GUIDELINES
TECH-SPRINT

1. ROBOTICS OLYMPIAD

About: The Robotics Olympiad will be a thrilling competition where students will showcase theirrobotic creations and compete in exciting challenges. They will be evaluated on the design, functionality, efficiency, and ability of robots to solve complex task. This competition aims to promote teamwork, creativity, and technical excellence.

Structure:

Line Following Robot- The robot requires traversing the track on its own by identifying the line and following the same.

Eligibility:
- The competition is open to students from 6th to 12th standard.
- Students can participate individually or in a team of up to four members.
- Each team can have at least one adult mentor or coach to guide themfor the preparation of the project.

Rules:
- Each team must design and build their robot to compete in the Olympiad.
- The robot can be constructed using LEGO Mind storms or any other suitable robotics kits.
- The use of sensors, motors, and other components is encouraged to enhance the robot's functionality.
- Maximum dimensions of the bot should be: 25(l) x 25(b) x 25(h) in cm.
- Maximum weight of the bot should be 5 Kg.
- Power supply should not exceed 12V, 7.2A. DC.
- No AC power supply is allowed.
- No external power supply or any other components will be provided at the time of the event.

Arena
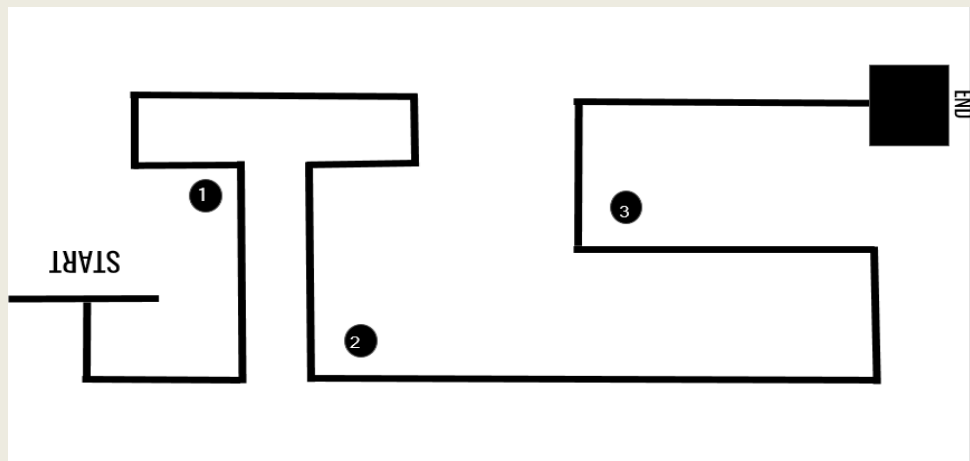
Game Play for Line Following Robot:

- Dimensional and weight limits for robots shall be strictly enforced. Robots must pass inspection prior to competing.
- Time is measured from the time the robot crosses the starting line until the time it crosses the finish line. A robot is deemed to have crossed the line when the forward most wheel, track, or leg of the robot contacts or crosses over the line.
- A maximum of 3 minutes is allowed for a robot to complete the course. A robot that cannot complete the course in the allotted time shall be disqualified.
- Once a robot has crossed the starting line , it must remain fully autonomous or it will be disqualified.
- Any robot that loses the line course must reacquire the line at the point where it was lost, or at any earlier (e.g. already traversed) point.
- Any robot that loses the line course and fails to reacquire it will be allowed a single reattempt. The robot must start the course again from the beginning, and if it loses the line course on its second attempt it will be disqualified.
- Track has white background and black strip over it which is 1" (1 inch) wide.

Judging Criteria:

- The bot that crosses the finish line in minimum time crosses will be declared as Winner.
- The maximum time limit to traverse the track is 3 minutes. If the bot is unable to finish the track, then the number of checkpoints covered during the 3 minutes will be taken into account.
- If the bot loses the line of course, team member will be allowed to touch the bot and place the bot again at the point where it has lost the track.
- Each touch of the bot has a penalty of 5 sec. Maximum 3 touches are allowed.
- All rulings by officials are final.
- The team with Minimum time will be declared as winner.

Coordinator Contact Info:
Sunil Chennamsetty   - +91-7013215920
Naveen   - +91- 9392770574
Mr. Gaurav Preet Singh - +91-7307876377

2. RC-XTREME

About: The challenge is to build your own robot either wireless or wired (within the specified dimensions) in order to achieve the maximum speed to beat other robots on the given track and reach the finishing line in minimum time.

Structure:

Round-1: The whole event will be single tracked. You must clear all the check points and obstacles to reach the finish line in quickest. The time will be calculated for all the participants and the fastest will proceed to the next round.

Round-2: The qualified teams from round 1 will participate in round 2 and this is a surprise arena which will be revealed at the time of the event.

Eligibility:
- The competition is open to students from 6th to 12th standard.
- Students can participate individually or in teams of upto four members.
- Each team can have at least one adult mentor or coach to guide themfor the preparation of the project.

Rules:
- Each team must design and build their robot to compete in the RC Xtreme.
- The robot can be constructed using LEGO Mind storms or any other suitable robotics kits.
- The use of sensors, motors, and other components is encouraged to enhance the robot's functionality.
- Maximum dimensions of the bot: 25(l) x 25(b) x 25(h) in cm.
- Maximum weight of the bot should be 5 Kg.
- If the bot is wireless (remote controlled), then a dual frequency type of control system is mandatory for participation. Frequency of the module used, should not exceed 2.4GHz.
- If wireless control systems are being used, then at the output only digital values should be sent.
- If the bot is wired, then the length of the wire must be minimum 3 meters and Maximum of 5 meters.
- Power supply should not exceed 12V, 7.2A DC.
- The potential difference between any two points should not exceed a limit of 12V and the robot should be powered only using batteries. (A tolerance of 5% is allowed).
- No external power supply or any other components will be provided at the time of the event.
- On the day of the event, participants must bring their completely functional and assembled robot to the venue.

Game Play for RC Extreme:
- Dimensional and weight limits for robots shall be strictly enforced. Robots must have passed inspection prior to competing.
- Only 2 members of a team are allowed to stay around the arena (one for controlling and onefor assisting) and a team is allowed to play with one robot only.

- Time is measured from the time the robot crosses the starting line until the time it crosses the finish line.
- A robot is deemed to have crossed the line when the forward most wheel, track, or leg of the robot contacts or crosses over the line.
- If the bot loses the line of course, he/ she will be allowed to touch the bot and place the bot at point where it has lost its track.
- Each touch of the bot has a penalty of 5 sec. Maximum 5 touches are allowed.
- Each bot must complete the lap only once, and it will only have one chance to do so.
- If the robot suddenly stops in the arena due to any technical problem, you will be allowed tomodify it only twice for a round. The timer will not be stopped during this period.
- Power supply may be ON or OFF the board (i.e., one of the team members can hold the power supply). An external power supply will not be provided.
- Changing the battery or battery polarity is not allowed during the race.
- Whole arena run should be completed within 7 minutes.
- While Traversing the track, there are five Checkpoints, if somehow any bot fails to complete the arena in 7 minutes then the no. of checkpoints the bot has completed will be counted.
- The decision of the jury will be final and binding.

Arena:

TOP-SIDE VIEW OF ARENA
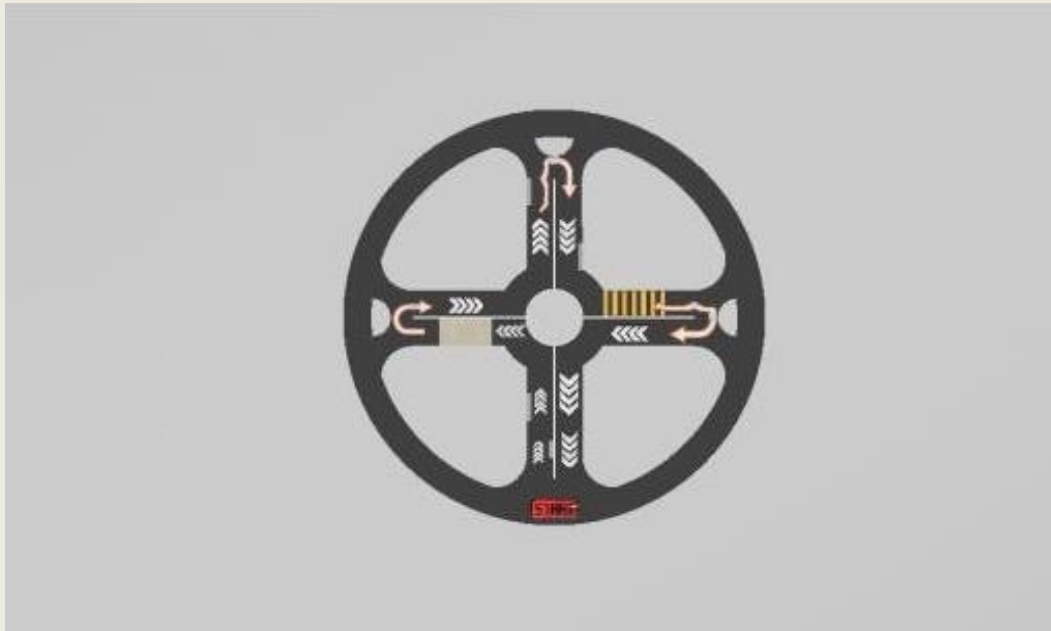
TOP VIEW OF ARENA

Note:
- The design is not drawn to scale. The top view of the arena is shown above.
- There might be some changes in physical implementation of the arena.
- Arena will be explained to the participant before the race commences.

Judging Criteria:
- The maximum time limit to traverse the track is 7 minutes. If the bot is unable to finish the track then the number of checkpoints covered during the 7 minutes will be taken into account.
- If slipping out from the arena or any touch of bot with the boundary of arena, then there willbe a penalty of +5 sec will be added in the total duration of time taken by the team to complete the arena.
- Total time taken by participants to reach the finish line with penalties will be counted.
- The winner of the final round will be the team that cracks the arena in the least time.
- All rulings by officials are final.

Coordinator Contact no.
Bhushan   - +91-9112256198
Ravindra Singh   - +91-8923664402
Ms. Umang Sahni   - +91-9888237676

3. WATER ROCKET CHALLENGE

About: Design and build a water rocket (within the specified dimensions) robust enough to withstand the pressure and it should achieve the maximum altitude above ground level when launched from the launch pad. The team with maximum air time will be declared as the winner.

The team must design their water rocket and launch pads with safety. Commercial water rocket kits and launch pads won't be allowed. Following specifications and rules address many well-known safety issues of water rockets, but are not expected to cover all design possibilities.

Structure:
Round 1: In this round, the maximum air time of the rocket will be counted within a specified radius.
Round 2: In this, the rocket is to be launched at 45 degree inclination from the ground and maximum length traversed will be counted.

Eligibility:

- The competition is open for students from 6th to 12th standard.
- Students can participate individually or in teams of up to four members.
- Each team should have at least one adult mentor or coach to guide them for the preparation of the project.

Rules:

- The team must design their water rocket and launch pads with safety.
- Commercial water rocket kits and launch pads won't be allowed.
- The team can also use parachute system for retaining maximum air time.
- The maximum allowed total height of the rocket is 76.0 cm.
- The rocket shall be made of low-density materials such as paper, plastic, duct tape, and glue.
- The water-fuel tank must be a plastic soda-bottle, a water bottle, with a maximum size of 2.5 liters. A soda bottle makes an ideal fuel tank for a water rocket; the bottle should be strong, light-weight, and designed to be pressurized.
- The rocket must not be made from any ready-made kit. if found so, the team will be disqualified.
- The Launch pad must be of sufficiently sturdy construction to ensure a repeatable, predictable launch direction. The launch pad may optionally include a blast shield that disperses the rocket exhaust, a high velocity column of water, into a harmless spray, to protect participants and spectators and to prevent mud splatter from the dirt surface of the infield.

Game Play:

Prior to the start of the Competition, launch pad and rockets should be made available in

designated area. Launches will be coordinated by the captain of the team. To begin, a team will raise a"pressurization in progress" flag and will fuel and pressurize their rocket, allowing a Launch Inspector to verify launch pressure if requested. When a team is ready to launch their rocket, they will raise a "Ready to launch" flag and, if required, team captain will notify the referee in person.

- Maximum time allotted (Game time) for a team to setup and launch the rocket is 5 minutes, failing to which will result in the disqualification of the team.
- Each team will get three chances to launch the rocket and achieve the maximum Air Time for Round 1.
- Referee will record the Air time of the rocket for each attempt, maximum Air time will bechosen from all the attempts and will be declared as the official Air time of the rocket.
- For Round 2, each team will get only one chance to launch the rocket at an inclination of 45 degree and traverse the maximum distance.
- The Field area of the water rocket tournament would be 100 meters X 100 meters (approx.).A fixed spot for the launching pad will be marked on the competition field. The penalty area will be marked by white lines. Rocket is considered to have made a penalty if it falls outside the defined area. Each penalty will cost 5 sec deduction from the total time.

Judging Criteria:

- Rocket with the maximum Air time and distance covered at 45 degrees will be declared as the winner.
- Referee's decision in regard to the outcome of a challenge will be final and binding upon allthe Competitors. Referee's decision is not subject to challenge or appeal.
- Out of 3 chances, maximum value will be taken into account.

Coordinator Contact no.
Anshul Garg   **- +91-7666081464**
Nithesh   **- +91-9938722063**
Mr. Gaurav Preet Singh - +91-9877787115

4. <u>TECH-QUIZ:</u>

About: Challenge your tech knowledge in this exciting quiz competition. Test your understanding of programming concepts, emerging technologies, and notable tech pioneers. Compete individually or in teams to prove your prowess and claim the title of the ultimate tech quiz champion. The questions will be mostly related to STEM.

Structure:
Screening Round: Objective Written
Round 1: Lap Round
Final Round: Rapid Fire

Eligibility:
- The competition is open to students from 6th to 8th standard-Junior Category and 9th to 12th standard-Senior Category.
- Students can participate individually or in teams of up to four members.
- Each team can have at least one adult mentor or coach to guide them for the preparation of the project.

Rules:
- Each team participating in the quiz event can have a maximum of two participants.
- The quiz will be based on STEM related questions. The topic will be announced at the beginning of the event.
- The quiz will consist of three rounds: Screening Round, Lap Round, and Rapid-Fire Round.
- After each round, the scores will be tallied, and the team with the lowest score will be eliminated from the competition.

Game Play:
Screening Round (Pen and Paper Objective Round)
- Each team would be given a set of question papers containing 15 objective type questions.
- Time limit - 15 minutes
- Only Qualified Teams would be selected for STAGE ROUNDS.
- In case of tie between 2 or more teams, further 3 questions would be asked for final selection.

Stage Rounds
    First Round (Lap Round)
- Each team would be asked 5 questions. (Objective question)
- 10 marks for correct answer, and no negative marking for wrong answer.
- If a team cannot answer the question, then the question would be forwarded to the next team (NO TIME).
- Only 6 teams would be selected for the 2nd Round.
- Answering time is only 30 seconds.

Final Round (Rapid Fire)

- Each team will get 5 questions to answer within the time limit of 50 seconds.
- 10 marks for the correct answer and 5 marks will be deducted for the wrong or no answer.
- Each question will be shown for 10 seconds.
- At the end,2 teams will be selected--Winner and Runner Up.

Judging Criteria:

- After each round, the scores will be tallied, and the team with the lowest score will be eliminated from the competition. This elimination process will continue until there is only one team left.
- The decision of the quiz master will be final and binding. The marks scored by the teams ineach round will be treated as final, and no requests for revaluation will be entertained.

Coordinator Contact no.

Kirpa Lonkar   - +91-7791007991
Ananthu krishna   - +91-9072253535
Ms. Mamta Bhatia   - +91-8146105017

5. <u>REGARD BEFORE YOU DISCARD:</u> Best Out Of Waste Challenge

About: Handling and proper disposing of the household waste without affecting nature is becoming a challenge these days. There is a lot of household waste which can be converted into useful things.With the growing increase in wastes in our society from household to industrial waste, we now require a very innovative approach to get rid of them. Recycling and Reusing the valuable waste material can result in the development of fantastic and usable products.

Structure:

It is a single round event where the team with best utilization of waste will be declared as winner. The student will pitch their creation in front of the panel.

Note: The scrap items will be (wood, tyres, rims, chassis, plumbing material, engines, metal, electronics, electrical, tin, furniture tetra packs, bottles, newspapers, old utensils, jute materialor any second hand items that otherwise would be thrown away etc.)

Eligibility:
* The competition is open to students from 6th to 12th standard.
* Students can participate individually or in teams of up to four members.
* Each team can have at least one adult mentor or coach to guide them for the preparation of the project.

Rules:
* Participants will be given 1 hour and 30 minutes to show their creativity and 2 minutes to talk about the same.
* The required waste material and stationery like scissors, thread, etc. will be provided by the organizer.

Judging Criteria:
* Participants will be judged on Creativity, Utilization of Resources, Artistic composition & design, Eco-friendly rating, Utility of the Product and Overall presentation.
* The decision of the judges will be final and binding.

Coordinator Contact no.
Muntaha Hassan - +91-9796005100
Bhavya Chaudhury - +91-7814352014
Ms. Umang Sahni - +91-9888237676

6. IDEATHON

About: The scale and ambition of the Sustainable Development Goals necessitate development innovation. New methods are needed to attain the Goals by 2030. Development necessitates puttinginnovation to the forefront of development projects. Participants must develop creative ideas and solutions that have the potential to improve society and add value to them.

Structure:

PPT Presentation of Project/Idea (10 mins max)

Eligibility:
- The competition is open to students from 6th to 12th standard.
- Students can participate individually or in teams of up to four members.
- Each team can have at least one adult mentor or coach to guide themfor the preparation of the project.

Rules:
- Each team requires to present their Idea in the PPT Format.
- Each team will have 10 minutes for the presentation.
- The presentation will be followed by 3-5 minutes for Q&A Round.
- Each team needs to select a sector for its Idea from the below-enlisted theme.
- The solution should be self-identified and technology-oriented. In case of any plagiarism observed, the team will be disqualified.

Themes for participation:
- Agriculture and Rural development
- No Poverty
- Zero Hunger
- Good Health and Well-being
- Quality Education
- Gender Equality
- Clean Water and Sanitation
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation and Infrastructure
- Reduced Inequality
- Sustainable Cities and Communities
- Responsible Consumption and Production
- Climate Action
- Life Below Water
- Life on Land
- Peace and Justice Strong Institutions
- Partnerships to achieve the Goal
- Clean and Portable Water
- Consumer Goods and Retail

- Defense and Security
- Fashion and Textile
- Finance and Life Sciences
- Food Processing/Nutrition/Biotech
- Infrastructure
- ICT, Cyber-physical systems, Blockchain, Cognitive computing, Cloud computing, AI& ML.
- IoT based Technology
- Manufacturing
- Mining, Metals, Materials
- Other Emerging areas of Innovation For Startups
- Renewable and Affordable Energy
- Robotics and Drones
- Smart Cities
- Smart Textiles
- Smart Vehicles/ Electric vehicle/ Electric vehicle motor and battery technology.
- Software - Mobile App Development
- Software - Web App Development
- Sports & Fitness.
- Travel &Tourism.
- Waste Management/Waste to Wealth Creation

Team formation and Participation Rules:
- Each team should consist of up to 1 member and a maximum of 4 student members.
- The idea to the problem should be related to selected themes only.
- The solution should be self-identified, and technology oriented. In case of any plagiarism observed, the team will be disqualified.
- Teams must present their solution in the form of a presentation.

Guidelines for PPT
- Your PPT should preferably contain the following slides:
- Cover Slide
- Objective of the Idea
- Problem Statement
- Description of the Idea
- Technology Stack
- Feasibility
- Innovation (how your product is different from the crowd)

General Guidelines:

PPT Presentation of Project/Idea (10 mins max)

- Each team will have 10 minutes for the presentation of the idea.
- The presentation will be followed by 3-5 minutes for Q&A Round.

Judging Criteria:

- Evaluation criteria will include factors like Progress of the Idea, Feasibility of Prototype,
- Novelty, Overall Impact, Technicality.
- The decision of Judges will be final and will not be subjected to any change.

Contact Info:
B. Vamsi Reddy   - +91-9553968699
Manasa   - +91-7249246877
Ms. Mamta Bhatia   -+91-8146105017

7. SCIENCE-FAIR

About: Science is inexplicably linked with our lives and helps us to understand the world around us better. This event is curated to ignite and develop the scientific attitude amongst learners. The activity aims at providing a platform to students to demonstrate the construction of knowledge byconnecting new ideas to existing concept.

Objective:
To demonstrate Prototype/Project related to STEM (Science, Technology, Engineering and Mathematics)

Categories:
Class 6 to Class 8: Junior Category
Class 9 to Class 12: Senior Category

Themes: Technology and Toys
- Agriculture and Rural development.
- Advancement in information and communication technology
- Eco-Friendly Materials
- Health and Cleanliness
- Transport and Innovation
- Environmental Concerns
- Historical Development with Current Innovation
- Mathematics for Us
- Clean Water and Sanitation
- Clean and Portable Water
- ICT, cyber-physical systems, Blockchain, Cognitive computing, Cloud computing, AI & ML.
- IoT based Technology
- Renewable and Affordable Energy
- Robotics and Drones
- Smart Cities
- Software - Mobile App Development
- Software - Web App Development
- Waste Management/Waste to Wealth Creation

Structure:

- **Round 1:** Student will provide abstract of their Project along with their video link of theproject demonstration before 6th October.
- **Round 2:** Exhibit the project with relevant poster (in the allocated venue) on the day of event.

Eligibility:
- The competition is open to students from 6th to 12th standard.

- Students can participate individually or in teams of up to four members.
- Each team must have one mentor.

Rules:

- The students can participate in any of the two categories, Junior or Senior Category.
- For Round 1, the students are required to submit the details of the Project and demonstration video of the project via link provided by the organizer to the registered students.
- The name of the students and the mentor teacher name once registered cannot be changed.
- For Round 2, students are required to showcase the physical prototype of the project alongwith poster of the project.
- The size of the Poster must be 1 meter x 1 meter. A proper sample of poster will be provided to the students eligible Round 2.
- The students will have to present their project in front of Jury members (time limit of 7 minutes).
- The judging will be done at the project display area only.

Judging Criteria:

- Creativity
- Utilization of Resources
- Design & Eco-friendly rating
- Utility of the Product
- Scientific Thought - Engineering Goals
- Does the project carry out its purpose to completion within the scope of the original aims?
- Presentation and Clarity
- Teamwork
- The decision of the judges will be final and binding.

Contact Info:
B.Sharish Chandra -+91-9666030506
Bhanu Mahesh -+91-7337053905
Ms. Neelam Sharma - +91-9877787115

8. BRIDGE BUILDING

About: The bridge building competition is a competition designed to test participants abilities tobuild a bridge using popsicles and hot glue. The goal is to build a bridge that isstrong and visually appealing.

Structure:

It is a single round event where the team with best bridge design which can withstand maximum weight will be declared as Winner.

Eligibility:
- The competition is open to students from 6th to 12th standard.
- Students can participate individually or in teams of up to four members.
- Each team has at least one adult mentor or coach to guide them forthe preparation of the project.

Rules:
- Participants have to complete their design model within assigned period of time.
- Participants will have a specified period for preparing their bridge-building strategies beforethe competition begins. Sketching bridge designs and planning construction methods is encouraged.
- Participants will be provided with all the supplies needed for the purpose of building the bridge, such as, Popsicle sticks/Ice-cream sticks, glue, utility knife, pair of bricks, tape, etc.
- Contestants will be judged on the basis of how much weight their model can withstand
- Participants are not allowed to bring any external material to improve the strength of the model.
- Any participant seen using external material , will be disqualified.
- For making a joint, sandwiching of sticks more than 3 is not allowed. For making a beam, only 2 sticks are allowed.
- The length of the bridge should be between 13 inches (33.02 cm) to 15 inches (38.1 cm).
- Participants must complete their bridge construction within the allotted time. Any team failing to meet this requirement will be disqualified.

Judging criteria:

The judges will evaluate the bridges based on the following criteria:

- **STRENGTH:** The Bridge should effectively support a predetermined weight without collapsing.
- **TIME DURATION:** The bridge should be able to sustain the weight for the allotted time.
- **DESIGN:** The Bridge should exhibit visual appeal and aesthetic qualities.

- Each team/participants will be marked on above parameters separately. The team with the highest score will be declared the winner.

Contact Info:
Vinith - +91-7382742535
Divyanshi - +91- 7032063475
Mr. Gaurav Preet Singh - +91-7307876377

9.SPEED X- A GAMING COMPETITION

About: The Free Fire Championship - Bermuda Showdown is a high-octane e-sports competition where teams of two or four players face off on the Bermuda map. This championship is designed to bringtogether players of similar ranks, fostering intense and thrilling gaming experiences.

Structure:
- **Team Formation:** Participants can compete in duos or squads of four on the Bermuda map.
- **Rank-Based Teams:** Teams are created based on players' ranks, ensuring balanced competition.Players with similar ranks are grouped, and those without matching teammates are assigned to teams with similar-ranking players.
- **Rank-Based Enemies:** Teams face off against other teams with similar rankings, ensuring competitive and challenging matches.
- **Clash Squads:** The championship finals introduce the Clash Squads mode, requiring the highestlevel of skill and teamwork to emerge as champions.

Eligibility:
- The competition is open to all who have an interest in Free Fire.
- Students from 6th to 12th standard are eligible to participate.
- Students can join in duos or form teams of up to four members.

Rules:
- The tournament organizers will oversee the event and ensure rule adherence.
- Fair play is paramount. Hacking or using cheat codes results in immediate disqualification.
- No external power supply or additional components are provided during the event.

Game play:
- Teams compete on the Bermuda map, with duos and squads battling it out.
- Matches have varying time limits, typically lasting up to 5 minutes.
- Teams earn points for actions such as eliminating opponents and achieving objectives.
- The first team to score a set number of points or complete objectives wins the match.
- In case of a tie, sudden-death rounds or other tiebreakers may be employed.
- The championship follows a tournament-style format, with teams advancing based on their performance.

Judging Criteria:
- Participants will be judged according to the gameplay in their game as the top four players will be taken from each game played and qualify for the next round.
- Judging will be done from the individual score even from the winner's and loser team.

Contact Info:
Vinith   -+91-7382742535
Ashish   -+91-7032063475
Ms. Neelam Sharma   - +91-9877787115

10. <u>DESIGN-X:</u> A CURATIVE FASHION SHOW TO PROMOTE SUSTAINABILITY

About: Welcome to "Design X," where the young minds of today are the sustainability champions oftomorrow! This extraordinary fashion show is not just about style, it's a celebration of creativity, innovation, and our commitment to a greener, more sustainable future. Join us as we embark on a journey of eco-conscious fashion, where the runway becomes a canvas for our dreams and the world's future.

Structure:
Round 1: Each team will showcase their outfit/designs within 7 minutes of time.
Round 2: Highest scorer team will be answering some Q & A on the outfit and what they think about sustainability

Eligibility:
- The competition is open to students from 6th to 12th standard.
- Students can participate individually or in teams of up to four members.
- Each team should have at least one adult mentor or coach to guide them forthe preparation of the project.

Rules:
- It is a team event. A team can have maximum 4 members.
- Time limit for each team would be 7 minutes (Including setup and the performance both).
- Negative marking will be done if participants exceed the given time limit.
- Tracks to be submitted (in advance) in pen drives for the ramp walk.
- Vulgarity is strongly prohibited. Any form of obscenity will lead to debarring of the team from the contest.
- Tube tops, single strip tops and backless will not be allowed. Dress should be of knee length.
- Each group should have one tag line representing their group and the theme (Be Bold for Change).
- The dress will be designed on the spot
- The duration of the designing will be 2 hours.
- Eco friendly material should be used for making the costumes.
- Purchased, professionally made, or rented costumes are prohibited.
- No material will be provided by host team.

Judging Criteria
- Teams will be judged on costumes, theme, walking stance, originality, creativity & overall impact
- Decision of the judges will be final and binding.
- The cumulative score from round 1 and 2 will be considered to declare the Winner.

Contact Info:
Aditi   -+91-6280899218
Siddharth   - +91-7392057500
Ms. Umang Sahni   - +91-9888237676