# HOMEWORK 2. SYSTEM ANALYSYS USING UML

Homework 2. is a group project and can't be accomplished individually.

Homework 2 is devoted to Analysis phase of SDLC, particularly:

1. Requirements identification/gathering;
2. Use-cases identification and building Use-Case Diagram;
3. Developing Class Diagram;
4. Generate Java-code;
5. Developing Sequence Diagram.

All these steps must be applied to the system that was assigned to your team earlier as followings:

1. Group-01: Communication Software (Messenger)
2. Group-02: Task Management Software
3. Group-03: Inventory Control Software
4. Group-04: Taxi Dispatch Application
5. Group-05: Food Order/Delivery Application
6. Group-06: Document Flow/Management Software

1. **Generating Requirements**
   You are expected to provide **FUNCTIONAL** (15-20) and **NONE-FUNCTIONAL** (8-10) requirements for your system.
   Functional requirements must be divided into two groups:
   a. **Core requirements** (5-8) that well associated with any system like your system (let say, which requirements have to have any Accounting System...)
   b. **Optional/Additional** requirements you received from your potential customer during JAD-session.

   **NOTE:** *you can get requirements from the team who developed requirements for your project during JAD-session, if see them valuable, but anyway, you are expected to improve them.*

2. **Develop and offer Use-Cases** (5-9) that cover all scenarios described in requirements. Try to improve it until you have good coverage and correlation between list of requirements and set of use-cases.
   Build Use-Case Diagram - identify Actors and build associations with set of Use-Cases. Pay attention to the types of associations (relationship) trying to cover all types: General association, Generalization (Actor-based and Use-Case-based), Extension, Inclusion.

3. **Build the Class Diagram** that reflects main concept of the intended system and demonstrates relationships between its main components. Pay attention that are you on "Analysis" phase so abstraction level should be enough high. While building Class Diagram consider your Use-Case Diagram.

4. **Generate Java-code** based on your Class Diagram. This code is not required to be executable and complete. It would be more correct to name it the template of Java-code. You are expected to have in code all classes according to Class Diagram, right relationships between classes (Association, Aggregation, Composition, Generalization), attributes (at least those are known at this stage), methods (having signatures would be enough, but feel free to have implementation if it is already known), multiplicity (if applicable).

5. **Build Sequence Diagram** based on **one** of your most important use-cases (for particular project) that provides critical service in the framework of system you are working for. The Sequence Diagram is expected to describe how objects from Class Diagram interact with each other to support specific service.

**Important Recommendations:** While working for this homework you are expected to work intensively with Internet resources collecting more information about similar software solutions. Also, carefully review Section III. Application (Chapters 8-12) of the (2nd recommended) book Object-Oriented Analysis and Design with Applications, 3rd Edition, Grady Booch.

**Deliverables:** The result is expected to be submitted through Blackboard as a single PDF Document that includes all sections of assignment (document must include all of five mentioned sections). As a cover page use "***cover-page.docx***" document available in course content.

**Deadline for submission:** Wednesday, 18th March, 2020 at 23:59 through Blackboard

**Evaluation:** Your work will be evaluated based on:
1. Completeness, relevance and accuracy of requirements;
2. Appropriateness of Use-Cases to main services of the system;
3. Appropriateness of Class Diagram with Java-Code;
4. Correspondence of all Diagrams to the guidelines and notation requirements;
5. Overall quality of System Analysis;

Wishing you success,
Dr. Abzetdin Adamov