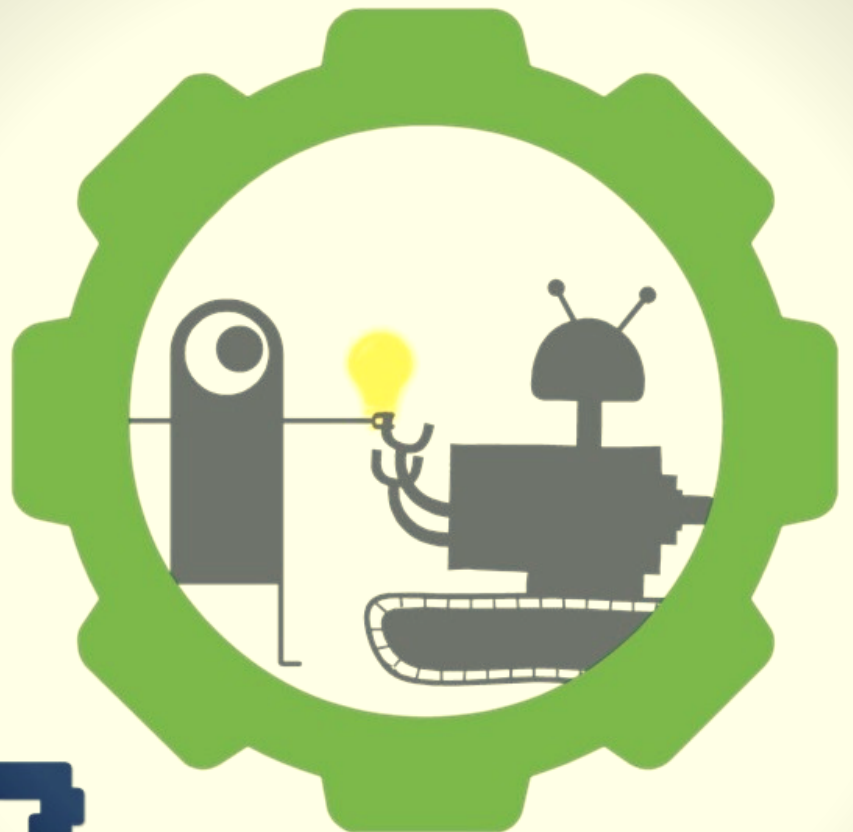


"GALAXIAN"



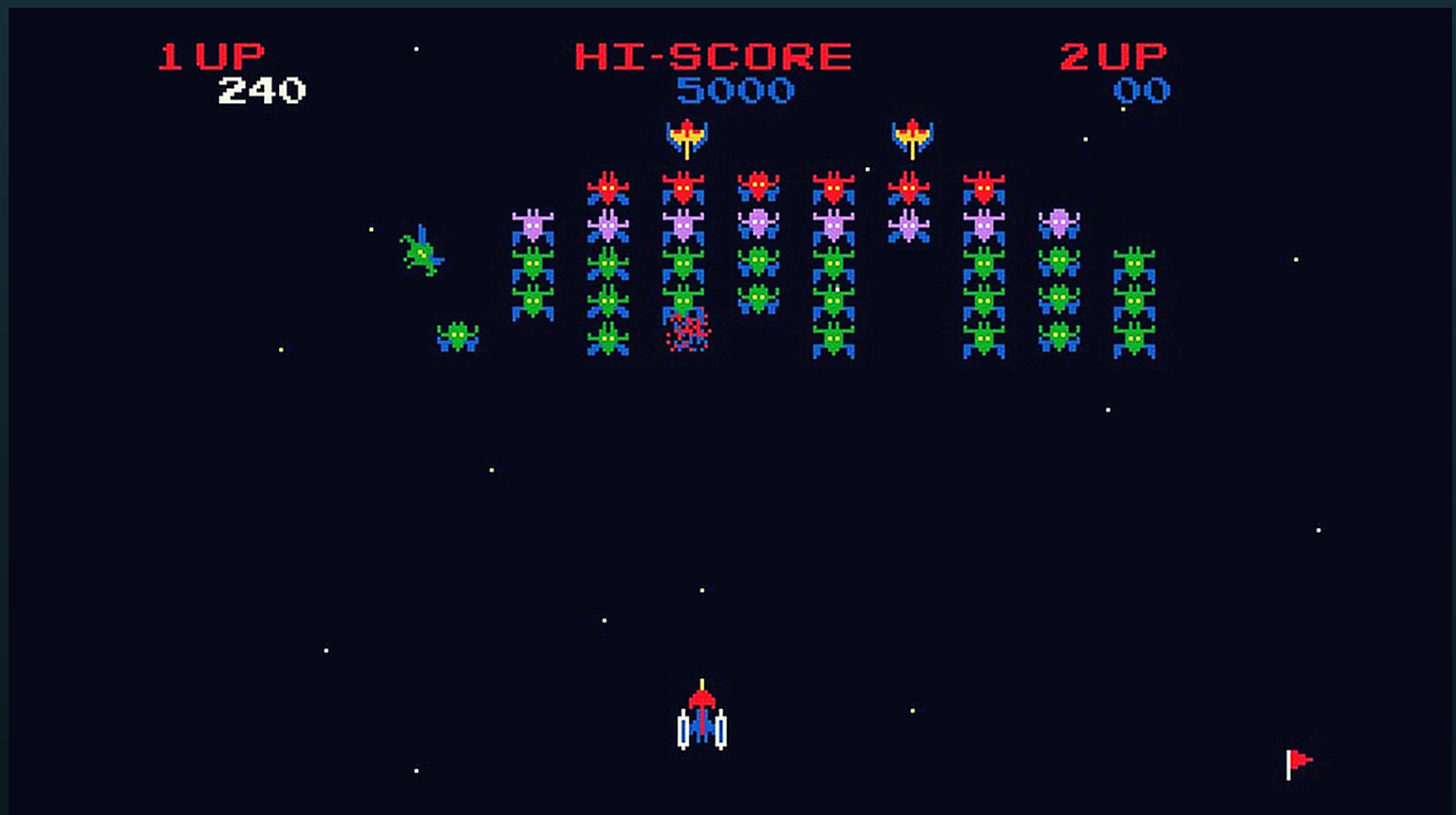
-IMAGE PROCESSING EVENT-
AUTOMATON 2K17
IEST, SHIBPUR



ROBODARSHAN

*Remember playing
the game?*

"GALAXIAN"



Well, we brought
your childhood
memories back...

Now, its time for your robot to
play the game!

**Blast and
Dodge
aliens!**

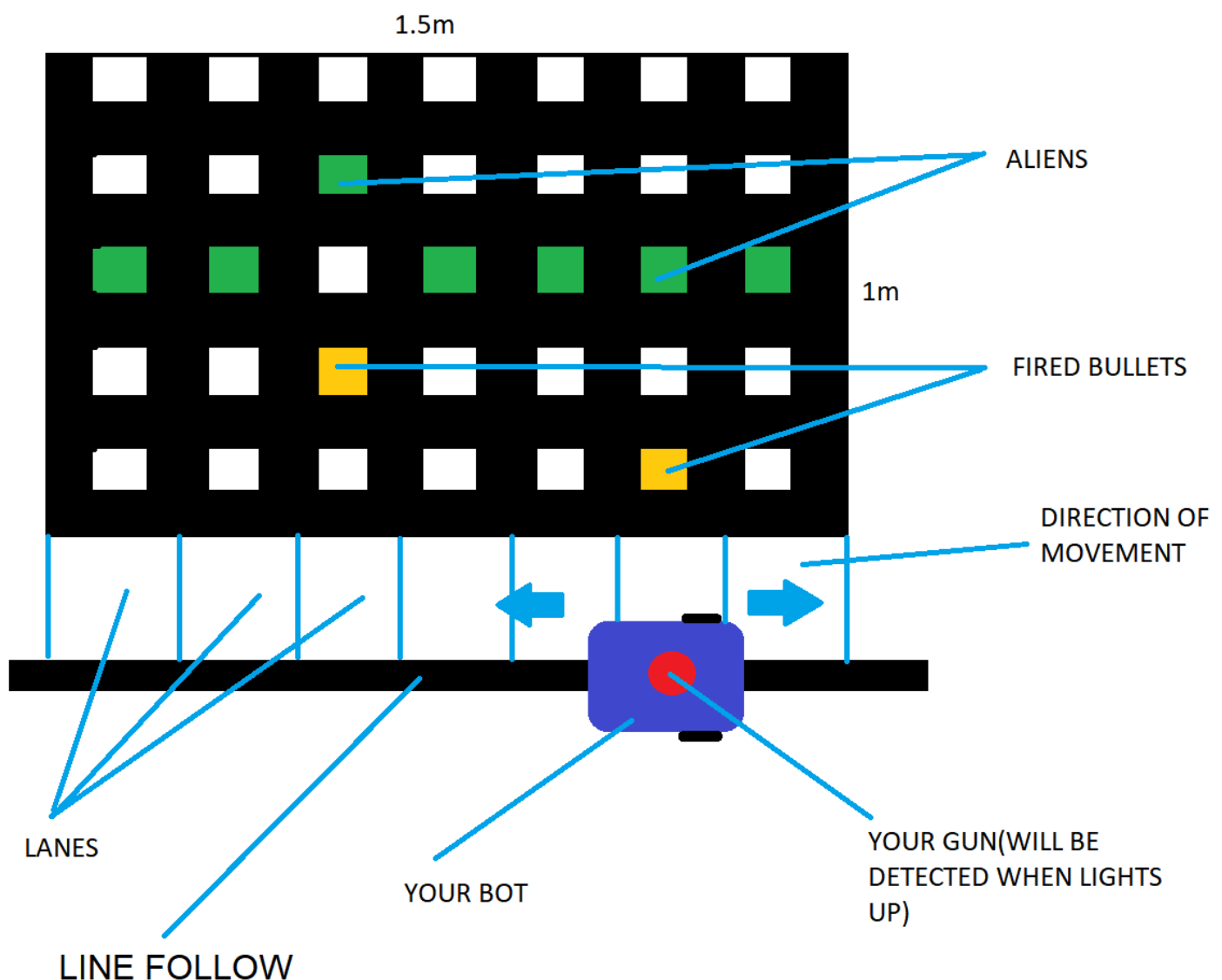
LIKE NEVER BEFORE

Problem Statement

- **Build** a line following robot having top view colour of blue with a red LED on top.
- The robot will receive instructions from a computer which has a webcam connected.
- The webcam will feed in the top view of the arena.
- The arena is a 1.5m X 1m rectangle. At one side of the arena, there is a line that your bot will be allowed to follow forward/backward.
- There are seven columns of LED blocks in the arena.
- Each column contains five LED blocks.
- Aliens and bullets fired by them are represented by green and yellow LEDs respectively.
- Your gunfire will be represented by the blink of red LED on your bot. It should be on for some amount of time to be noted.
- We will automatically detect fires when your bot blinks the red LED.
- The bullets fired by aliens will move towards the line.
- The bullet fired by your bot will move towards the aliens.
- Bullets will never change their course until it hits.
- If the bullet reaches the line, i.e. the last yellow LED in that column blinks, and your bot is also in the column of that bullet, your bot's life will get reduced.

- Your bot has to move along the line and fire in the lanes.
- You can also destroy opposite bullets with your bullets!
- Fire your gun to destroy the bullet if one is coming or the alien in the corresponding column.
- Your score will increase with the number of aliens you kill.
- Everything will be simulated automatically and will be displayed on the screen as well as in the arena.

View of the Arena in 2D



Qualification Round

- You will have 5 lives.
- There will be 4 slow paced aliens.
- Kill them all and you qualify for the finals.

Finals

- You will have 3 lives.
- There will be 3 slow paced aliens.
- A **boss** alien will be present.
- Boss alien will be fast paced.
- Kill them all!
- We will rank according to the scores.

Scoring

- **Kill normal aliens = +50**
- **Kill **Boss** = +200**
- **Get killed = -1 life**
- **Negative scoring on total time taken (disclosed at spot)**

Measurements

- Arena size - 1.5m x 1m
- Lane width - 20cm
- LED Matrix Block size - 10cm x 10cm
- Bot size - 15cm x 15cm
- Line type - Black on White
- Alien LED colour - GREEN
- Bullets LED colour - YELLOW
- Spaceship fire LED colour - RED
- Spaceship body colour - BLUE
- Spaceship reload time - 2 sec
- Spaceship fire persistence - 1.5 sec
- Alien reload time - 2 sec
- Bullet speed - Constant & nominal

NOTE: Do not attach any harmful
weapon to your bot!

General Rules

- The participating teams can have a maximum of four members.
- Lego kits are not allowed.
- Bots larger the specified size may be disqualified.
- Any Damage to the Arena will lead to disqualification of the team.
- All decisions of Team Robodarshan are final.
- The participants will be provided with 220 Volts, 50 Hz standard AC supply. Participants will have to themselves arrange for any other power supply required for their robot.
- Robodarshan volunteers will assist participants in managing the wires.
- The participants can NOT touch the bot during runtime, if the bot gets stuck at the corners, volunteers will help in unsticking it, for which points will be deducted.

-Contact-

PUNYAJIY SAHA : 9968982501

RANIT CHATERJEE : 9088179430

SUPROTIK DEY : 8334826685

VIVEK SHARMA : 9804023431

SAYAN GANGULY : 9038731044

www.robodarshan.in

robodarshan@gmail.com

There's nothing a bot can't do!

@IEST SHIBPUR