Project Description

GROUP 5

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Software Engineering

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1. Background description

A company “Colour IT” has reached out to the 1. Semester students of Software Engineering with a task to develop and implement an IT project management system. In addition, the company has asked to develop a website to complement the above mentioned system (Mr. Colour, 2020).

To start off, it is important to understand what exactly is the project management system, why is it important, why there is a need for such, and what are the main challenges in creating one.
Project management system is the tool that helps organizations in planning, organizing, tracking, scheduling and improving the work. It can assist in preparing for difficult projects and also improve productivity of the company as a whole (Vartika Kashyap, 2020).

In today's world many organizations rely on online IT solutions in order to get better results at work and satisfy the customers. The main reasons why organizations use project management tools are (Wrike, 2020):

1) **Visibility.** Enables the company and their customers to see the overview of the projects, view the progress and timeline of accomplished work.
2) **Accountability**. Sets clear division of tasks and responsibilities for employees, thus avoiding confusions in splitting the tasks, makes a clear overview of scheduled work and deadlines, and helps with timely updates to all levels in the organization, also including the customers.
3) **Organization.** Keeps everything in one place and is secure. Informs about the details and if the updates were made, thus keeping every team member and also the customer on board.

However, due to the high costs that could arise during the implementation of such systems, not every company is able to pay for the software management systems and their maintenance. That can lead to the companies refusing to use the mentioned systems, which of course shows on a company's overall results, because it becomes harder to compete in the market with other companies which do use it (Wrike, 2020). Another challenge worth mentioning is that there is no guarantee that a specific management system will improve the

overall performance of a firm and its customers satisfaction. This happens due to the fact that it takes time to get comfortable with the softwares interface and there is also no guarantee that it might be well-designed or suited for the specific needs of a specific firm. Therefore it is very important to properly define the requirements of such a system, which can be hard if the customer is unsure, or if there is a misunderstanding between the firm and the customer (Alp Group, 2019).

2. Definition of purpose

The main purpose is to provide support to “Colour-IT” company in order to help manage the projects and monitor the progress, which includes - productivity of the employees, division of the tasks, time spent working and processes that help in achieving the goal.

3. Problem Statement

“Colour-IT” has a need for an IT project management system, which will help in organizing the work between the employees and track their process. In addition, there is a need to have a website for the customers to view the progress information.

To get a deeper understanding of the problem, the group have come up with the following questions:

- What are the requirements for such a system?
- How should the system function?
- What type of information should it store?
- In what form the data should be stored?
- How can the data be accessed?
- What information should be presented for the customers?

4. Delimitation

Due to the given time restrictions, as well as the fact that the project is carried out by the first semester students with little to no programming experience, the project is not going to include a complicated system with a database. This being said, the system that the team will develop is a basic and simple single user system.

5. Methodology

In the given project the development team will focus on the waterfall methodology, which is a linear project approach, where the needs and the requirements of the customer are gathered and reviewed in order to come up with and create the best possible solution of the implemented system. The model is used for smaller projects with well-defined requirements. With the help of a mentioned model it is easy to arrange tasks and the results are well documented (Tutorialspoint, 2020). However, if the tasks are not understood and clearly defined it is easy to fail within this approach. Since errors can be fixed only during a specific stage, the team could run into a problem during one of the stages, which would result in the next stage bringing even more errors which are unfixable, and because there is no possibility to go back and correct the problem in the previous stages, the project could fail all together (Rumor, 2019).

The waterfall model consists of five stages, which are being followed in a strict, linear order. Each stage has to be fully completed before moving on to the next stage. Originally, the stages of the waterfall model were defined by its inventor Winston Royce as follows (ProjectManager, 2020):

1) **Requirements.** In the first stage of the waterfall model the customer needs are reviewed and all the requirements are documented as precise as possible. After this stage is complete, only then it is allowed to move to the following stage.
2) **Design**. Second stage can be broken into two sub categories, where one of them is logical design and the other one is physical design. Logical design is brainstorming of possible solutions and the physical design is when these solutions and ideas are being made into the concrete specifications.
3) **Implementation**. Third stage is when previously made specifications and requirements are implemented and made into an actual code for the developing system.

4) **Verification**. The following stage consists of releasing the ready product to the customer, where it is reviewed and checked if the product meets the needs and requirements laid out in the beginning of the project.
5) **Maintenance**. In the final stage the customer is regularly using the developed system and might discover some bugs, wrongly implemented features and errors that need to be fixed and maintained by the development team until all the needs and requirements are met and the customer remains satisfied.

6. Time schedule

Each team member is supposed to have a workload of 27.5 hours, but as most of the members have little to no programming experience, the actual expected workload is going to be nearly 40 hours per person.
The expected sum of the hours of work is:

40x4(number of members)=160 hours or 6 ECTS;

The group has to complete all 5 following stages:

1. Background description
2. Developing the working plan
3. WaterFall approach:
    - Requirements
    - Design
    - Implementation
    - Verification
    - Maintenance
4. Documentation revision and report writing
5. Deadline

All stages must be done until the 23rd of December. The team has 83 days or 58 working days or 11 weeks and 6 days until the deadline. For each stage the team has decided to spend 16,6 days. Some of the stages might be easier to complete than the others, meaning that if the team will finish one of the stages sooner, there will be more time for the more difficult tasks.

In addition, there are stages where the team needs approval of the customer, for example in the stage of *Verification*. It means that the team has to take into account that the customer might have some delays based on the human factor.
The diagram below shows distribution of stages over the time:

(30.09) →Background description → (16.10) → Developing the working plan → (01.11) → WaterFall methodology→ (17.11) → Documentation revision and report writing→ (19.12) → (23.12) Deadline

7. Risk assessment

While working on the project, the team could encounter several problems. In order to prevent potential issues in the future, the team has decided to create a table which the reader can see below.

Risks	Description	Likelihood scale 1-5 5 = high risk	Severity scale 1-5 5 = high risk	Product of likelihood and severity	Preventive and responsive actions	Identifiers	Responsible
1	Lack of time	4	5	20	Respect the schedule deadlines Meet on weekends	Making excuses laziness irresponsibility	Marwa
2	Misunderstanding between team members	3	4	12	Think objectively, follow the guidelines	Ignoring the tasks, take a different direction	Malai
3	Laziness	2	5	10	Follow the schedule, find motivation, be disciplined	Not coming to meetings/ making lots of excuses	George
4	Software integration fails	5	3	15	Learning coding, paying attention in class	Huge amount of coding mistakes	Adrian
5	Ignoring clients requirements/ confusing the task	2	5	10	Make a clear picture of customers' needs. Always ask if there are doubts	Developing a system which does not meet requirements.	George
6	Human errors	3	3	9	Double-checking with the group	Unexpected mistakes	Dmitrii
7	Corona	3	5	15	Wear a mask, wash your hands, keep distance	Being sick	Dmitrii

Fig. 1 Risk assessment table (see appendix 2. Risk assessment)

8. Sources of information

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Appendices

Appendix 1. Group contract

Group Contract

Group Name (optional): **GROUP 5** Date: **23.09.2020**

These are the terms of group conduct and cooperation that we agree on as a team.

Participation: We agree to....
respect every task and to show interest for the project . Also, we agree to try our best in everything we have to do.

Communication: We agree to...
discuss every problem and try to find a solution.
Do not hesitate to ask questions between the group members.
Make sure that everybody is on board with the project.

Meetings: We agree to....
come to every meeting which is scheduled and if it is not possible we must announce everybody in the group about this and also the reason.
If a team member does not show up, he needs to do at least something at home.

Conduct: We agree to....
Respect each other's time and do everything according to the schedule.
If members are not following the rules, we talk to the supervisor and decide what to do further from there.

Conflict: We agree to avoid unnecessary conflicts and talk through all the problems we might encounter during our work in teams.

Deadlines: We agree to do everything before the deadlines, and not in the last moment. Be aware of time!

Group member's name	Student number	Signature
Marwa Nezar Alsaduni	293119	Alsaduni Marwa
Adrian-Gabriel Vaitis	304486	Vaitis Adrian
Alexandru Malai	304189	Alexandru Malai
Dmitrii Pinzari	304618	Pinzari Dmitrii
Andronache George Eduard	293711	Andronache Eduard