PETROSAINS RBTX CHALLENGE 2022

Innovation Category – Advance

Rules and Regulations

In this category, students are required to brainstorm for innovative ideas and solutions based on digital technology, develop a prototype and then demonstrate and present their solutions.

1. OBJECTIVE

- To equip students to use Descriptive, Predictive & Prescriptive Analytics skills in reshaping future organizational processes.
- To empower our future workforce in creating smart solutions to meet user satisfaction.

2. TEAM COMPOSITION & INNOVATION CATEGORIES

Each team must comprise of a maximum of **four (4) participants** and **one (1) mentor** who can be either a teacher or guardian.

    i.   Advance Category

       - Students aged 13 to 17 years old.

3. INNOVATION CATEGORY MECHANISM

The competition is divided into **Seven (7) phases** as per the following:

i.   **Registration (Phase 1)**

Participants are required to register online and send in their complete submission between 14 April – 30 June 2022. Upon registration, participants are required to join the Virtual Basecamp. However, attendance to the Virtual Basecamp will not guarantee placement in the final competition.

ii.   **Virtual Basecamp (Phase 2)**

This Basecamp is a learning enrichment platform for participants and shall provide an overall idea of the Petrosains RBTX Challenge Innovation Advance competition structure, the designated challenge, as well as a learning module on Introduction to Internet of Things (IoT) and its tools.

Date and mechanism will only be announced to the participants.

iii.   **Proposal and Video Submission (Phase 3)**

Upon completion of the Virtual Basecamp, participants will be given two (2) weeks to complete the conceptual paper and pitching video.

Participants are to submit the following: -

> a. Pitching Video: The video must be a maximum of two-minutes in duration and in MP4 format. It is also compulsory for participants to appear in the video.
> b. Conceptual Paper: Please refer to the attachment below.
> c. Links for submission: https://forms.office.com/r/0hufmzn2nf

iv.   **Finalists Filtering Phase (Phase 4)**

The Petrosains RBTX Challenge judging committee will review the submission of complete conceptual papers and pitching videos. This shall be finalised within two (2) weeks of the closing submission date. Judges' review will be based strictly on the rubric shared during the Virtual Basecamp.

The decision of the competition judges in determining the winner for this competition shall be final and no appeals against the decision will be entertained.

v. **Bootcamp for Finalists (Phase 5)**

Finalists will be required to attend a Bootcamp which will be split into sections of learning experience enrichment. This is inclusive of technical mentoring by both subject matter experts from academia and PETRONAS. Participants are expected to develop a prototype for the bootcamp and there will be mock presentation sessions that will be guided by the technical advisors.

The Bootcamp will be held two (2) weeks before Grand Finals.

vi. **Mentoring (Phase 6)**

The Mentoring phase will include a coaching session to equip finalists with relevant communication skills and familiarity towards stakeholder management. This session will be in collaboration with champion PETRONAS experts.

Each group will be given a 2-hour session via the Microsoft booking system that will be updated after the bootcamp.

vii. **Grand Finals (Phase 7)**

Teams are required to present their project's working prototype at the Grand Finals.

Judges consisting of experts from academia and industry will evaluate the teams' presentation according to the rubric shared during the Virtual Basecamp.

The presentation schedule and mechanism shall be shared to the finalists during the Bootcamp.

4. JUDGING CRITERIA

The judgic rubrics emphasises on Smart Solution & Functionality, Impact & Sustainability and Communication. Detailed rubrics will be shared during the Basecamp.

Criteria	Details
Problem Statement	Clear problem statement and well mapped under categories in the theme
Proposed Solution	The proposed solution is highly feasible to solve problem, and technology requirements is extensively included to develop the proposed solution
Commercial Value	The prototype/idea has very strong potential to be adopted, enhanced, and leveraged by PETRONAS or other relevant organization. Commercially viable and has market potential. And the solution is very cost effective compared to other similar solutions even after it is being scaled up.
Video Quality	Audio, video is very clear. Very Creative storyline, very clear wording, and figure/images

5. THEME

Participants are required to tailor their projects to the following United Nations Sustainable Development Goals in creating a comprehensive innovative project that can contribute to a better and more sustainable future for all.

Advance Category: SDG 13 Climate Action

Link to United Nation Sustainable Development Goals:- Measuring progress towards the Sustainable Development Goals - SDG Tracker (sdg-tracker.org)

6. **PROJECT REQUIREMENT**

The proposed solutions must solve the above-mentioned themes.

Advance Category: The project must also include an 'Internet of Thing' (IoT) technology (connectivity – device to device communication using any wireless interface).
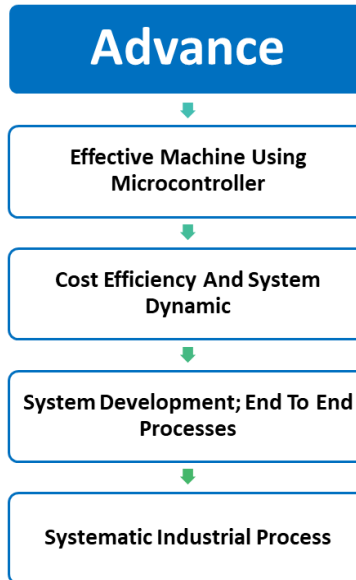
7. **CERTIFICATIONS**

Participants will be given certificates upon completion of the Proposal and Video Submission (Phase 3), Finalists Filtering Phase (Phase 4), and Grand Finals (Phase 7).

Teachers and mentors shall also receive same certifications as acknowledgement of participation.

RBTX 2022 INNOVATION CATEGORY CONCEPTUAL PAPER

1. **CATEGORY: JUNIOR / ADVANCE**

2. **INSTITUTION NAME & ADDRESS:**

3. **TEAM NAME:**

4. **PROJECT TITLE:**

5. **VIDEO LINK:**

6. **MENTOR DETAILS**

   I.   **Name:**

   II. **Phone Number:**

   III. **Email:**

No	Participant's Name	NRIC Number	Phone Number	Email Address
1				
2.				
3				

1. Problem Statement

2. How will this project benefit the community?

3. Product specification (with sketches)

4. Flowchart

ATTACHMENT 2 : COMPLETE SUBMISSION SAMPLE - FOR REFERENCE ONLY

CATEGORY: JUNIOR / <u>ADVANCE</u>	
INSTITUTION NAME & ADDRESS: Sekolah St. Michael	
TEAM NAME: Michaellian	
PROJECT TITLE: PENGESAN PH	
MENTOR DETAILS Name : Phone Number : Email :	

NO	PARTICIPANT'S NAME	NRIC NUMBER	PHONE NUMBER	EMAIL ADDRESS
1.				
2.				
3.				

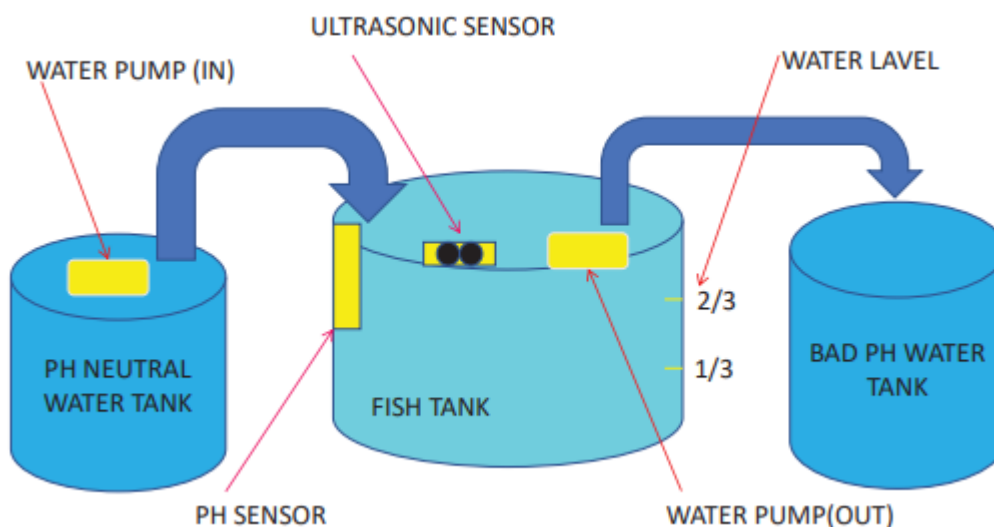**ATTACHMENT 2: COMPLETE SUBMISSION SAMPLE - FOR REFERENCE ONLY**

1.Problem Statement

Technological advancements in the field of adult electronics are growing rapidly and are influential in the production of sophisticated tools, which are tools that work automatically and have high precision to make human work easier, economical and efficient. Automated systems in all sectors are unavoidable, so that initially manual use turns to automatic control. There is no exception to the process of raising fish that uses tools for convenience in their preservation. In the process of raising fish, the fish should be kept in mind for the pH value of the water in the pond. During this time, the process of controlling and measuring the water pH of the tilapia fishpond was carried out manually. For example, measuring the water pH using a digital pH meter and then when the pH value is outside the tolerance limit, which is between 5.5-7.5 then it will be converted to fresh water until the desired water pH. However, the modern digital pH meter has its drawbacks, which are slow changes, which are an important issue in ensuring that the water pH is always suitable for tilapia fish farming.

2. How will this project benefit the community?

It is easy to detect pH value. So, owner of fish farmer can monitor the condition of fishpond. It used application Think Speak, software that connect to product through Wi-Fi module. This product also good because it can save the time for fish farmer to check pH value of the water. This product function Automatically change the water went the pH is not suitable. It will pump out water until level we decide and pump in clear water until 2/3 of pond. This product also benefit user because it has automatic fish feeder with timer. So, the owner does not worry if go outstation because it operates automatically

3. Product specification (with sketches)

Open

4. Flowchart