

Arctic Challenge

Arctic challenge is a kind of 48-hour nonstop hackathon that focus on developing and integrating new sustainable ideas provided by some reputed companies and implemented by fresh young talents. The hackathon is all about finding proper solutions for different projects provided by the stakeholder companies and developing small scale prototype application to address those challenges. The main technical areas for this competition includes Internet of Things (IOT), Open data, LoRa and Augmented Reality (AR). The initiative was jointly conceived by Skelleftea Digital Alliance and the SenseSmartRegion project. It is supported/sponsored by Skellefteå Science City, Techfugees, DF Skellefteå and the Smart Tillväxt project. Skellefteå municipality and the companies Crepido, Explizit, Infovista, Nuiteq, Tieto, Sven-Erik Wiklund Affärsutveckling, Visma, and Wolfshark have joined to this cause with their new futuristic visions. This year sponsoring organizations presented a list of challenges from where the participating teams have chosen their projects. It took place on 24th to 26th November in the Great Northern, Skelleftea. A jury board was there to review and evaluate the award-winning Apps on November 26, 2017. The jury evaluated each contribution regarding some criteria such as visualization, usefulness, innovation and business contribution. Therefore, to win this competition the application prototype must have some aesthetic and creative visualization as well as innovation and business potential to meet the requirements for the intended targeted group. Teams should be formed not more than 6 people and they need to bring their own laptop.

However, The SenseSmartRegion platform will be available and can help communicating with sensors, getting open data and producing AR. The organizers provided the environment to set up workstations for the team members. In addition, they provided breakfast, lunch and dinner for the contestants during the contest period. Teams that came from different cities got bus tickets and accommodation. The contest started with a brief introduction about the Arctic challenge and all the other projects from different companies. My team name was PERCCOM 3 and my team members were Farniba, Tawseef, Daniyal, Asif (PERCCOM) and Adyasha (Local master Student). We chose the project named “Sven-Erik Wiklund Affärs-utveckling” which was about smart briquetting, a monitoring and controlling system for biothermic process. The purpose is to enable unmanned operation of a smaller and simpler biothermic process in which monitoring and possibly adjustment of the process can be done via mobile phone and this APP. The application should visualize the monitoring capability of 5 temperature sensors and 15 alarm signals with 2 different priority levels (e.g. level sensors, fire detectors, motor protection, etc). For controlling purpose, the system needs to provide some control signals to switch on/off some/whole part of the system/subsystem as well as the users will be able to raise or lower the temperature by controlling a radiator and fan heater motor. Before getting our hands dirty with all sorts of programming and sensor deployment tasks, we had some meeting with our project owner to understand what was his expectation from this application as well as the background story of the whole idea. Then we distributed the tasks among ourselves, for instance Asif took responsibility for background analysis, I was working on codes and tawseef and Adyasha was trying to set up the sensors. For this project we used Arduino Yun, a wireless microcontroller device to push temperature and humidity data from sensors to our device. We made a responsive web service which can visualize the behavior and pattern of the sensor data and at reaching threshold it can generate an alarm as a notification and with some interactive button and slider, the user can even switch on/off some processes or raise/lower the temperature from remote places. The whole idea was to monitor the process of the smart briquetting system and if needed to control some process from remote places using the application. We had two presentations before getting the final result (one with jury and another with jury & audience). We got 2nd place for our application. The whole journey was quite amazing because we got to know about some different ideas as well as we shared our experience with professionals from different companies. I would like to convey my gratitude to prof. karl and the organizers for providing us this amazing platform to showcase our ability and learn new things.

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