

THE TITLE OF THE PROJECT

Graduation Project Report

CMPE 406

Team members:

Name, Last Name, Student Number

Name, Last Name, Student Number

Name, Last Name, Student Number

Supervisor: Title and Name of the supervisor

Computer Engineering Department

Eastern Mediterranean University

Term: Term and Year

ABSTRACT

An informative abstract should a) state the scope and principal objectives of the design project, b) describe the methods employed, c) summarize the results and d) state the principal conclusions. It should not simply list the topics covered in the Undergraduate Project Report. In preparing the abstract, you should remember that it will be the most widely read portion of the Undergraduate Project Report. The abstract must be able to stand alone as a very short version of the Undergraduate Project Report rather than as a description of it.

Keywords: Around 5 keywords should be listed that are related to the subject area. You should confirm these with your supervisor.

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LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

State the problem that is being solved, why there is a need for the project, who will benefit from the project, attempts by others to solve the problem, general information in the problem area etc.

2. PROJECT PLANNING AND MANAGEMENT

You will discuss the planning and management issues are here. You already did some of them in your “PROJECT PLANNING & MANAGEMENT” document. The required and applied whole changes during the your project life cycle should be indicated here. Updated work distribution (for group projects) and timeline of the project, indicating tasks and their completion (deadline) estimates should be indicated here. Specifically, updated your project plan, the scope of the plan, your Work Packages (WPs) and your finalized Work Breakdown Structure (WBS) by using MS Project tool, updated sequence activities (pre-requisite WPs or tasks, dependent WPs or tasks, estimation duration of each task), latest cost estimation (i.e., using COCOMO or other cost estimation techniques and tools), latest Gantt chart, latest Critical Path Analysis Flow Diagrams (i.e., PERT, CPM), shortening the planned critical path of the project by pruning critical path activities, by "fast tracking" (i.e., performing more activities in parallel), and/or by "crashing the critical path", applying resource levelling (i.e., resource matrices, histograms), risk planning table (defining risks, probability of each risks, effect of each risk and your strategies for each risk), quality planning, are provided in excellent detail.

Briefly ;

- Project Definition, Aim, Scope, Target Users etc.
- WBS
- Required Resources
- Gantt Chart
- Project Package Tables
- Risk Analysis Table
- Procurement Tables
- Perform estimation of effort (Man/month), required total time duration and required number of team members by using COCOMO approach (or other methods are possible).
- CPM (Critical Path Management) analysis by using PERT (defining paths)
- Creating network diagram of the main tasks in WBS
- Calculating probability of successful completion rate for each paths
- Crashing approach, etc. other various techniques can be put here.

3. REQUIREMENTS ANALYSIS

3.1 Functional Requirements

Give a verbal description of WHAT the system should do. Who are the users/actors? How will they interact with the system? You may include use-case diagrams as well. Use the IEEE standard and UML tools such as Class diagrams, Associations of classes, Context diagrams, Entity-class diagrams for static modeling, State transition diagrams, Communication and/or Sequence diagrams for dynamic modeling.

3.2 Non-Functional Requirements

Security: How difficult should it be for people to hack the system? Reliability: How often will the system be allowed to fail or be unavailable? Usability: How easy should it be for users to use the system? Accessibility: Should people with disabilities be able to use the system? What are the requirements for evolution of the system, such as testability, maintainability, extensibility and scalability?

3.3 Realistic constraints

What other requirements and constraints should the project meet? Economic: can everybody use the system, or do they need a lot of investment? Environmental: does producing/using the product consume a lot of power? Does it produce pollution? Social: Are there social constraints? E.g. are certain segments of society prohibited in its use (persons less than 18 years old cannot use etc.)? Political: Are there political constraints? E.g. in South Cyprus, it would be a bad idea to produce an application that serves as a guide to Universities in the North. Ethical: Are there any ethical constraints that must be observed? E.g. not “borrowing” ideas or code from other projects without acknowledging it etc. Health and safety: can using the product endanger the health and safety of people or society? Manufacturability: Can the product be manufactured using reasonable amount of resources? Are the resources available? Sustainability: Can the product be used over the long term?

3.4 Ethical issues

What are the ethical issues related to the project/product? E.g. can people commit crimes using it? Can they engage in unethical behavior using it?

4. DESIGN

4.1 High level design (architectural)

Give the system architecture diagram showing all relevant system components and external systems (if any). What are the main modules? What are their interfaces? How are they connected to each other?

4.2 Software design

Give the modular hierarchy diagram discussing modules and their interfaces, indicate database structure and discuss data structures. Describe the main functions/procedures/methods that are used. Include E-R diagrams if you have databases, as well as design of the tables in the database (attributes, types, constraints etc.). You can use Data Flow Diagrams (DFDs) to create well-structured requirements and depict process modelling of your system. You can use Decision Tables to represent the logic of choice in conditional statements of your system.

Briefly, the sections 3 & 4 will include;

- a. Functional Requirements
- b. Non-Functional Requirements
- c. General System Architecture Diagram
- d. UML Modelling
 - i. Use Case Diagrams and Tables
 - ii. Sequence Diagrams
 - iii. Activity Diagrams
 - iv. BPMN diagrams
- e. DFD Diagrams
- f. E-R Diagrams
- g. Relationship diagrams
- h. Class diagrams
- i. Physical Database Tables, and etc.

5. IMPLEMENTATION

5.1 Tools, technologies and platforms used

Which tools, technologies, platforms, programming languages etc. did you use?

5.2 Algorithms

Give a high level description of the algorithms used for the main functions of the system. You may use pseudo-code.

5.3 Standards

What standards are applicable for the project? Which ones did you use? (e.g. standards for coding, designing components etc.)

5.4 Detailed description of the implementation (coding)

In this section, describe the system you have implemented in detail, with illustrative diagrams, tables, scenarios, etc. Give representative samples of the code you wrote, explaining how it works. Supplement the code with flow diagrams of modules, so that the context in which the code is used becomes obvious.

6. TESTING

How did you test your system? What is your test data? What deficiencies/errors did the test results reveal? What corrections did you make as a result of deficiencies/errors discovered in the testing stage? How did you verify/validate the end product?

7. USER GUIDE OF THE SYSTEM

Explain to the reader how the system should be used. In addition to verbal description, use screen shots if applicable, or any other illustrations as necessary.

8. DISCUSSION

What is the impact of your solution in the global, economic, environmental and societal context? How will your solution affect the world in general? How will it benefit people/society economically? (i.e. will people/society make/save money through the use of your solution?) Will environment be helped through your solution? (e.g. does it result in energy savings, reduced air pollution, reduced paper usage which reduces the number of trees cut etc.) Will your solution help society? (e.g. by reducing crime rate, helping people get easier access to medical assistance etc.). The answer to this part will be used to assess outcome h of ABET, so write it carefully and thoroughly.

9. CONCLUSION

Give a summary of what the project is for, what it does, and why it is a useful project. What have you really achieved through this project? Also, how did it help you personally? What new things you learned? Etc.

10. REFERENCES

List your references. You should cite these mainly in the introduction part.

APPENDICES

A. Instructions for installing the system

Give step-by-step instructions on how to install the system and get it running. For software projects, all code and other software should be given on a CD as well, labelled by the project name, and the team member names/student numbers. The CD should also contain a soft copy of this report, and a file called “readme.txt” that contains the same instructions as in this section.

B. Code for the system

Give the code for your project here. If it is too much (more than 10 pages), include only the code for the most important functions. All the code should be on the CD as well, as explained in part A.

C. Other relevant material

Give other material that is not included in the main body of your report which you think is relevant for your project here.