BST-BCS-23A – Data Bases
Project Overview, SuSe25

Part I. Project Objective

The project is designed to provide students with hands-on experience in discovering and understanding real-world data structures. The objective is to create a relational database for the CyberMACS International Applied Cybersecurity Conference. Students will have the opportunity to explore practical data structures while designing a relational database. In addition, they will learn how to query for specific information needed to enhance decision-making processes.

Part II. Project Subject: "CyberMACS International Applied Cybersecurity Conference Management System"

CyberMACS is an *Erasmus MUNDUS* Joint Master's Degree (EMJM) programme in *Applied Cybersecurity* offered by a Consortium of three universities in Türkiye, Germany, and North Macedonia. The CyberMACS Consortium is organizing the *International Applied Cybersecurity Conference (IACyC 2025)* to be held in Ohrid, North Macedonia, in November. The event aims to bring together academics, graduate students, industry professionals, and representatives from public institutions to discuss applied challenges and solutions in cybersecurity. The conference is jointly coordinated by multiple universities and includes hybrid participation, both on-site and online.

To effectively manage the event, the organizing committee is seeking a database-driven system that will serve as the backbone for tracking registrations, paper submissions, session planning, speaker arrangements, sponsorships, and communications with stakeholders.

Business Operations, Rules, and Policies:

Participants must register through a form where they provide personal details, institutional affiliation, and select whether they will attend on-site or online. Each participant can choose up to three topic areas of interest (e.g., Digital Forensics, IoT Security, Cryptography). Only registered participants can submit papers or attend private workshops. There are four main participant types: academic, student, industry professional, and public official.

Registered users can submit papers either individually or with co-authors. Each paper has a title, abstract, and must be categorized under a main topic area. Papers are reviewed by at least two members of the scientific committee. Reviewers provide a score and brief justification. The final decision (accept or reject) is made based on average scores and internal discussion. Accepted papers are assigned to sessions by the organizing team and are scheduled for oral presentation or poster display. Each session has a fixed date, time slot, and location (room or virtual link), and is chaired by a designated person.

Invited speakers (e.g., keynote and panel speakers) are not required to submit papers but must be registered. Each speaker provides a bio, talk title, abstract, and preferred time slot. Talks are assigned to sessions based on availability and theme alignment. The system should allow the organizing team to identify scheduling conflicts or unassigned slots.

Companies can sponsor the event at different levels (e.g., Platinum, Gold, Silver), each with different benefits (e.g., booth access, logo display, speaking slot). A company representative fills out a sponsorship form, including company info, sponsorship tier, and financial commitment. The committee wants to generate reports about total sponsorship income and sector-based sponsor statistics (e.g., cybersecurity vendors, consulting firms, etc.).

The system should support sending notifications to users, for example, submission deadline reminders, acceptance results, and session schedule announcements. Notification history should be traceable for auditing purposes.

Part III. Project Scope

The project encompasses the following key aspects:
1.1 Database Initial Study (Requirements Collection) & Analysis: Teams will thoroughly study the project subject and identify the information requirements of the system. This includes determining what queries and reports should be generated to aid managers or decision-makers in using the platform. Teams will also gather and specify the necessary data requirements through various data-gathering techniques. This phase will expand and refine the use case scenario mentioned above.
1.2 Conceptual Design: Based on the requirements collected and analysed in the previous step, teams will construct an Entity-Relationship (ER) model and/or Enhanced Entity-Relationship (EER) models. This model will incorporate at least seven entities and an appropriate number of relationships.
1.3 Logical Design: Using the ER/EER model developed in the previous step, teams will map the conceptual design into a relational database design. The relational schema will be created based on this logical design.
1.4 Physical Design/Implementation & Querying: Teams will implement the proposed design in a Relational Database Management System (RDBMS) and create queries/reports using SQL (Structured Query Language).

Part IV. Team Formation

Students are responsible for forming their teams and informing (ebru.dilan.extern@srh-hochschulen.de)via the Teams channel to initiate collaboration by July 19, 2025, at 11:59 pm (CET) as mentioned in the first lecture. *It is crucial to distribute the workload evenly among team members and ensure that every member comprehensively understands the project.*

Group	**No. of teams * No. of students**	**Total # of students**	**Total # of teams**
G1	[4 students * 4 teams] + [3 students * 2 teams]	22	6
G2	[4 students * 3 teams] + [3 students * 3 teams]	21	6
G3	[4 students * 5 teams]	20	5

PART V. Project Timeline

	Due Dates
Project Final Report & Database Submission	*July 10, 2025, at 9:00 (CET)*
Project Presentations + Q&A Jury Session	*July 10, 2025 (G1 & G3), and July 11, 2025 (G2)*

Framework for Responsible GAI Use in the Project

Permissible Tasks: Initial brainstorming, formatting, readability and clarity checks, and broad structural ideas.
Prohibited Tasks: Schema generation, direct SQL code generation, comprehensive documentation drafting. (Directly generating database schemas or SQL code with GAI tools is not allowed. While GAI tools can be useful for understanding syntax or basic query structure, the purpose of this project is for you to demonstrate your own skills in database design and management. Additionally, you should avoid using GAI to generate extensive project documentation or final reports. While AI might assist with summaries or rough drafts, it is crucial for you to refine and validate your work to meet academic standards.).
Transparency: Any AI-based assistance should be acknowledged. (You should be transparent about when and how you use GAI, citing AI-assisted work where appropriate. For instance, if you use GAI to brainstorm or generate ideas for report structuring, this should be mentioned in your project documentation's brief "AI Usage" section.
Ethics: All work must respect privacy regulations and show intellectual integrity. (You should ensure that any data used in your projects complies with privacy guidelines and does not include confidential or sensitive information generated or recommended by GAI tools.)