Application of Final Project Progress Reporting in Diploma of Informatics Management Study Program Telkom University

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ABSTRACT

As part of the completion of the study, student in Diploma of Informatics Study Program Telkom University are required to create a project in semester 6 (six). In the completion of the project, the students will be accompanied by a supervisor who acts as project manager. Students shall periodically report the progress of the completion of the final project and get an evaluation of lecturers. On the other hand, supervisor must assess the percentage of completion of the final project. Final project progress reporting application built with the aim to eliminate the limitations of students to report on the progress of the completion as difficult to meet with the supervisor, and the supervisor helps precisely calculate the percentage of completion of the final project. This application serves to monitor and control progress on the final project execution, so by using this application, evaluator can collects actual work and student performance information, collects latest estimates to completion, compares actual performance with plan, also identifies out of tolerance situations.

INTRODUCTION

A student enrolled in the Diploma of Informatics Management Telkom University will be studying during the 6 (six) semester. In the final cycle of learning system, students must complete a project named the final project. In general, a project can be defined as the work to be carried out and completed within the stipulated time, budget, resources and performance specifications that are designed to meet the needs of stakeholders and beneficiaries. A project has some attributes, they are: a project has a unique purpose, a project is temporary, a project requires resources, a project should have a primary customer or sponsor, and a project involves uncertainty [1]

More specifically, the final project is a collaboration between lecturers and students as a team, to identify possible implementation of an information technology and completed in a span of 4 (four) to 6 (six) months. The final project is also the estuary to implement the overall material, which has been acquired by the students during their study period, into a software. The software is built based on the formulation of the problems and needs of the software that has been previously identified on a case study. The main characteristics of software built by the students is the implementation of information technology to translate business processes running on an organization.

During a predetermined time, the team will formulate a project cycle comprising several phases, namely: definition, planning, execution, and delivery. The following Table 1 detailing the activities undertaken by the team in every phase.

Table 1: Activities on each phase.

<table>
<thead>
<tr>
<th>Definition</th>
<th>Planning</th>
<th>Execution</th>
<th>Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define software requirement specification</td>
<td>Detailing software functionalities</td>
<td>Status report</td>
<td>Software testing</td>
</tr>
<tr>
<td>Produce project’s proposal</td>
<td>Define software design document</td>
<td>Monitoring and evaluation</td>
<td>Produce project’s documentation</td>
</tr>
<tr>
<td>Schedule</td>
<td>Define tools</td>
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As a team, one of team member will be assigned as project manager. The primary responsibility of the project manager is to ensure that all work is completed on time, within budget and scope, and at the correct performance level [2]. In case of final project execution, during the project period, a lecturer acting as a project manager in charge of monitoring, guiding, and provide an evaluation of improvement, so the project should be completed by the student does not exceed a predetermined time limit.

During the work on the final project, students periodically report the progress of the project to the lecturer. Reporting activities - commonly referred to consultation - noting the completion of each part of the project. In addition to reporting the progress of the completion of software that is built, the student is also required to report the completion of the software development documents. The main weaknesses were found in the form that is: there is no calculation of the percentage of completion of the project and there is no information about the settlement time span for each functionality of the software is built.

2.0 Literature Review:

A project can be considered to be any series of activities and tasks that: Have a specific objective to be completed within certain specifications, have defined start and end dates, Have funding limits (if applicable, consume human and nonhuman resources (money, people, and equipment), are multifunctional (i.e., cut across several functional lines). Project management, on the other hand, involves five process groups as identified in the PMBOK® Guide, namely: project initiation, project planning, project execution, project monitoring and control, and project closure [2]. A series of these processes must be executed with discipline so that the final result in accordance with the project sponsor expectations. The quality of the resulting product can also be measured by the tightness of each member in the project comply with the process. We can define project success as the completion of an activity within the constraints of time, cost, and performance [3]

Appropriateness of the project team complete each component according to the deadlines scheduled can determine the survival of the project. Well-defined development processes are important and necessary elements of software project survival. With well-defined processes, software personnel can spend most of their time on productive work that moves the project steadily toward completion. With poorly planned processes, developers spend a lot of their time correcting mistakes. Much of the leverage for project success is contained in upstream activities, and knowledgeable software stakeholders ensure that projects focus enough attention on upstream activities to minimize problems downstream [4]. Survival in the terminology of the final project is students can complete studies on time.

A project also defined as a temporary undertaking performed to produce a unique product, service, or result. Large or small, a project always has the following three components: specific scope, schedule, required resources [5] with the main resources are students and lecturers as a team. Lecturer playing role as a project manager on final project. As a project manager, their job is challenging. For instance, she often coordinates technically specialized professionals — who may have limited experience working together — to achieve a common goal. Although the project manager’s own work experience is often technical in nature, her success requires a keen ability to identify and resolve sensitive organizational and interpersonal issues. In this section, I describe the main tasks that a project manager handles and note potential challenges she may encounter [5].

3.0 Framework:

Framework used to build the final project progress reporting application as a tool that can be used by the supervisor to monitor the completion of the final project is the five project management process groups that support the four project life cycle stages [5] as shown in Figure 1.

![Fig. 1: Project management process.](image)

3.1 Initiating Processes:

The process of identifying the objectives of the project include: defining the business needs, determination of the prospective users of the application, the scope of the problem, as well as the technology that will be used to build software. The final results initialization process is poured into the final project proposal.
3.2 Planning Processes:
  Detailing the project scope, time frames, preparation of software design based on business needs, a list of software functionality, and determination of the weight of each functionality.

3.3 Executing Processes:
  Translation software design according to the technology used, report the completion of each software functionality, and implementation of unit testing by students.

3.4 Monitoring and Controlling Processes:
  Tracking performance, evaluate, taking actions necessary to ensure each software functionality are successfully implemented and the desired results are achieved and also can be completed in accordance with a predetermined schedule.

3.5 Closing Processes:
  Ending all project activity.

RESULTS AND DISCUSSION

The following discussion of the translation framework as software requirement.

4.1 Initiating Processes:
  In the early stages of the final project, students are required to explain the description of the problems will be proposed as the title of the final project. At this stage, the student is expected to be able to give an overview of the formulation of the problem, objectives, as well as the boundary problem will determine the scope of information technology solutions that will be proposed according to the case study. In addition, the student is also asked to write down the technology to be used in building software. Lecturer role is to provide input so the scope of the solution proposed by the student is able to meet the business requirements completely. Figure 2 is a form that can be filled out by the student in explaining the project idea eventually.

![Initiating final project form.](image)

Information that is loaded by the students in the form on the top as a basis for students when preparing the final project proposal. The proposal will be tested at the seminar to obtain feedback from testers related to the adequacy of coverage problems will be solved as well as tools or supporting technologies proposed to build the software, and the conclusion will be written as a contract seminars. Contract seminar is also the basis for the planned project in the next phase.

4.2 Planning Processes:
  The contract, which has been generated in the seminar, subsequently determined by students and faculty into the list of software functionality. The list will be the basis of making the features that will be provided by the software as a solution to solve the problems that have been identified in the previous phase.
To formulate a project plan, there are some activities that will be carried out by the team. The first, student must propose the weight and the completion time of each functionality. The proposal that has been filled by the student will then be evaluated by lecturers, where the lecturer reserves the right to alter the weight and timing of completion that has been proposed by a student. The final step is a lecturer gave approval to the proposal that has been evaluated. Total weight for the overall functionality must be 100%. If the total weight of the charged has not reached 100%, then the application will alert the user to complete the weight to reach 100%.

List functionality that has not been approved by the supervisor can be modified or deleted by the student by pressing the appropriate button in the action column. Meanwhile, for the functionality that has been approved by the supervisor, cannot be changed or deleted. Figure 3 shows a list of functionality that has been approved by the supervisor.

![Fig. 3: List of approved functionality.](image)

Supervisor role is to monitor and keep every functionality can be completed by students according to the deadlines that have been approved. To summarize the project schedule, the application presents a Gant chart which makes it easier to understand as shown in figure 4.

![Fig. 4: Ghant chart.](image)

### 4.3 Executing Processes:

After completing the project planning, which is characterized by all of the functionality has been approved by the supervisor, the next task to be performed by the students are building the software as a whole. Each functionality has been resolved or are being worked on must be reported to the supervisor as part of the consultation. Through this application, students can report the progress of the completion of the functionality and get direct feedback from the tutor. At the time of reporting the progress of the functionality, the student must attach a summary of how to use the functionality in a pdf format document. The document will be a reference supervisor to provide feedback or revised so that the functionality that is resolved according to the needs of its users.
Form shown in Figure 5 is used by students to submit a progress report on the completion of a functionality.

![Form Input Pogram Fungionaltas Aplikasi](image)

Fig. 5: Form to functional completion report.

After receiving reports from students, the supervisor will provide evaluation and revision notes if the functionality that reported not meet the needs of users. Figure 6 shows a progress report lists the functionality that had been sent by the students.

![Progress Pogram Fungionaltas Aplikasi](image)

Fig. 6: Progress report list.

In addition, the supervisor also determines the percentage of completion of such functionality. A functionality can be declared completed if the supervisor gives 100 points, which also indicates that the supervisor has approved such functionality as shown in Figure 7.

4.4 Monitoring and Controlling Processes:

As a major part of the project management process, the application provides features that can be used by the supervisor to monitor the performance of the students in completing each functionality. Through this feature, the supervisor can predict the timeliness of completion of the final project the students through the observation of the percentage of completion of the entire project as well as the deadline for completion permitted. Application presents the percentage of completion functionality to the supervisor in the form of a pie chart divided into four (4) quadrants, namely: the completion of 0% -25%, 25% -50% completion, the completion of 50% -75%, and 75% completion - 100%. Figure 8 presents a pie chart for the supervisor.
If the supervisor wants to see the detail of students in a particular quadrant, supervisor can click the desired quadrant, as shown in Figure 9.

![Evaluation form](image1)

**Fig. 7:** Evaluation form.

![Pie chart](image2)

**Fig. 8:** Pie chart to inform students performance.

![Detail of students in selected quadrant](image3)

**Fig. 9:** Detail of students in selected quadrant.

5.0 Conclusion:
The conclusions for this research are as follows:
1. By using the application final project progress report, supervisor can accurately calculate the percentage of completion of the final project
2. Students do not have to come face to face directly if want to consult and report on the progress of the completion of the final project.
3. Supervisor can perform preventive and corrective actions in accordance with student performance is presented in the form of a pie chart.

REFERENCES