PROJECT: BOGOR – JAVA ENVIRONMENT FOR ECLIPSE

DELIVERABLE: PROJECT PLAN

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Table of Content

1. TASK BREAKDOWN ......................................................................................................................... 3
   1.1. INCEPTION PHASE .................................................................................................................. 3
       1.1.1. Environment Specification ............................................................................................. 3
       1.1.2. Requirement Development ............................................................................................. 3
       1.1.3. Architecture & Component Prototype ........................................................................ 3
       1.1.4. Assessment planning ........................................................................................................ 3
   1.2. ELABORATION PHASE ........................................................................................................... 3
       1.2.1. Requirement Baseline ...................................................................................................... 4
       1.2.2. Architecture Design Model ............................................................................................ 4
       1.2.3. Architecture test scenario implementation ................................................................ 4
   1.3. PRODUCTION & TRANSITION PHASE ................................................................................. 4
       1.3.1. Code development and testing ...................................................................................... 4
       1.3.2. Design modeling ................................................................................................................ 4
       1.3.3. User manual baseline ...................................................................................................... 5
2. TIMELINES IN GANTT-CHART ........................................................................................................ 5
3. COST ESTIMATE ............................................................................................................................... 5
   3.1. COCOMO II ............................................................................................................................. 5
4. ARCHITECTURE ELABORATION PLAN ....................................................................................... 7
   4.2. REVISION OF PROJECT PLAN ............................................................................................. 7
   4.3. ARCHITECTURE DESIGN ....................................................................................................... 7
   4.4. DEVELOPMENT OF PROTOTYPE ......................................................................................... 7
   4.5. TEST PLAN .............................................................................................................................. 7
   4.6. FORMAL TECHNICAL INSPECTIONS ................................................................................... 7
1. Task Breakdown

1.1. Inception Phase

The essential activities of the inception phase are capturing the requirements and operational concept, planning and preparing a business case, and evaluating candidate architecture. Tasks are detailed as follows.

1.1.1. Environment Specification

**Description:** This task involves identifying the resources and infrastructure, and deciding on the software languages and tools.

**Completion Criteria:** Make decision on languages and tools to be used for development.

1.1.2. Requirement Development

**Description:** Vision document is outlined. High-level use cases are modeled.

**Completion Criteria:** A requirement specification draft and development of use case mark the completion of this task.

1.1.3. Architecture & Component Prototype

**Description:** Construction of a working prototype.

**Completion Criteria:** The working Prototype is reviewed and approved by the committee and is entered into the baseline.

1.1.4. Assessment planning

**Description:** Development of a Quality Assurance Plan.

**Completion Criteria:** The SQA plan is reviewed and approved by the committee.

1.2. Elaboration Phase

The essential activities of the elaboration phase are elaborating the vision, elaborating the process and infrastructure, and elaborating the architecture and selecting components. The initial vision document and the project plan will be adjusted according to the feedback from committee members in the first presentation. Tasks are detailed as follows.
1.2.1. Requirement Baseline

**Description:** An executable architecture prototype is built. Primary use-case demonstration has to be done.

**Completion Criteria:** All the essential requirements are addressed in the use-case models.

1.2.2. Architecture Design Model

**Description:** Architecture Design Model depicts the design of the components within the architecture.

**Completion Criteria:** The architecture design model is reviewed and approved by the committee.

1.2.3. Architecture test scenario implementation

**Description:** Implement test scenarios to test system architecture to be created at elaboration phase.

**Completion Criteria:** Architecture test scenario implementation is entered into baseline.

1.3. Production & Transition Phase

Since this project requires three presentations, production and transition phase are combined into one section. During this time period, the major tasks are implementation and testing, which consist of coding, documentation, creating user manual, user acceptance testing, and unit testing.

1.3.1. Code development and testing

**Description:** Developing source code and testing executables for each component.

**Completion Criteria:** Unit testing is complete. Source code and tested executables are entered into baseline.

1.3.2. Design modeling

**Description:** Development of low level and detailed component design.

**Completion Criteria:** The Design Modeling is reviewed and approved by the committee and is entered into the baseline.
1.3.3. User manual baseline

**Description:** Development of user manual, the manual will be delivered along with the software product. It includes the details on software product introduction, usage, installation, and troubleshooting.

**Completion Criteria:** User manual is entered into the baseline.

2. Timelines in Gantt-Chart

Figure 2 is a Gantt chart that shows the schedule for every task in each phase.

![Gantt chart]

3. Cost Estimate

Normally, it is difficult to estimate the total lines of code in the inception phase of one project. COCOMO II will be used in this project because it uses function points in early design phase to estimation the cost.

3.1. COCOMO II

The following equation is used to estimate the effort in early design phase.

Equation#1: \( \text{Effort} = 2.45 \times \text{Earch} \times (\text{Size})^P \)

Where:

\( \text{Effort} = \) number of staff-months
Earch = product of seven early design effort adjustment factors
Size = number of function points (preferred) or KSLOC
P = process exponent

Table 3.1 displays the EAF value for this project. The highlighted cells in Table 3.2 display the values of process exponent parameters. Five user function types should be identified when using function point in the equation. These 5 types are External Input, External Output, Internal Logical File, External Interface Files, and External Inquiry. Eight function points has been identified for this project during the inception phase. The total value of process exponent parameters evaluates to 1.26. The EAF value evaluates to 0.86. The Effort evaluates to: Effort = 2.45*0.86*(8)^1.26 = 28.9 staff-months
Where:

\[
\text{Effort} = \text{number of staff-months} \\
\text{Earch} = \text{product of 17 post-architecture effort adjustment factors} \\
\text{Size} = \text{number of KSLOC (preferred) or function points} \\
P = \text{process exponent}
\]

4. Architecture Elaboration Plan

The following documents shall complete before second presentation.

4.1. Revision of Vision Document

The Vision Document will be adjusted based on the feedback from the first presentation. All requirements, ranked according to importance, will be documented into the updated Vision Document. And a set of critical requirements will be identified.

4.2. Revision of Project Plan

Updates that include cost and effort estimate, and feedback from first presentation will be made to the project plan.

4.3. Architecture Design

The complete architectural design will be documented using UML. Each component in the architecture will be documented at the interface level.

4.4. Development of Prototype

To address all critical requirements in revised vision document, an executable architecture prototype will be built prior to the second presentation.

4.5. Test Plan

A plan that includes evaluation criteria for all critical use cases and a set of test data deemed adequate for acceptance testing will be developed for the project to address the required tests to show that the product satisfies the requirements.

4.6. Formal Technical Inspections

Matthew Hoosier and Todd Wallentine will inspect the architecture design. A formal inspection checklist will be prepared.