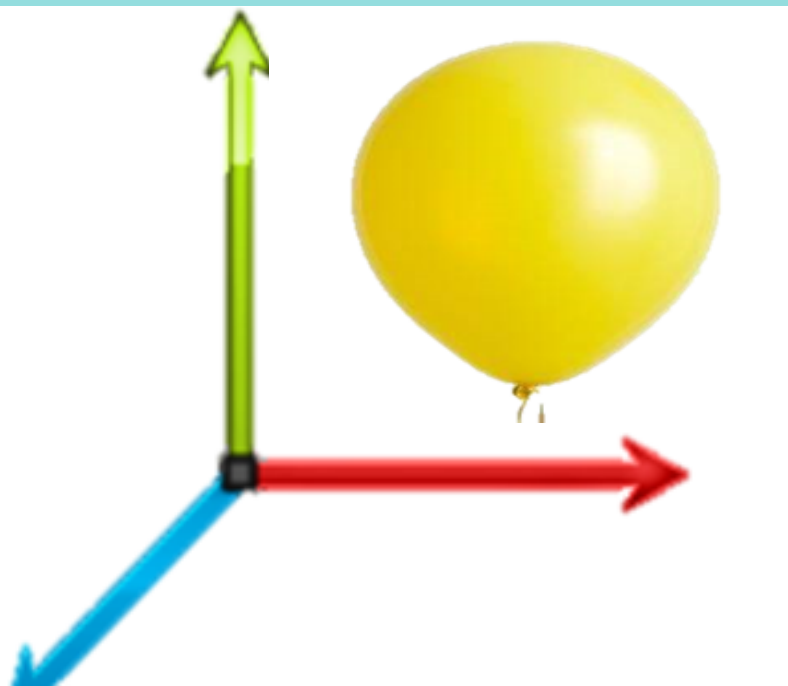


ELECTRONIC PARTS DIMENSIONS



BALLOON DIMENSIONS

$X=35\text{mm}$, $Z=75\text{mm}$, $Y=55\text{mm}$



BOX DIMENSIONS

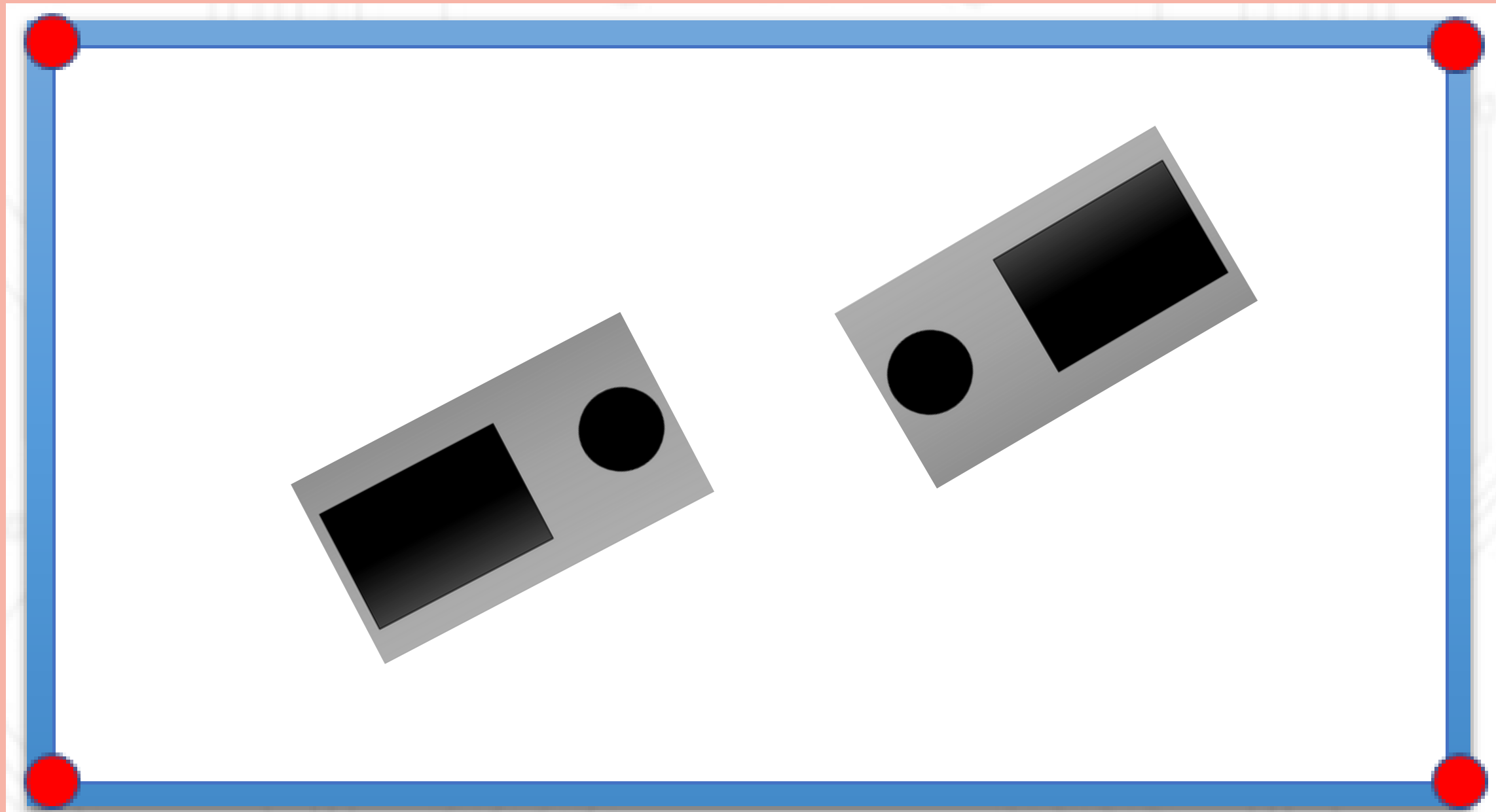
$X=270\text{mm}$, $Z=130\text{mm}$, $Y=125\text{mm}$



Arena Dimensions

$X=2.5\text{m}$, $Z=2\text{m}$, $A= 5 \text{ m}^2$

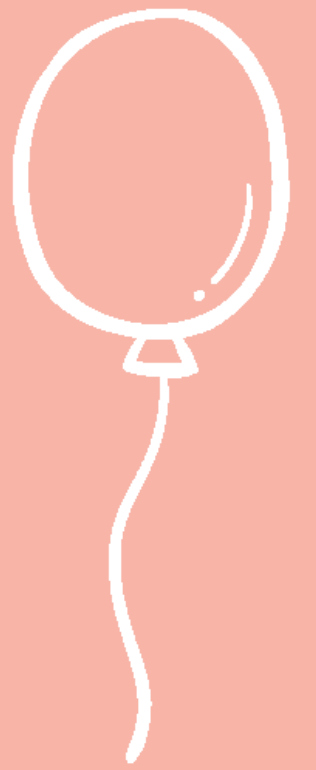
It is twice the area of the two robots to be able to get around each other





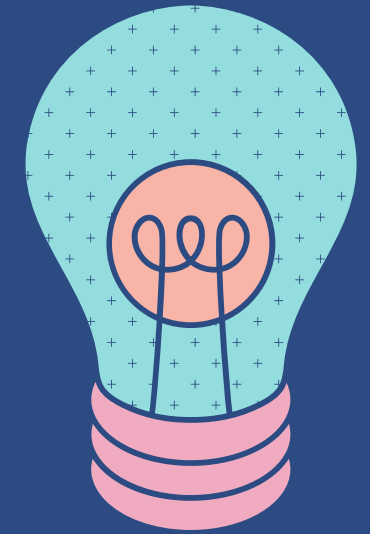
Operating Laws

- If The balloon explodes under any circumstance, loss.
- If the robot break down, loss.
- If the robot exit the arena , loss .
- Any cheat , will make the cheating robot lose .
- Each robot tries to explode the opponent's balloon , And diapers his own balloon .



Control Panel Description

- THE ROBOT IS CONTROLLED BY A CONTROL INTERFACE ON THE WEB BROWSER.
- THE INTERFACE HAS AN ON AND OFF BUTTON AT THE BOTTOM .
- IT HAS SIX SLIDING SWITCHES, EACH MOTOR HAS ITS OWN SWITCH .
- THE FAR LEFT OF THE SLIDING SWITCH IS THE ORIGINAL ANGLE OF THE MOTOR (0) .
- FAR RIGHT THE SLIDING SWITCH IS THE MAXIMUM ANGLE OF THE MOTOR(180 DEGREES) .



MOTOR 1



MOTOR 2



MOTOR 3



MOTOR 4



MOTOR 5



MOTOR 6



SAVE on off

Operation process

IOT

Create an interface and a control panel on a web browser that connects it to the robot via the Internet

AI

Make the robot smarter by introducing it to the arena and the mission

Mechanics

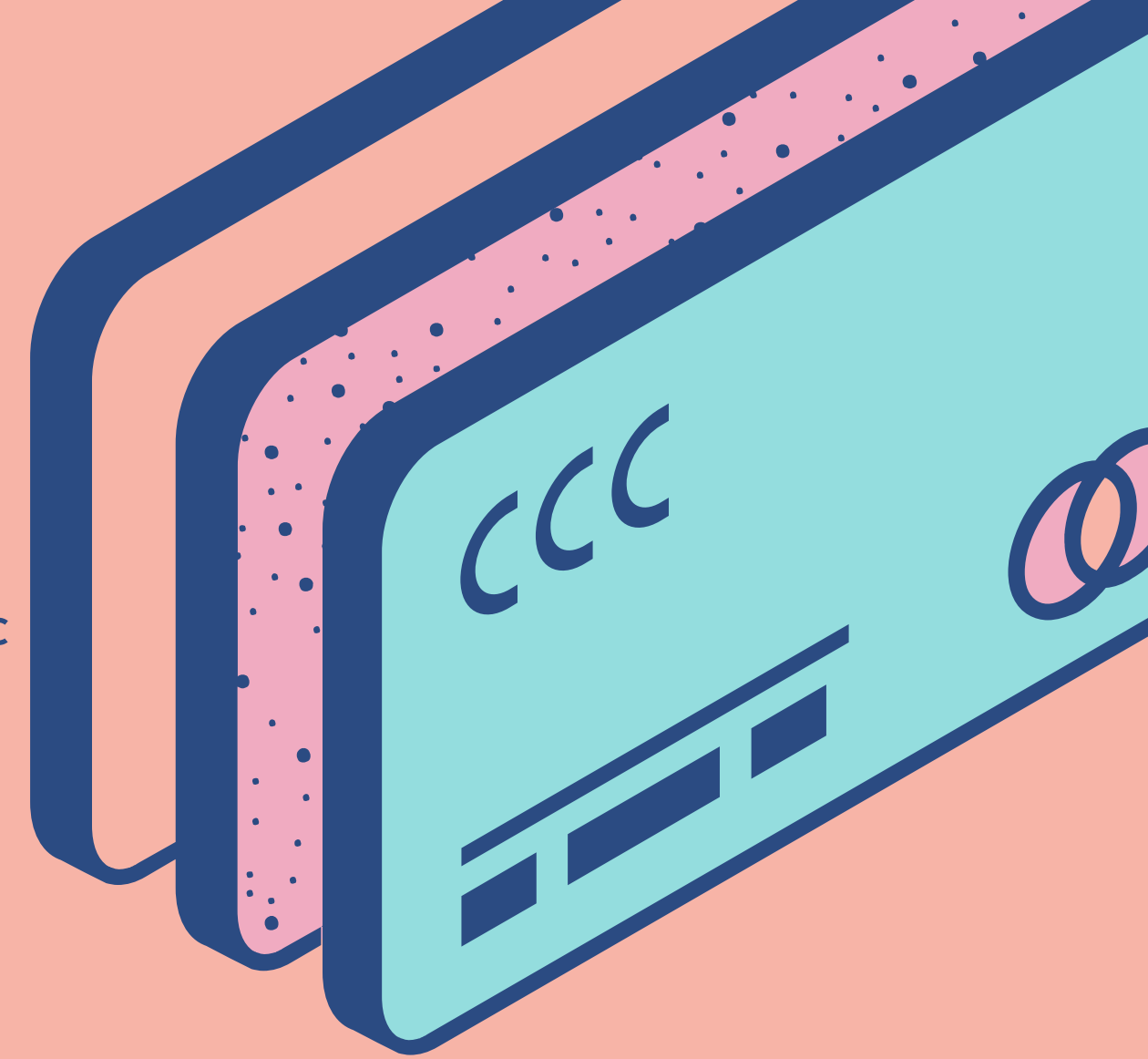
Designing shapes, calculating dimensions, then printing and installing them

Electricity

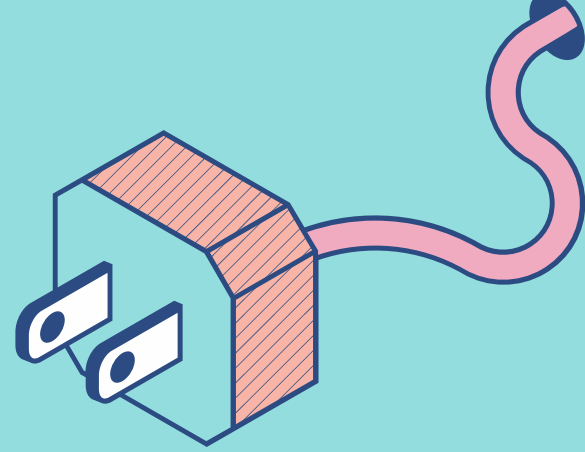
Choosing the appropriate electronic parts, installing them and then programming

industrial and systems

Monitoring the progress of the process Coordination between the team Help all



Testing



1

STEP

Functional test

- Test the quality and durability of mechanical parts and the possibility of moving them
- Test all electronic parts and motors for the base and arm



2

STEP

Functional test

- Test how well the interface works , And how Lag it is between the interface and the robot
- Complete installation and testing of the robot



3

STEP

Non functional test

- Gradually increase the load to determine the maximum load that the robot can handle
- Continuous work to see how continuity of work



4

STEP

Non functional test

- Using the interface with people of different class, to see how easy and clear the interface is



5

STEP

Additional testing project

- A different robot is used that has been tested to make a fight among them and to know the extent of competition



Tolerance

1- In the user interface

- There may be a disruption in the Internet or some slowdown in the process as a result of poor communication or the large number of users.

2-In mechanical parts

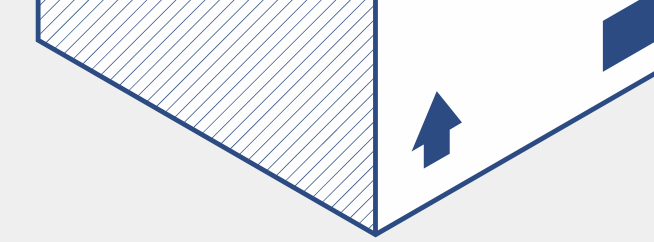
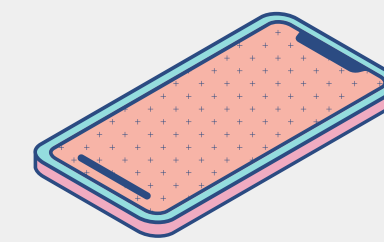
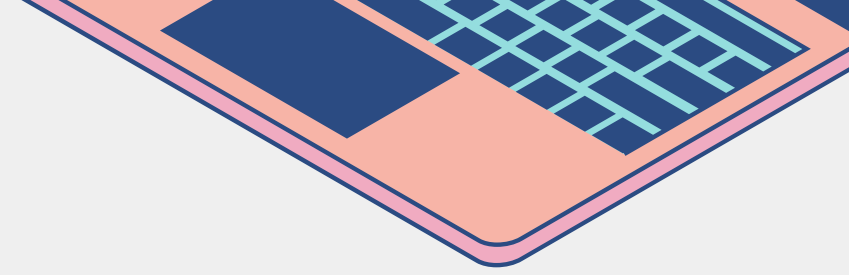
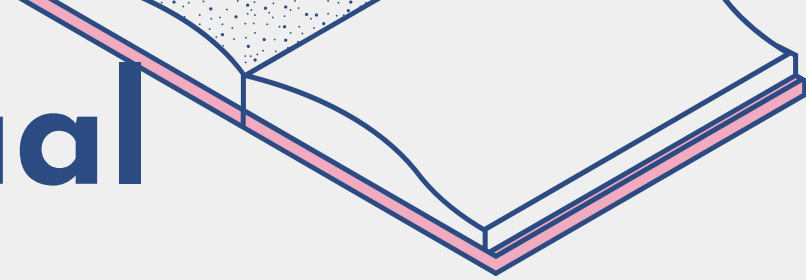
- Incorrect installation of parts and structure .
- Damage to some parts as a result of engine heat and friction of parts .
- The presence of some dirt plankton between the parts .

3- In electronic parts

- Incorrect installation of electronic parts .
- Engine combustion as a result of wrong conduction or heat resulting from excessive work .
- A lot of electronic parts are contacted as a result of breakage .



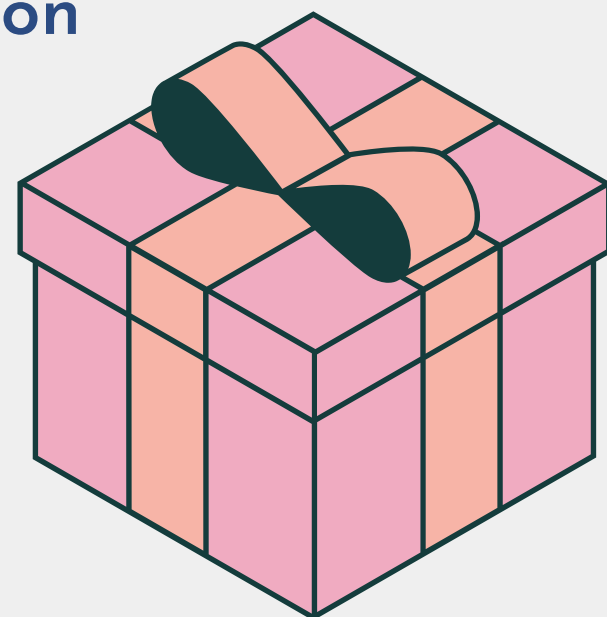
User manual



The robot run

- Make sure that you have rid the robot of all parts of the protection .
- Charge the robot .
- Turn on the robot .
- Enter the user interface using the following link.

<https://www.s-m.com.sa/#con>



Participate in the competition

After knowing the method of use and reviewing the terms and conditions on page 6, you can subscribe by visiting the following link .

<https://www.s-m.com.sa/#con>

Connect with us

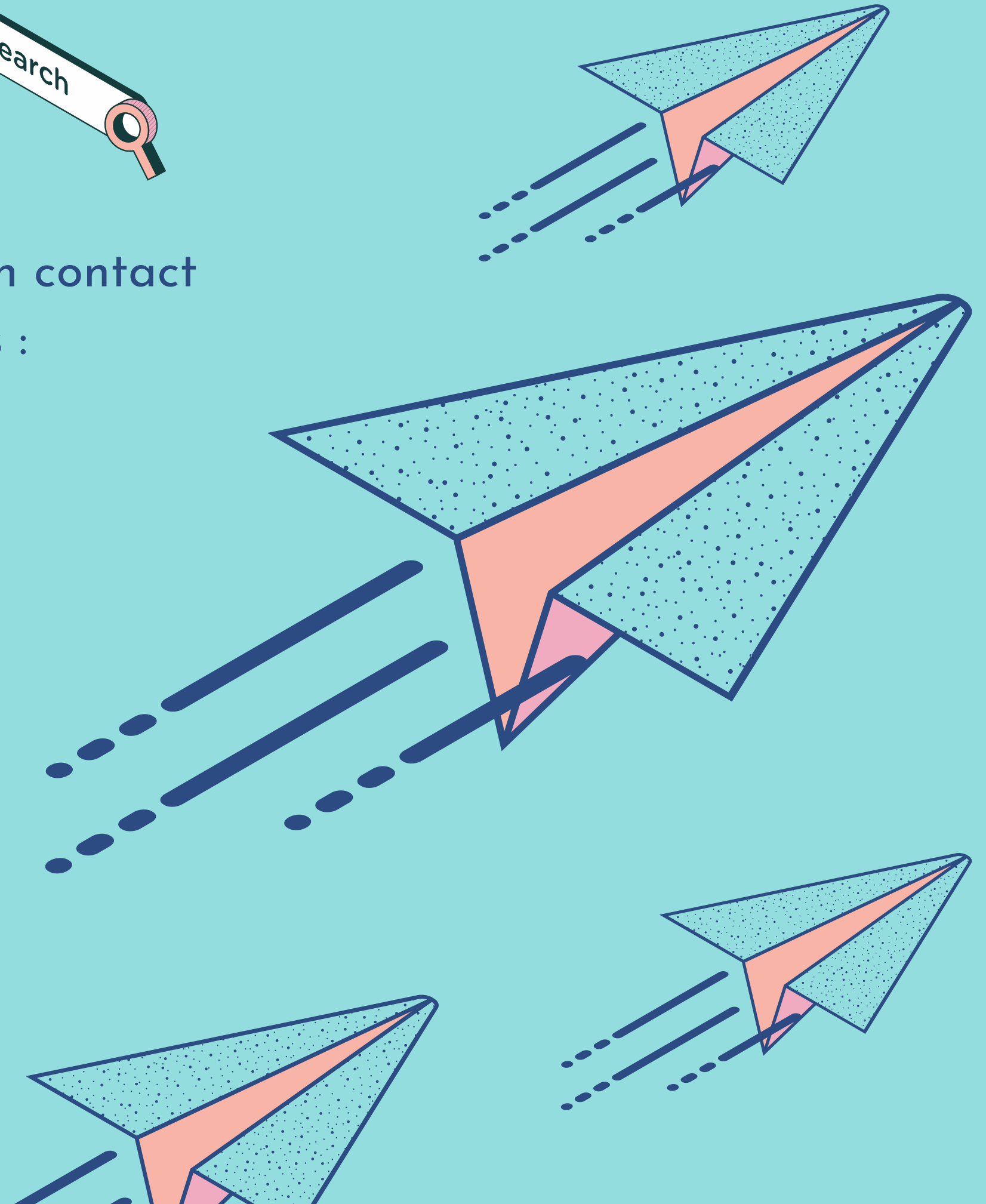


For assistance, inquiries and maintenance, you can contact us on the following channels during working hours :

Email : info@s-m.com.sa

Web : <https://www.s-m.com.sa/#con>

Phone : 0580202718



Warranty

- OPERATION GUARANTEE ONLY .
- 6 MONTHS MAINTENANCE GUARANTEE



It is necessary to know the warranty of the parts and do an actual test on the robot in order to give an actual guarantee .

When does the warranty expire ?

- When the limit of time is done .
- Tampering with the robot, adding or opening .
- When the robot is badly used .
- When exposed to water .
- When the robot crash .