

EMPOWER 2019

Student Challenge (1 week Hackathon)

Theme: *accessible classrooms through assistive technology*

Preamble: Organizers of Empower 2019 in collaboration with Enable Makethon and IUA (Inclusive University Alliance) are organizing a week long offline Hackathon for students and student teams of Schools and Colleges.

Theme: Theme of this challenge is “accessible classrooms through assistive technology”. See Annexure for more details about this theme and suggested problems.

Important Dates: The challenge is being released on October 6, 2019 and deadline for submissions is October 13 (Sunday) 11.59 PM.

Submissions: The solution to above challenge has to be submitted as 3 minutes video covering problem identified and solution to address the problem. Solution proposed can such as products, services, systems, mobile applications etc. The teams are advised to undertake some research to understand the problem, users, user environments, other stakeholders before exploring solutions. Prototyping and solution validation with users and stakeholders is strongly encouraged. Video should end with details of team members, contact email and phone number. Use the following URL to provide link to your videos.

<https://www.surveymonkey.com/r/GHTDV8K>

There is no specific format for video. See a sample video given below.

<https://www.youtube.com/watch?v=0MhgIGTiO8>

Selection: A jury constituted for this purpose will identify potential entries on as a part of stage I short-listing process. Shortlisted entries (videos) will announced and will be played on October 16 during design challenge session of Empower 2019 conference. As a part of this session, the jury will also select 3 best entries for first, second and third prizes. This session will be held from 11.15 AM to 12.45 PM in Room 153 (Megh) at IIT Delhi (Sonipat Campus). The jury may have interaction or telecon with team members if need arises. The winners will be announced on October 17. It is not mandatory for teams to be physically present during the session.

Fee: There is no participation or registration fee for participating in this event.

Annexure

Here are some representative problems pertaining to theme. However, teams are free to choose any other problem/need within the scope of theme.

- A light weight and portable ramp or alternate solutions for students and faculty who are wheelchair users to reach seats and podium.
- How to make science lab experiments and equipments accessible to students?
- Accessibility of board and projector screen for low vision students.
- How to make classroom lectures accessible to student with hearing impairment?
- A system which can assess and describe contents of a digital image to students with visual impairment.
- How to provide secure digital exam taking option for students?
- How to provide secure digital Grading options to give detailed feedback to the student?
- Design a solution which will facilitate hearing-impaired students to communicate and participate in group discussions.
- How to make large amount of reading material with illustrations and tables available to students with visual impairment?

Some challenges particularly for schools

- For students who are visually challenged missing social cues can impact their participation in group discussions or any kind of group activity. Any solution to address the gestures, facial expressions, etc.
- When a teacher is drawing something on the board, the student with a visual impairment has to have the tactile version of the same before hand. Many a times the student gets the tactile version of diagrams later and this delay hampers there learning. How to provide real time information with the rest of the class that would help immensely. This is particularly important in Mathematics. It's not easy to prepare tactile diagrams ahead of time as quite often the teacher changes lesson plan to suit the needs of the students.
- When a child has low vision and mild CP there are issues with note taking. The student has enough vision to read print font size 14. Writing is an issue because of the CP. The student can take notes but is slow and when he/she tries to increase the speed he/she cannot read what has been written. His/her typing speed, because of the CP, is too slow to keep up with the class. What would be the solution to take his/her own notes in a manner to keep pace with other students?
- How to design effective toys for children to facilitate communication for children with communication disabilities in India.

ANY OTHER PROBLEM WHICH IS RELEVANT TO THEME BUT NOT MENTIONED ABOVE