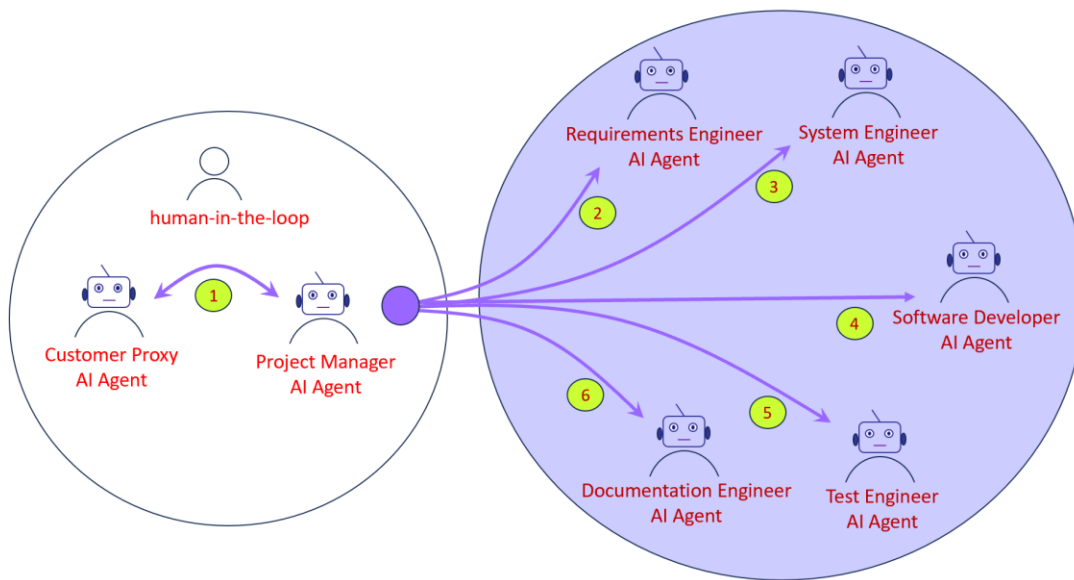


Final Project - Instructions

Author: Atef Bader, PhD

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Build a Virtual Team with AI Agents to Develop Software Project Plan



Overview and Topic Selection:

For your final project, you will create a project plan using GenAI technologies, libraries, and frameworks as discussed in the class. You will be creating a project plan for a selected software application from any of the following domains:

- Retail
- Financial
- Healthcare
- Manufacturing
- Energy
- Education
- Real Estate
- Food Services
- Transportation
- Insurance
- etc.

Project Phases:

1. **Phase_1:** Create Project Plan using **Waterfall** - traditional development
2. **Phase_2:** Create Project Plan using **Scrum** - agile iterative development

Phase_1

Scope, Sources, and References:

Assume that the traditional Waterfall development process to be used in planning and executing the different tasks of the project plan. There are 5 phases to consider for the development of the software project:

1. Requirements
2. Analysis/Design
3. Implementation
4. Testing
5. Documentation

You will be using GenAI platforms, technologies, frameworks, and libraries to create the project plan and estimates for the tasks.

First, the customer agent will send the problem statement to the project manager agent, for example, the customer will send a message similar to this:

I want to create a web-based mobile app for our pizza restaurant where my customers can place their orders online, pay online, track their orders, rate and review our service, and receive promotional offers from our business.

When the project manager agent receives the message from the customer agent, the project manager agent will send the requirements engineer agent a message similar to the following:

I have received the following message from a customer "I want to create a web-based mobile app for our pizza restaurant where my customers can place their orders online, pay online, track their orders, rate and review our service, and receive promotional offers from our business.", based on this message generate a list of detailed use-cases and requirements to develop such an application. Give every use-case a unique name and number and give every requirement for every use-case a unique number as well. Provide me with estimates about the productivity of the requirements engineer. How many use-cases and requirements can the engineer author and document every day/hour. What are the different tasks needed for the requirements phase? Include reviews and rework tasks in the list of tasks created.

When the project manager agent receives the response from the requirement engineer agent, the project manager agent will send the system engineer agent a message similar to the following:

I have received the following message from the customer agent "I want to create a web-based mobile app for our pizza restaurant where my customers can place their orders online, pay online, track their orders, rate and review our service, and receive promotional offers from our business." And I sent the message to the requirements engineer agent who gave me the detailed requirements document that has the complete list use-cases and requirements for every use-case. Based on the customer agent request, and the requirements engineer input, create a plan and estimate for the design. Provide me with estimates about the productivity of the system engineer. How many pages/ diagrams can the engineer author and document every day/hour. What are the different tasks needed for the design phase? Include reviews and rework in the list of tasks created for your plan.

Identify the group chat, sequences, tasks, activities, and estimates for all phases listed above for the proposed project. Include the software developer agent, test engineer agent, and the documentation engineer.

Analysis Report and Experimental Results:

Create an analysis report that discusses the output generated by GenAI/libraries/frameworks and your completed analysis about the accuracy and coherence of the generated output for the requested software project plan.

Analysis Report

- 10-15 PPT slides

Experimental Results

- 7-10 minutes Panopto Video Recording of a live demo of your Experimental Results.

Phase_2

In this phase you will repeat the steps and fine-tune the workflow that you have done in **Phase_1** using the traditional **Waterfall**, but considering **Scrum** for your generated project plan.

Research the **Scrum** to identify the relevant roles and responsibilities, including the development team members: Developers, Testers/Quality Assurance (QA) Engineers, Designers (UI/UX Designers), Business Analysts (BAs), DevOps Engineers, Architects, Scrum Master, Security Engineers, Technical Writers, etc.

Start your research/review about **Scrum** here:

- <https://www.scrum.org/resources/what-scrum-module>
- <https://www.atlassian.com/agile/scrum/roles>