

Blended Mobility Project, 12th Edition 2022: Application for Sports Performance Testing, an Interior Design Application and a Hospitality Management System

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Blended Mobility Project methodology is devoted to create and manage international multidisciplinary teams of students who will collaborate in order to develop a solution for an engineering problem. These teams are set up for a semester with the purpose of developing and presenting a prototype or a proof of concept for a given challenge.

Blended Mobility Project in the academic year 2021/22, completed its 12th edition which started in the academic year 2009/10. Altogether HIEs from 11 countries were participating including Portugal, Belgium, Germany, the UK, Greece, Italy, Kurdistan - Iraq, Slovenia, Nigeria, France and Lithuania. Information Technology companies provide real project proposals. With this professional involvement, students got a context which is international, multicultural, multidisciplinary and professional.

The preparation of the course starts at the beginning of the first semester in October. At this stage the teachers collect challenges from companies and select the most interesting with regards to its pedagogical potential. Initially

13 projects were selected. The selected challenges are presented to final-year-undergraduate or master students. Each project is implemented by a team of about 10 students which are mainly from Information Technology and Software Engineering disciplines but students from other fields of study, such as: Business Development, Management, Electronics, IT & Design participate. Applicants are selected based on a set of criteria defined by each partner university and the teams for each challenge are setup. In 2021/22 edition, more than 53 students were involved actively, as well as 14 teachers from the 11 participating HEIs. Allocating 7-9 students per team the most 7 popular projects among the students were chosen to be implemented. This process was concluded by the end of January and the first face-to-face meeting that runs at the beginning of the second semester, took place at Ghent, Belgium, 21-25 February, 2022. At this first face-to-face meeting, students get to know each other, the company offering the challenge and its details. The challenge is provided to the students by the company but no specifications are given concerning the solution to develop; that is the students task. Students have to interact and cooperate during the semester in order to agree on the necessary specifications and on how to integrate all the elements of the solution from a technical, marketing and business point of view. The first face-to-face meeting runs for five working days during which students design a first draft of the solution for the challenge at hand organize themselves to work as a team during the semester and assign responsibilities to each team member according to the number of ECTS credits they get for their work. At the end of the week the envisaged solution by each team is discussed with the company, the teachers and the students so all agree on a definite proposal. After this first meeting, students work at their home institution working at a distance through online groupware platforms. At the end of the project all modules are integrated and the fully operational system, a unique product, is presented by the students as a team. The second and final meeting took place in Porto, Portugal 20-24 June 2002, students get together face-to-face again to finalize their solution, their final presentation and to discuss the delivered product with the client company and the teachers. The team as a whole must guarantee that all parts integrate well to produce a unique solution for the problem and present the full solution to the project jury. The project jury was composed by a teacher from each partner institution and a representative from the client company.

In total there were 7 projects implemented in the academic year 2021/22 and 3 of them will be presented where HMU students participated. The first project was suggested by Hylight, a Belgian startup company. The challenge was the designing and development of a user friendly web-based application for physiotherapists, doctors, and coaches, which will help to quickly gather all the necessary information they need without losing time on testing or the

analysis video. Company's clients spend a lot of time on testing and gathering data. The analysis takes too much time and there are a lot of open-source options to assess these tests automatically. This holds them back, it's always an effort to test and screen; even though objective data are more and more important. This application will help them by automating some of the tests and offer a user-friendly web-based app, which is linked to their cloud platform. The team was separate into the groups of marketing, design, and development under Scrum framework. For the organization and management of the groups tools like Trello, Microsoft Teams, Dropbox, and GIT were used. The IT group divided the requirements in smaller tasks in order to work on them separately. For the development of the website the JavaScript framework "Vue" and Vue's tools "Vuex", Python, and HTML we used.

The second project was introduced by Epam Systems an American company that specializes in product development digital platform engineering, and digital product design and its branches are represented in more than 35 countries. The challenge was to create an interior design application, named "DecoratAR", to allow people worldwide to visualize furniture in their living spaces more easily. This application is intended to be used both for professional and private use. The aim of the team was to combine all the features from similar applications on the market into one application for easier and more practical use. For the development of the application Unity3D was used for the code (with C#) and Blender for the models. The team stayed in touch through various platforms and programs like Microsoft Teams, Whatsapp and Zoom. The presentations were made with Canva and the mockups with Figma.

The third project was addressed by Expect Me is a Belgian hospitality tech startup that focuses on the international hotel industry. They provide hotels with a unique software that will allow their guests to select and guarantee a specific room based on a clear floor plan and room overview, as convenient as selecting your seat on a plane. The challenge was to develop an integrated plan for an automated onboarding process to activate those hotels on Expect Me, named "Onboard Me". This project required building a dedicated onboarding platform, either custom-made or (partially) integrating open-source tools, considering a service approach, proper communication, marketing, and design to reflect Expect Me hospitality values. The team was divided into four departments: marketing, hospitality, design and development. The marketing department helped with the "Onboard Me" platform providing a mission, vision and values statements, a description of the platform and their benefits. The hospitality team was asked to create a data base with the over 600 hotels that the company provided and establish direct contact with some hotels located in Portugal that were on the data base. Moreover, the hospitality team helped with the making of the marketing action

plan. The design team focused on corporate identity, flow diagrams, wireframes and website design. The development team implemented the “Onboard Me” application by developing and integrating three portals: Admin Portal, Company Portal and Customer Portal.