Hack TUES

Promising Practice

Implemented by: TUES Alumni Association (AATUES)

Where: Bulgaria

Status: Launched in 2015

Summary: Hack TUES is the only hackathon event in Bulgaria, organized by students for students, where real-world problems are addressed.

Hack TUES

Overview

Established in 1988, the Electronic Systems Technology School (TUES) at the Technical University of Sofia has taken on special national importance. The school prepares the future leaders of the IT sector in Bulgaria and beyond and specializes in system programming and computer networks.

The TUES Alumni Association (AATUES) is a non-governmental organization (NGO) that aims to unite TUES alumni and current students, together with teachers and supporters of the school. It was established in 2014 and has over 1,000 members. The association has become the driving force behind several events and key initiatives for the TUES community.

Description

Organizing a student hackathon

Hack TUES is a three-day hackathon in Bulgaria that is organized by students for students. From fundraising, through to public relations campaigns and creating the event's website, everything is done by students under the guidance of AATUES professionals. The process of organizing the event is a long one. A dozen students from the 11th grade start working in September to organize the event that traditionally takes place in March. The event provides a unique opportunity for the organizing team of students to experience the real processes of logistics and planning. The students also experience the benefits and challenges of working in a team, as they contribute to the initial brainstorming sessions, find the necessary funds and participants, and finally organize the event.

Addressing major problems faced by society

The event is also very special for the participants. Since they know each other, they strive to succeed and make it to the finals. The theme of the hackathon changes every year and relates to the major problems faced by society. The last two editions focused on outer space and environmental problems respectively and the participants came up with innovative solutions to these problems. These included educational games, embedded systems to collect samples or clean rubbish, and machine learning (ML) solutions to help analyse the likelihood of a successful aeroplane landing.

Opportunities for TUES alumni

Another important aspect of the hackathon is the opportunity that it provides for alumni. As experts in the field, they can participate in two roles: as mentors or as part of the jury. Both roles give TUES alumni the opportunity to pass their knowledge and experience to the younger generation, as well as to experience the excitement of once again being part of the hackathon.

Objectives

The initiative aims to develop the students' teamwork, creativity, and problem-solving skills as they work under pressure while developing software products. The main target groups are the students at TUES together with the school's alumni.

Each year, the hackathon addresses a different initiative, always concerning an ongoing problem or an underdeveloped field. The association strives to promote disruptive technology that may help societies. The hackathon serves as an opportunity for students to enhance important soft skills that are highly requested by industry.

Hack TUES:

- Fosters innovative thinking and provides an opportunity to work on real-life problems;
- Enables students to acquire new skills and knowledge, while reinforcing material learned in classes; and
- Facilitates networking with other students and businesses.

Linking the students' learning process with industry and society

By empowering students to drive the entire process of organization and execution of the hackathon, the initiative is a valuable extension to the existing educational process. The gaps between real-world problems and theory on one hand and business and education on the other are addressed. As a result, the students will be more engaged with the learning process, industry and society.

The initiative increased the attractiveness of ICT education in vocational schools. It also improved the students' performance, as well as the demand for tertiary education in ICT. The ICT industry benefits from more motivated and better educated graduates that join the labour force.

Outcomes and impact

The first high-school hackathon was organized in 2015 with the participation of 84 students in 18 teams. The eighth edition of the hackathon, in March 2022, saw the participation of 224 students across 50 teams and sponsorship from 25 IT companies. In 2023, AATUES is expecting 300 students across 60 teams, 60 mentors, 67 members of the jury, 14 team members organizing the hackathon, over 15 volunteer lecturers, as well as 35 ICT companies supporting the hackathon. This brings over 480 people together in the three-day hackathon event organized by AATUES.

According to a survey for students at TUES, performed in December 2022, nearly 85% of respondents consider hackathons as an important part of the education process. Besides, more than 50% would volunteer for the leadership team responsible for the hackathons' organization.

The impacts of the hackathon are that it:

- Develops soft skills and enhances digital skills as part of the learning process;
- Attracts an increasing number of participants every year, and an increasing number of businesses that support the initiative; and
- Increases the students' interest in the learning process.

Challenges

Volunteer team of students

Preparing the volunteer team of students is one of the challenges faced by the association. To address this, the volunteer team is supported by the association's professional soft skills trainers and experienced mentors.

Funding for the hackathon

Another challenge is securing funding for the hackathon. Securing the appropriate funding is considered to be part of the students' learning process where students suggest ideas on how to raise funds. Luckily, the ICT sector in Bulgaria invests in this initiative, although some obstacles are already being faced because of the financial crisis.

Hack TUES

300 students

67 jury members

60 teams

14 team member organizers

15 volunteer lecturers

35 supporting ICT companies

60 mentors

Insights

The hackathon empowers young people to gain personal and professional skills. Students work for eight months to implement this large-scale initiative, which is a unique opportunity for them. There are also benefits for all stakeholders involved, including the school, AATUES, the organizing team, businesses, participants and of course for the alumni network.

Next steps

The association plans to take the Hack TUES initiative outside of Bulgaria to reach more schools, students and communities.

Learn more

Kirilka Angelova, CEO at AATUES, helped to compile this document.

For more information, please contact:
kangelova@elsys-bg.org

To learn more about AATUES, visit:
https://aztues.bg

Discover other practices

The **UNESCO-UNEVOC Innovative and Promising Practices database** presents successful projects tackling key themes in TVET, such as entrepreneurship, youth employment, the green transition, digitalization, private sector engagement and more.

Learn more on our website at:
http://www.unevoc.unesco.org/ promisingpractices

Questions or comments? Contact our team at:
unevoc-pp@unesco.org