

**Exercise**  
**Business Informatics 2 (PWIN)**  
**Winter Term 2023/24**

Exercise II:  
Information Systems II & III

Fachbereich  
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The InstaMatch<sup>®</sup> scenario is required in order to solve some of the exercises. It can be found in exercise 1.

**Exercise 1: Models for the architecture of Information Systems**

- a) Please sketch a three-tier and a model-view-controller concept and explain the function of each component.
- b) Please determine to which component the following InstaMatch<sup>®</sup> elements belong in each concept:
  - The form for the input of personal information (e.g. gender, age, etc.) for users
  - The database for storing the contact list and calendar of a user
  - The software module containing the matching logic for the personal profiles of users

**Exercise 2: IS Architecture Concepts**

- a) What are the advantages and disadvantages of a Cloud Computing architecture in comparison to a central server concept?
- b) What kind of Cloud Computing services do there exist? Assuming the Cloud Computing concept is suitable for the InstaMatch<sup>®</sup> service, what type of Cloud service (e.g. infrastructure as a service) should be booked and why?
- c) Briefly explain the concept of Edge Computing Architecture and why it is gaining importance.
- d) Imagine you own a smart speaker, smart vacuum cleaner and smart light bulbs. Discuss the pros and cons of Edge Computing in the context of Smart Home Devices.

**Exercise 3: Mobile Infrastructure and Ecosystem**

- a) What is a SIM and why is it needed?
- b) What is the difference in Google's and Apple's business model?
- c) What types of apps do there exist and what is the difference between them? Which type is best suited for the InstaMatch<sup>®</sup> service and why?

**Exercise 4: Mobile Information Systems**

- a) Name three particularities of mobile devices that make them attractive for Marketers.
- b) Explain how a two-sided market works. Is InstaMatch<sup>®</sup> using this kind of business model? Please reason why or why not.

- c) Discuss the area of conflict between the benefit of the InstaMatch® service collecting context information about users and the demand of users to maintain their privacy.