**HW #4 Assignment (WBS)**

GK Posted Jan 2023

**Instructions:**

Your answers should be *direct and explained*. Show your calculations, formulas, logic you follow etc. Explanations do not have to be verbose; they should be just enough for the instructor and/or TA to understand what you are doing. 80% of the grade goes to the explanations and logic you follow and 20% goes to the result. *Correct result with no explanations gets zero points*.

Please respond with your own words and own understanding. Copying the answers without understanding them, defeats the purpose of this homework -- it violates the code of ethics and the integrity of the course.

* *If you are* ***suspected*** *of copying any part of your answers either from a classmate or a web site (without a reference link), you get a zero to the entire homework.*
* *If it is* ***proven*** *that you have copied or plagiarized, you will be reported to your advisor, your sponsor, and the School; serious consequences to your academic record and/or your student status should follow.*
* *This is applicable to both the giving student and the recipient student*.

For the problems/exercises, it is expected to use a spreadsheet (Excel) and/or your own drawing tool (PowerPoint, Visio, Drawsoft, etc) or make a neat drawing by hand. ***You must embed*** these assets into your WORD file with no external references, specifically for Excel. Unless the TA or I click-and-open the object to see your calculations, you will be missing points. *If you do not know how to do so, ask your colleagues, post the question to the Discussion Homework Area, ask our TA and/or ask me.*

Please use font Arial or Calibri of 9pts or 10pts.

DO NOT REMOVE THIS PAGE FROM YOUR SUBMISSION. Also, answer the questions below:

*How long did it take you to complete this homework? \_\_\_\_\_\_2\_\_\_\_\_\_\_\_\_ hours*

*How many hours did you work on your project this week? \_\_\_\_\_4\_\_\_\_\_\_ hours*

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## RACI, 12pts

Read the article [Understanding Responsibility Assignment Matrix (RACI) | project-management.com](https://project-management.com/understanding-responsibility-assignment-matrix-raci-matrix/) in its entity. Then answer the following questions:

1. (4pts) Why RACI is found to be redundant when following APM?
2. (4pts) How RACI helps communicating better in meetings?
3. (4pts) How RACI helps in composing emails?

### Answer

a.

the accountability, ownership, and ongoing communication is built into the scrum framework

b.

1. It tells what level of participation is needed from which persons or groups on each topic.

2. It helps to drive the distinction of who is critical for meetings and who is not.

c.

It helps teams manage their emails and their time by knowing where to focus their attention and work prioritization.

Reference: #The Benefits of a RACI - Communications and meeting planning

## **WBS, 14pts**

In the Common Module, there were posted several Project Reports as examples. Open the one titled “Auto-injector for Pain Free Meds”.

Consider the WBS of this project, and assume that the salary of a person is $8,000 per month.

Using this WBS, compute the cost of the project. You must explain how you derived this result – *zero credit if your explanations are insufficient or incorrect.*

Hints:

1. Copy the WBS in an Excel spreadsheet and do your calculations there.
2. Cost of task = people x duration x salary

### Answer

文本

中度可信度描述已自动生成

Written with markdown and LaTeX



## **Kickoff, 6pts**

1. (3pts) List three goals to be accomplished by kickoff meeting
2. (3pts) The following stakeholder(s) do not participate to the kickoff meeting

### Answer

a.

Determine team member

Decide scope

Find stakeholders

b.

## **CDC, 4pts**

Read the CDC Unified Process Practices document. Why CDC created this Template?

*Explain this by a couple of precise and complete sentence(s).*

### Answer

Because the template provides a norm to measure projects and evaluate their bids. It can help determine which projects or companies are worth funding.

## **Thinkers, 12pts**

Watch this 3min video about “Big Picture Thinkers vs. Detail Thinkers” in the context of Hierarchical Planning: <https://www.totalteambuilding.com.au/big-picture-versus-the-details/>

1. (4pts) “thinking detailed oriented … start by mapping down the \_\_\_\_\_\_\_\_\_\_\_\_\_”
2. (4pts) “…this the person when taking notes tends to highlight everything”. What type of thinkers does he refer to?
3. (4pts) “…they also are scattered and disorganized”. What type of thinkers does he refer to?

### Answer

a.

entire day 2:10

b.

Detail thinkers 1:03

c.

Big picture thinkers 0:26

## **COKE, 20pts**

**Your Objective**: to create a vending machine

**Project Requirements**:

* Only two types of drinks, COKE and SPRITE
* The machine will only accept quarters
* Cost of the drink is $2
* To include appropriate pushbuttons for selection
* Need to allow cancellation of the transaction

**Your Technical Approach:**

The vending machine is decomposed as follows:

* A display
* Internal dispensing mechanisms one for COKE and one for SPRITE
* A money slot to accept and recognize quarters
* Two pushbuttons one to the LEFT (for COKE) and one to the RIGHT (for SPRITE)
* A push-button to reject the transaction and return money back at any point

Draw a UML State Diagram showing how this vending machine works.

*Required:*

1. *identify the* ***States****, i.e. vending machine is waiting for something to happen*
2. *write one or more* ***Events****, that from one state it goes to another*
3. *indicated* ***Actions*** *taken as it transitions to the new state*.

*Draw State Diagram using a graphics tool of your choice (100% credit). Hand-drawn sketches are not preferred – if you do so, you will only get 50% credit*

### Answer:

Draw with mermaid in markdown editor

Source:

```Mermaid

stateDiagram-v2

standby --> active : Press start button

state is\_quarter <<choice>>

active --> is\_quarter : Put money in the slot

state reject\_0 <<choice>>

is\_quarter --> is\_quarter : Is not quarter, return unrecognized money

is\_quarter --> reject\_0 : Is quarter

reject\_0 --> return : Reject transaction

state balance\_status <<choice>>

reject\_0 --> balance\_status : Check balance

balance\_status --> is\_quarter : Balance < $2

state reject\_1 <<choice>>

balance\_status --> reject\_1 : Balance >= $2

reject\_1 --> return : Reject transaction

state choice <<choice>>

reject\_1 --> choice : Choose item

choice --> COKE : Press left button

choice --> SPRITE : Press right button

state has\_balance <<choice>>

COKE --> has\_balance

SPRITE --> has\_balance

has\_balance --> return : Balance > $0

has\_balance --> standby : Balance = $0

return --> standby : Return money

```

Result rendered:

图示

描述已自动生成

## **Agile, 12pts**

Watch this talk [(167) Waterfall vs Agile - YouTube](https://www.youtube.com/watch?v=uxGraDaPWhU) (<https://www.youtube.com/watch?v=uxGraDaPWhU>) that compares the Waterfall approach with the Agile approach. During the talk, Allia DeAngelis referred to:

1. (6pts) “…your fast feedback loops help you to \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ within any project”
2. (6pts) “…that agile mindset I will label as \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_”

### Answer

a.

pivot; adapt 2:48

b.

adaptable; highly collaborative 0:49

## **UML, 14pts**

Consider your own project.

* If the objective of your project to create a device with sensors, a Timing Diagram might be appropriate
* If the objective of your project to create a “process oriented” a UML Action Diagram might be appropriate
* If your project involves interactions between users and machines (or databases), a UML Sequence Diagram might be appropriate
* If you plan to make a machine or a complicated software, a State Diagram might be appropriate.
* Most likely your project might involve more than one of the above.

Then,

1. (2pts) Select ***ONE of the above most appropriate*** for your project. Explain you selected this tool vs. other
2. (8pts) Create the respective diagram using one of the tools referred in the Class. Cut-and-paste such diagram here. You may not draw it by hand and attach a picture.
3. (4pts) Explain the diagram to the reader by writing 3-4 complete sentences. You might also be requested to present this during Class#5.

### Answer

a.

Action Diagram since it is mainly process-oriented

b.

图表, 图示

描述已自动生成

c.

First, install the whole set of equipment with unit test and connect every components; Then configure the operating system and the server. Make image and distribute virtual machines to every employees. Keep maintaining the running status.

## **APM, 6pts**

A company follows APM for all projects. What would be the role of the PM in an agile team? i.e. what would the PM do for the team?

### Answer

Facilitator of the process units team and facilitates the team work.