



**Poznan University of Technology**  
Faculty of Computing and Telecommunications

michal.apolinarski[at]put.poznan.pl

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**Course:** Application Security – laboratories

**Lecturer:** Michał Apolinarski, Ph.D.

**Topic:** Custom web application development

**Duration (on site):** 540 min.

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**PREREQUISITES:**

Knowledge of computer networks, operating systems, cryptography. Knowledge of programming languages and basic knowledge of database design and UML.

**GOALS:**

- The purpose of the exercise is to **design and develop custom web application** for example micro social website (micro blog with cuisine recipes).
- Preparing complete software documentation.

**INSTRUCION (tasks for a group of max 4 persons) - part 1:**

1. Prepare project documentation **custom micro social website** application divided on a **public site** and **user dashboard** with at least such functionality<sup>1</sup> like:

**a. on public site:**

- i. simple navigation through pages, categories, authors,
- ii. viewing news/posts created by authors (title, trailer, full content, images, category, rates, author, ...),
- iii. search forms:
  1. simple search by phrase,
  2. advanced search by dates, categories, authors etc.
- iv. adding comments under posts by anonymous or registered users,
- v. adding posts ratings for registered users,

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<sup>1</sup> more complex apps have a chance to be rated higher



vi. user (registration / log-in / forgotten password) form<sup>2</sup>

b. on **user dashboard**:

i. standard user:

1. managing own personal data,
2. access to comments and rating feature,
3. ...

ii. author (above +):

1. access to write posts feature,
2. ...

iii. admin (above +):

1. access to manage users (setting permissions, banning),
2. access to manage comments,
3. access to manage other content (menu, articles).
4. ...

2. Send the project documentation to the lecturer for a review and remarks:

- a. title page
- b. general description
- c. detailed requirements (functional and non-functional),
- d. tech stack and security assumptions,
- e. UML diagrams (at least: use case diagram, class diagram),
- f. DB schema
- g. mockups / UI
- h. security issues
- i. planed division of labor in the group

3. Present and discuss documentations with lecturer.

4. Start development process, at the same time improving the documentation extending it with fragments of the most interesting source code, real division of work in the group, goals achieved and problems encountered, summary and development perspective.

5. Demonstrate the final software and its documentation.

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<sup>2</sup> Its recommended to use developed mechanisms from previous classes.



## GENERAL NOTES:

- The project documentation should be neatly edited i.e. include a title page, table of contents, division into chapters and subchapters, drawings and tables should have captions.
- For a front-end, students can use free templates for the public site and admin dashboard e.g. <https://colorlib.com/wp/free-html5-admin-dashboard-templates/>
- More ambitious, complex and elaborate projects will be evaluated higher than projects containing the necessary minimum.
- Complete document should be send to the lecturer.