

# AEN1 – AEN1 TASK 1: SOFTWARE DESIGN PLAN

SOFTWARE DESIGN AND QUALITY ASSURANCE – D480

PRFA – AEN1

TASK OVERVIEW

SUBMISSIONS

EVALUATION REPORT

## COMPETENCIES

### 4023.2.1 : Determines Impact on Business Requirements

The learner determines the impact of business requirements on software design patterns and software systems.

### 4023.2.2 : Identifies Goals and Roadblocks

The learner identifies goals and potential roadblocks as part of software development plans.

### 4023.2.3 : Defines Plans for Development Tasks and Environments

The learner defines plans for development tasks and environments based on desired quality outcomes.

### 4023.2.4 : Recommends Tools and Services

The learner recommends tools and services to address functional and non-functional testing outcomes.

## INTRODUCTION

Throughout your career in software design, you will be asked to plan the design approach to meet business requirements. You will need to identify business needs, design an aligned solution, define both functional and non-functional requirements, describe expected software behavior and structure, and determine the expected development approach.

In this task, you will be given a software design and quality assurance scenario and a ticket artifact. You will be asked to create a software design plan to address the information in the ticket artifact regarding the functionality of a web app. You will need to use the attached “Software Design Plan” template to create your submission.

## SCENARIO

Refer to the scenario in the attached “Background Information” document.

## REQUIREMENTS

*Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. The similarity report that is provided when you submit your task can be used as a guide.*



You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

Tasks may **not** be submitted as cloud links, such as links to Google Docs, Google Slides, OneDrive, etc., unless specified in the task requirements. All other submissions must be file types that are uploaded and submitted as attachments (e.g., .docx, .pdf, .ppt).

A. Using the “Software Design Plan” supporting document, identify the business case by doing the following:

1. Summarize the problem statement from the "Background Information" supporting document (i.e., scenario, ticket) to be addressed, including identification of the current state of the web app functionality.
2. Identify **two or more** business requirements based on the provided ticket. Discuss how the existing web app fails to meet those collective requirements.
3. Identify **2–4** in-scope action items that are to be addressed. For each identified in-scope action item, explain how that action item aligns with a corresponding business requirement identified in part A2.
4. Identify **two** out-of-scope action items that are not to be addressed. For each identified out-of-scope action item, explain the following points:
  - how the action item aligns with the provided ticket
  - why the action item should be labeled as "out of scope"

B. Using the “Software Design Plan” supporting document, define the requirements by doing the following:

1. Define **2–4** functional requirements to be addressed.

*Note: Functional requirements should summarize core aspects needed for the web app to be updated to function as discussed in the ticket.*

2. Define **two** non-functional requirements to be addressed.

*Note: Non-functional requirements should summarize supporting aspects needed for the web app to be updated to function as discussed in the ticket.*

C. Using the “Software Design Plan” supporting document, outline the software design by doing the following:

1. Define **2–4** categories of inputs or events regarding the proposed software behavior of the web app. For each defined category, identify the following points:
  - the intended web app response
  - the associated constraints
2. Outline how the intended design approach will segment the development and functionality of the web app elements (e.g., functions, classes) regarding the proposed software structure of the web app.

D. Using the “Software Design Plan” supporting document, define the development approach by doing the following:

1. Define **2–4** planned deliverables (e.g., functions, modules, documentation) to be produced. For each defined deliverable, summarize the steps to be taken in creating that deliverable.
2. Define a logical sequence of implementation for the deliverables defined in part D1, including the justification of the planned sequence of deliverables.
3. Define the development environment elements (e.g., coding languages, integrated development environments [IDEs], external dependencies and integrations, supporting tools) planned for use in

addressing the provided ticket. For *each* defined development environment element, state the purpose of that element in addressing the provided ticket.

4. Identify the expected software development approach to be used (e.g., agile, waterfall, continuous, incremental, rapid). Additionally, explain the following points:
- how the chosen methodology informed the development planning process, including the sequence of deliverables outlined in part D2
  - why the chosen methodology was selected over an alternative methodology

E. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

F. Demonstrate professional communication in the content and presentation of your submission.

## File Restrictions

File name may contain only letters, numbers, spaces, and these symbols: ! - \_ . \* ' ( )

File size limit: 400 MB

File types allowed: doc, docx, rtf, xls, xlsx, ppt, ptx, odt, pdf, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z

## RUBRIC

### A1:PROBLEM STATEMENT

#### NOT EVIDENT

The submission does not summarize the problem to be addressed by the software design plan or identify the current state of the web app functionality. Or the “Software Design Plan” was not used.

#### APPROACHING COMPETENCE

The submission uses the “Software Design Plan” to summarize the problem to be addressed or identify the current state of the web app functionality but not both.

#### COMPETENT

The submission uses the “Software Design Plan” to summarize the problem to be addressed and identify the current state of the web app functionality.

### A2:BUSINESS REQUIREMENTS

#### NOT EVIDENT

The submission does not identify any business requirements based on the provided ticket. Or the “Software Design Plan” was not used.

#### APPROACHING COMPETENCE

The submission uses the “Software Design Plan” to identify at least 2 business requirements based on the provided ticket but does not discuss how the existing web app fails to meet those requirements. Or

#### COMPETENT

The submission uses the “Software Design Plan” to identify at least 2 business requirements based on the provided ticket and discuss how the existing web app fails to meet those requirements.

the submission only identifies 1 business requirement.

**A3:IN-SCOPE ACTION ITEMS****NOT EVIDENT**

The submission does not identify any in-scope action items to be addressed. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to identify at least 2 in-scope action items that are to be addressed but does not explain how *each* action item aligns with a corresponding business requirement identified in part A2. Or the submission only identifies 1 in-scope action item.

**COMPETENT**

The submission uses the “Software Design Plan” to identify at least 2 in-scope action items that are to be addressed and explain how *each* action item aligns with a corresponding business requirement identified in part A2.

**A4:OUT-OF-SCOPE ACTION ITEMS****NOT EVIDENT**

The submission does not identify any out-of-scope action items not to be addressed. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to identify 2 out-of-scope action items that are not to be addressed within the software design plan but does not explain each of the 2 given points for *each* action item. Or the submission only identifies 1 out-of-scope action item.

**COMPETENT**

The submission uses the “Software Design Plan” to identify 2 out-of-scope action items that are not to be addressed and explain each of the 2 given points for *each* action item.

**B1:FUNCTIONAL REQUIREMENTS****NOT EVIDENT**

The submission does not define any functional requirements to be addressed. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to define one functional requirement to be addressed.

**COMPETENT**

The submission uses the “Software Design Plan” to define at least 2 functional requirements to be addressed.

**B2:NON-FUNCTIONAL REQUIREMENTS**

**NOT EVIDENT**

The submission does not define any non-functional requirements to be addressed. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to define one non-functional requirement to be addressed.

**COMPETENT**

The submission uses the “Software Design Plan” to define 2 non-functional requirements to be addressed.

**C1: SOFTWARE BEHAVIOR****NOT EVIDENT**

The submission does not define any categories of inputs or events regarding the software behavior of the web app. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to define at least 2 categories of inputs or events regarding the software behavior of the web app but does not identify each of the 2 given points for *each* category of inputs or events. Or the submission only identifies 1 category of inputs or events.

**COMPETENT**

The submission uses the “Software Design Plan” to define at least 2 categories of inputs or events regarding the software behavior of the web app and identify each of the 2 given points for *each* category of inputs or events.

**C2: SOFTWARE STRUCTURE****NOT EVIDENT**

The submission does not outline the intended design approach. Or the “Software Design Plan” was not used.

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to outline the intended design approach, but the outline does not address how the intended design approach will segment the development and functionality of the web app elements regarding the proposed software structure of the web app.

**COMPETENT**

The submission uses the “Software Design Plan” to outline how the intended design approach will segment the development and functionality of web app elements regarding the proposed software structure of the web app.

**D1: PLANNED DELIVERABLES****NOT EVIDENT**

The submission does not define any planned deliverables. Or the

**APPROACHING COMPETENCE**

The submission uses the “Software Design Plan” to define at least 2 planned deliverables

**COMPETENT**

The submission uses the “Software Design Plan” to define at least 2 planned deliverables to

"Software Design Plan" was not used.

to be produced but does not summarize the steps in creating *each* planned deliverable. Or the submission only identifies 1 planned deliverable.

be produced and summarize the steps in creating *each* planned deliverable.

#### D2:SEQUENCE OF DELIVERABLES

##### **NOT EVIDENT**

The submission does not define a sequence of implementation for the planned deliverables in part D1. Or the "Software Design Plan" was not used.

##### **APPROACHING COMPETENCE**

The submission uses the "Software Design Plan" to define a logical sequence of implementation for the deliverables in part D1 but does not justify the planned sequence of deliverables. Or the sequence of implementation for the deliverables is not logical or is incomplete when compared with D1.

##### **COMPETENT**

The submission uses the "Software Design Plan" to define a logical sequence of implementation for the deliverables in part D1 and justify the planned sequence of deliverables.

#### D3:DEVELOPMENT ENVIRONMENT

##### **NOT EVIDENT**

The submission does not define the development environment elements planned for use in addressing the ticket. Or the "Software Design Plan" was not used.

##### **APPROACHING COMPETENCE**

The submission uses the "Software Design Plan" to define the development environment elements planned for use but does not state the purpose of *each* element in addressing the ticket.

##### **COMPETENT**

The submission uses the "Software Design Plan" to define the development environment elements planned for use and state the purpose of *each* element in addressing the ticket.

#### D4:DEVELOPMENT METHODOLOGY

##### **NOT EVIDENT**

The submission does not identify the expected software development approach to be used. Or the "Software Design Plan" was not used.

##### **APPROACHING COMPETENCE**

The submission uses the "Software Design Plan" to identify the expected software development approach to be used but does not explain each of the 2 given points.

##### **COMPETENT**

The submission uses the "Software Design Plan" to identify the expected software development approach to be used and explain each of the 2 given points.

**E:SOURCES****NOT EVIDENT**

The submission does not include both in-text citations and a reference list for sources that are quoted, paraphrased, or summarized.

**APPROACHING COMPETENCE**

The submission includes in-text citations for sources that are quoted, paraphrased, or summarized and a reference list; however, the citations or reference list is incomplete or inaccurate.

**COMPETENT**

The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

**F:PROFESSIONAL COMMUNICATION****NOT EVIDENT**

Content is unstructured, is disjointed, or contains pervasive errors in mechanics, usage, or grammar. Vocabulary or tone is unprofessional or distracts from the topic.

**APPROACHING COMPETENCE**

Content is poorly organized, is difficult to follow, or contains errors in mechanics, usage, or grammar that cause confusion. Terminology is misused or ineffective.

**COMPETENT**

Content reflects attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

## SUPPORTING DOCUMENTS

[Software Design Plan.docx](#)

[Background Information.pdf](#)