Specialized seminar – Information systems

Course introduction

The goal of the course

- to develop abilities required for
  - communication during an IS development process
  - presenting the results of solving tasks in the field of information systems
  - discussion on your work and work done by other people
  - studying texts, using them in theses and other types of publications
  - everything in English

The content

- information systems, their architectures, and development
- structured and object-oriented analysis
- preparation of term projects

- teacher: F. Dařena

Teaching methods

- explanation of a topic + discussion
- solving practical tasks and presenting the results, also using given resources
- preparing project documentation, consultations

Term project

- the goal is to outline early phases in a real or fictive information system development project
- structure (more details later)
  - informal description of the problem domain
  - the global view (architecture) of the information system
  - expected benefits, impacts, etc.
  - structured and object-oriented analyses of a selected subsystem
- form of the presentation
  - documentation in a textual form (follow the structure)
  - oral presentation using PPT (or similar) slides, followed by a discussion
  - three members in a team (two if not possible to find three)

Term project – details

- introductory part
  - a verbal (and maybe graphical) description of the problem domain (company, its purpose, processes, products, involved people, etc.), problems, opportunities, and possibilities of solving them using an IS – a ***high level*** perspective

Term project – details

- introductory part – introducing a company
  - You might, for example, say that you are a store selling some kind of goods to your customers who are regular people and also some organizations. You need to buy the goods first and you also manufacture something. Therefore, you need some production capacities and warehouses. You sell the goods in a regular store. You need to be involved in some kind of promoting your products in some media. You have to communicate with your suppliers and organize deliveries of products and material. For that, you need some manufacturing, warehousing, sales, marketing, and accounting personnel, about 15 people.

Term project – details

- introductory part – problems and opportunities
  - For example, you are not able to organize your warehouse well enough, so you often run out of some products or some products are in the warehouse for too long. Because you have only one regular store, you are not able to reach many customers. Your current customers also very often switch to your competitors.

Term project – details

- introductory part – proposing some solutions to the above-mentioned problems
  - For example, you might introduce a new warehouse management system, an e-shop, and a customer loyalty program.

Term project – details

- the architecture
  - the most important blocks of an IS (with ***not too many details***) solving the identified problems, possibly arranged in vertical and horizontal dimensions as will be discussed
  - For example, you will say that there will be a block focused on order processing, invoices processing, employee work planning, customer loyalty program, supplies scheduling, etc.

Term project – details

- structured analysis of a ***selected*** IS part
  - data analysis: ERD + documentation
  - for example, you describe the structure of the data regarding the goods in your warehouses

Term project – details

- object-oriented analysis
  - a simple use case diagram of a selected subsystem (might be the same or different as for the structured analysis)
    - at least 3 actors, 7 use cases, one include and one extend relationship

Term project – details

- object-oriented analysis
  - study how to create a use case diagram in the literature; use at least three serious resources (books, journals, or conference papers)
  - besides your diagram, include a short description (about half a page) of the principles of creating the diagrams from the literature, e.g., “The purpose of use case diagrams is … Use case diagrams consist of … The diagram can contain the following types of relationships: …”
  - all the used resources need to be properly cited

Term project – details

- object-oriented analysis
  - all the necessary details for at least two not too simple use cases
    - for example, you describe how a customer registers to the customer loyalty program or how a customer places an order

Course completion

- the credit for the course is given after the project is submitted (at least three days before the defense) and defended
- evaluation of the document
  - following the prescribed structure
  - satisfactory content, logical interconnection of its parts
  - acceptable language
- evaluation of the presentation
  - everybody in a team understands all aspects of the project
  - ability to explain ideas and defend your proposals
  - ability to answer questions

Task

- find your teammates (it is better to have teammates in the same class)
- think about a few domains and companies in these domains
  - choose domains you know well so you can then decide in which one to continue
  - choose something that is not too simple (like one person giving private English lessons)
  - be ready to work on the topic in the following classes

Where to find resources?

- Google Books
  - a huge collection of digitalized books
  - you might search the books using keywords and limit and sort the search results
  - you usually cannot read all of the content
- Amazon.com
  - provides a free preview for many books (use the *Look inside* link)
  - usually the first (introductory) chapter
- FreeComputerBooks.com
- PDFdrive.com