



Statement and Confirmation of Own Work

Programme/Qualification name: L5DC

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Student declaration

I have read and understood NCC Education's Policy on Academic Dishonesty and Plagiarism.

I can confirm the following details:

Student ID/Registration number:

Name:

Centre Name: Unisoft IT LTD

Module Name: Agile Development

Module Leader: Dannis Mok

Number of words: 7011

I confirm that this is my own work and that I have not plagiarised any part of it. I have also noted the assessment criteria and pass mark for assignments.

Due Date: 21th February 2022

Student Signature:

Submitted Date: 19th February 2022

Task 1

Question:

As part of the pre-project phase, you have decided that DSDM is a suitable agile method to be used for this project. The business owners have never heard of DSDM or agile development prior to this project. You have been asked to provide some more detail to help them understand how this decision will impact the project.

a) Outline the EIGHT (8) agile principles for DSDM, for each principle provide ONE (1) example of how it can be fulfilled. (10 marks)

b) In addition, list TWO (2) Instrumental Success Factors (ISF) with a reason of why they should be met prior to beginning a project using the DSDM methodology. (10 marks)

Answer:

1a)

In this case, I have been appointed by Digital Phoenix to lead this transformation project for The Gud A'Tuinn Emporium to practice Agile. The 8 principles of DSDM (Dynamic Systems Development Method) and how it can be fulfilled are as follows:

1. Focus on the Business Need

In this case, regarding to the owners of The Gud A'Tuinn Emporium have indicated the requirements that has the order of importance of requirements, such as the 'must' - customers are able to set up their accounts, 'should' - website easy to use, 'would' - create a forum for building a healthy customers' community, as well as 'do not' - website too costly. These requirements are prioritised by the owners' demand that is credible to construct a MoSCow to analyse the business need.

2. Deliver on Time

In this case, a digital website that have proposed by the owners that enabling them update easily, as well as the setup of B2C sales with the condition of minimal loss of income to fee, this has a strong implication of the project finished on/before the deadline which is beneficial to the business since time is also a hidden cost of budget. The earlier the project has accomplished, the earlier the orders can be received.

Moreover, the set of MoSCow prioritisation of this business can frame a timebox in order to fulfill the owners' requirements by the order of importance.

3. Collaborate

In this case, The Gud A'Tuinn Emporium is a small business, the personnel are 4 entities formed a group that is perfectly suitable for Agile, those are Peter Doyle (the Joint Owner or Director), Ann Doyle (the Joint Owner or Director), Dirk Vaux (the Creative Director and Social Media Coordinator) and Rebecca Moulin (the Intern Associate). Their positions have their specific functions are relatively easy to collaborate in the business. In order to fulfill the principle of collaborate for DSDM, the group is advisable to have a daily short meeting (about 5 minutes) to communicate with each other, the discussion could be covered the improvement of their progress of work, suggestions on marketing, sales' ideas or any content in relation that put on the desk to discuss.

4. Never Compromise of Quality

The perfection of quality is not the priority for The Gud A'Tuinn Emporium, the cost of the budget, efficiency and user friendly (e.g.the website ease to use) are what this business mostly concerned. In addition, in this case, the owners have stated that the requirements including the order of 'must have', 'should have', 'would have' and 'won't have' which are constructed the formation of MoSCow. The project has a clear criteria that the imperfection - the quality of having defects is acceptable and allows modifying process. Therefore, the business team have to embrace the reasonable quality perhaps with defects as to fulfill the principle of 'never compromise of quality'.

5. Build Incrementally From Firm Foundations

To fulfil the principle of building incrementally from firm foundations, in this case for

instance, the business team is advisable to initiate the simple website application to examine the general feedback from the customers. Gradually, more details and improvement can be incrementally implemented. Analysis can be appropriately performed to assess the ongoing progress of project so as to conform the actions is echo with the users and customers on the firm foundation.

6. Develop Iteratively

Since Agile strongly requires the participation of project involvement of the users and DSDM team, the users including customers would have iterative feedback when using the website application from time to time, this is the force to generate and encourage the team to improve and develop iteratively their website application. Although the starting point is that the application is using with ease only, however from time to time, the team is inevitably listen to the feedback and continuously develop their performance of application in the consensus timebox, on a continuous basis.

7. Communicate Continuously and Clearly

In this business as case, the principle of 'communicate continuously and clearly' is emphasized on the communication on the directors and their fellows - the Creative Director and Social Media Coordinator and Intern Associate. Not only the mutual communication between the two directors is important, but also significantly the communication between them and their fellow staff members. As the fellows tend to have experience to the front line working environment and the directors tend to have a long term vision for the business, their ideas are contributable to the company. The continuous communication can contribute a considerable benefits to the project development and the business. Therefore, it is advantageous for the team to stage a meeting about 5 to 8 minutes daily to review the progress and process of their development, as well as the directors are advisable to willingly share and express their views to their fellows, and more importantly, an acceptable opened mind to receive reviews and mindfulness of equality.

8. Demonstrate Control

The accomplishment with the project timebox is significant in this dynamic system. In order to fulfill the principle of demonstrating control for DSDM in an practically effective order and

observing potential risks in this project, the team should initially compromise the DSDM, as well as should demonstrate the prioritisation to target accomplishment about 60% effort for 'must do' and 20% effort for "should do" within the limited timebox to promote efficiency, and a comprehensive remaining effort not necessarily about 20% for the "could do" and to strictly avoid 'do not do' because those are the obstacles of their path of efficiency. Moreover, the team have to accept retrospective step to refine the product.

Beside, the team should allow control about 80% accomplishment of the product. 'Perfect' is not necessary, the acceptance of the project with imperfection is in expectation, for example, in this case, the directors want the forum in the project that allows trades to take place, however, the output of the forum may not fully compatibly qualified to trades as what the owner wanted.

1b)

The Instrumental Success Factors (ISF) are important for the Agile team to meet before they initiate the project. According to the DSDM methodology, this is a credible foundation to prepare the project to be successful, a fruitful outcome. In this article, the 2 ISFs are listed to introduce. They are the factors of '**empowerment**' and secondly the factor of '**stability**' of the team.

The team needs to be entitled, and entitle appropriate **empowerment** to the team members. This is vital to ensure that the team members are empowered to decide on behalf of their positions and functions. The ISF empowerment dose not imply the full entitle of free empowerment, but appropriate empowerment to assure a good decisions with the minimal hindrance.

In this case, for instance, Dirk Vaux is the Creative Director and Social Media Coordinator on behalf of The Gud A'Tuinn Emporium, this position duties include developing and executing customers' social media, and planning strategies of marketing, mainly likely to assume a great part development of the website.

In the position of 'the Creative Director and Social Media Coordinator', Dirk Vaux ought to assume the daily marketing strategies for the business, actually those are the

challengeable tasks which require most creative and sensitive mindset, who should be entitled an appropriate certain extent of empowerment from the owners without referral to them to make the strategies effectively and feasibly to be manifested.

DSDM project is highly concentrated on the on-time delivery and effective completion. The procrastination by only waiting a decision approval from the owners causing the delay is problematic and risky to the agreement of timebox.

If Dirk Vaux is empowered to make marketing decision based on his expertise and experience, an empowerment is granted for him to perform and test his strategies and accomplished them in the timebox. The business could have effective improvement and a good business project progression speed.

Whereas, if Dirk Vaux is not entitled the appropriate empowerment, in a restrained condition, his contribution could be strictly limited, then the team could be procrastinated for waiting decisions from only the owners' perspective and approval, the progression of project could be dragged at a different timeline or cannot finish in the timebox. Other than that, the outcome of the final project effect could not reach the satisfaction as the team anticipation.

Therefore, the ISF empowerment is significantly to meet before the team starting their project, empowerment is an agreement of certain extension for the team members who may make decisions for the project themselves but should abide by the business scope which cannot be altered.

On the other hand, **stability of the Agile team** is also importantly prior to beginning the project. It is significant to sustain the team morale and collaboration until the project is fully accomplished. Stability of the team requires not easily swapping or changing team members in and out for an agreed period of time in order to stabilise the project at a state of iterative incremental development and ensure a credible concrete collaboration.

In this company - The Gud A'Tuinn Emporium as a circumstance of importance of stability, the totality of the team members in this company are ideally small team for the effective optimum size. And to presume each member has specific functions and roles for the

project, and their qualifications fit for this project. Besides, the information exchange on the project is mainly self directly by a discussion on face to face meeting daily, with less adoption of official notice and documents. To effectively complete the project, the team is necessary to avoid their members splitting and swapping the team, it could be inconveniently an extra burden cost to hire a new member to continue the progress to replace a particular previous member.

For example, if Dirk Vaux was a participant of the team resigned from The Gud A'Tuinn Emporium to take another job in the middle of the project progression, the team inevitably have to employ a new member to follow up his duties. Those are assumed to be including pile of works of graphic design, coordinating social strategies with customers as well as to follow up the customers' feedback. There is a risk that the new member could not be able to pick up and follow up majority of progression that the previous member has reached. In addition, the team have to offer the new member an extra sufficient time to adjust the working environment and dynamic progression. As a result, it could bring an impact on the principle of 'Deliver on Time'. Hence, the team stability is one of the critical ISF.

Task 2

Question:

The project has moved forward into the feasibility / foundation phases. You are looking to complete the Feasibility Study and Business Study. Key elements such as project risk, time estimations are discussed before any major project work is undertaken. You set up Facilitated Workshops in order to move the project forward.

- a) Explain what a Facilitated Workshop is with details of how it might run along with a brief outline of the Facilitator and Scribe roles. (10 marks)

- b) A risk log can be used to record and manage risk within an agile project. Explain how a risk log helps to manage risk. Provide an example risk log relating to the scenario to aid your explanation and discuss how the use of the PAQ (Project Approach Questionnaire) might help reduce risk early in the project. (10 marks)

Answer:

2a)

A 'Facilitated Workshop' is an interactive technique that adopt a project team including owners and participants together to gather ideas and information, to exchange their views, to suggest and discuss some issues they are deciding to do, to resolve the potential and underlying problems, as well as to define and clarify some requirements for producing the the final version. The ideal situation via the facilitated workshop is to reconcile the individual differences and eventually reach a consensus.

A good qualified facilitated workshop can effectively lead and harmonise a project team forming a good team work collaboration experience, making quality-guaranteed decisions, clarifying the details without splitting opinions. A competent facilitator who needs to prepare and educate before the facilitated workshop is vital.

As the role of a **facilitator**, it is essential to understand the role of a facilitator is individually

neutral without judgement on issues during the discussion, who has no bias and personal opinions, who is not in the team but back up the team, from observing the process, ensure the entire smoothness when running the workshop, as well as not dedicating ideas or making decisions for the project. The facilitator targets to plan events, build a fair expressive discussion environment/atmosphere, assist the team to brain storm their minds together. The facilitator responsible for ensuring that each team mate can share sufficient and contributable information enough equally for the discussion process. And finally ideally reaching mutual understanding and consensus. A quality facilitator enables team participants to collaboratively generate their best quality communication, solution and decision. The long term benefit for the team of using the facilitator is fostering the team collaboration and cultivating the team mate to have good eye respect each other's good side.

As the role of a **scribe** who is responsible for producing visual records from the output of the team discussed from the facilitated workshop. The functions of the scribe in the facilitated workshop is listening attentively to the participants' conversation and capture their point of views and main ideas from the discussion, then producing a visual readable and viewable record for the team to review after the discussion. A good scribe ought to be neutral and able to listen patiently to the speakers. Since the discussion from the workshop is a dynamic process, starting from the project proposal, to the decision has been made, until the manifestation of the product, every participant could not have a strong memory to keep all ideas and content in mind through the journey of discussions from workshops. The scribe is very helpful to put some essential information from the facilitated workshop, black and write documented visually for all participants to review afterward the event.

Answer:

2b)

A risk log is a tool to register risk which can be as a form of scripts, table, spreadsheet, document or excel to regularly track, record, identify and estimate details and level of risks in projects, as well as evaluate the pre-actions to be taken to handle the risk in order to help managing them.

According to Kim Heldman (2013), it is significant to the minimal risk to reach a successful project management. A risk log usually contains series of factors and each factor has its function:

A Risk ID - this is an ID which is useful to identify a series of risks;

Date - date of occurrence;

Risk Description - a structured description that includes the risks' conditions and consequences;

The Risk Likelihood - the probability of the risk could happen;

Impact - grades of impact from very low to very high;

Severity - colour red, amber and green regarding to the seriousness of severity;

Owner - who is responsible for managing the risk;

Mitigating Action - an action to be taken in advance to alleviate the risk;

Contingent Action - an action to be taken in the circumstance that the disruptions occur;

Progression of Action - any actions have been taken regarding to the risk;

Status - the condition about open or close the risk log task

As how the risk log helps to manage the risk, for instance, in this company the team chose AWS for hosting, one of the reason is that this is a leading cloud world wide, acceptable budget, flexible to use and solutions are easy to resort. The team intends their good products are extendable internationally. However afterward, a potential risk is identified as the difficulty of manipulating AWS, Dirk Vaux is the one who follows up this issue. The first step of risk management is to identify the risk, then to estimate the impact of risk and document the risk from the lists of ID to owner.

Subsequently, the following up issues include mitigating action to tackle the potential risk are created, then executing the action to resolve it. The contingent action is also prepare for a disruptive circumstance, **for example a risk log relating to the scenario of The Gud A'Tuinn Emporium:**

ID	Date	Description	Likelihood	Impact	Severity	Owner	Mitigating Action	Contingent Action	Progression of Action	Status
1	1/1/2022	Inadequate proficiency by unfamiliarity to manipulate AWS results potential scheduling problem	High	Medium		Dirk Vaux	Booking more workshops via more discussions to have a thorough understanding of the issue	Consult AWS expertise	2/1/2022 Mitigating Action has started	Open

After the mitigating action has been implemented, the team have a more interpretive understanding to the manipulation. Dirk Vaux received many useful suggestions. The list of the progression of action is used to state the action which has been taken for the team to review.

ID	Date	Description	Likelihood	Impact	Severity	Owner	Mitigating Action	Contingent Action	Progression of Action	Status
1	1/1/2022	Inadequate proficiency by unfamiliarity to manipulate AWS	High	Medium		Dirk Vaux	Booking more workshops via more discussions to have a	Consult AWS expertise	2/1/2022 Mitigating Action has started	Open

		results in potential scheduling problem					thorough understanding of the issue			
2	2/1/2022	A risk that the website may not be finished on due date results in scheduling problem	Medium	Medium		Ann Doyle	Rebecca Moulin carries out part of the website development	Give up the "could do"	3/1/2022 Mitigating Action has started	Open

As the above example, Ann Doyle identifies and she is accountable for the risk that is regarding the website may not be completed on time. For the project going onward, there are more risks discovery may be continuously generated, the grades of the project risks are not equivalent though, some sort of risks are not serious that do not require immediate treatment but several risks can bring tremendous impact to the business. Prioritisation is the technique which is still necessary to be adopted to handle risks. Filtering, arranging the urgency and prioritising the risks of projects are inevitable.

Agile Business Consortium has released the **PAQ (Project Approach Questionnaire)** for referencing the core values evaluated by the participants at the initial stage of the project:

Project Approach Questionnaire (PAQ)



Project:							Name:
Date:							Position:
		<i>Indicate the closest collective opinion</i>					<i>Where appropriate, comment on issues or risks related to a more negative response to this aspect of the DSDM approach</i>
Ref	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1	All members of the project understand and accept the DSDM approach (Philosophy, Principles and Practices)						
2	The Business Sponsor and the Business Visionary demonstrate clear and proactive ownership of the project.						
3	The business vision driving the project is clearly stated and understood by all members of the project team						
4	All project participants understand and accept that on-time delivery of an acceptable solution is the primary measure of success for the project						
5	The requirements can be prioritised and there is confidence that cost and time commitments can be met by flexing the scope of what's delivered.						

Image adopted from The PAQ (Project Approach Questionnaire) (2016). Agile Business Consortium.
https://www.agilebusiness.org/page/ProjectFramework_19_AppendixBProjectApproachQuestionnaire

The PAQ is a questionnaire which contains 17 statements related to DSDM approach including philosophy, vision and practices for the owners, managers and the related team participants to fill in their opinions. The PAQ has a certain extent power to help reduce the risk at the initial stage of the project. The participants have the options to choose the lists from 5 degrees - strongly agree to strongly disagree, for each statement based on their individual and personal judgement.

If the collective opinions tend to opt mainly dimensional green - strongly agree to agree, the team can commit agile and prioritisation management, then this is a sign of comparatively low risk probability occurrence, risks could not frequently happened or risk is comparatively easy to be managed in the project and the company is suitable for DSDM approach since they already have a mutual consensus agreement at the feasibility phase.

Nevertheless, If the participants prompt to fill in disagree to strongly disagree, or they fully compromise the quality of the products, then this is an implication that the culture of company is not suitable for DSDM approach and the team has a high probability of risks occurrence during the project, risks may intensively frequent to occur, or risks are bloody hard to handle. A difficult project dose not mean a

challengeable project. Hence, it would be more advantageous to avoid the approach so as to avoid the meaningless risks, or to consider waterfall model. Therefore, the PAQ is important for help reducing risks at the feasibility phase of the project.

Task 3

Question:

The workshops are going well, and the project requirements are being explored, recorded and developed into user stories. Estimation and planning are an important part of any agile project and there are a number of tools and techniques that can be used to ensure the project is planned correctly.

- Research the agile planning technique called 'Planning Poker'. Outline how this technique could be used in a workshop and suggest what roles should be involved in the process.
- Justify why estimations would be better formed as a group rather than just individual perspective.
- Identify what technique can be used to scale priority of requirements and how it is used in agile planning.

Answer:

3)

The '**Planning Poker**' is a technique that used by a team to estimate the time, value, effort or even any measurable things the team will put into manifesting the discussed product and eventually may reach a consensus discussion outcome. With an open-minded atmosphere to share ideas, this is a very useful technique when an estimation is committed by a team players and not by an individual expertise.

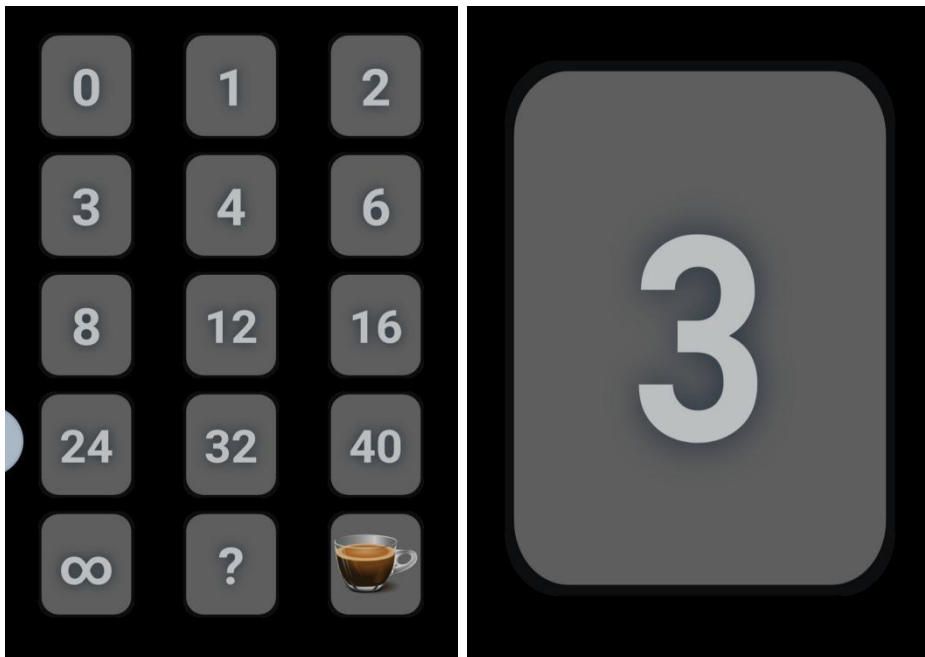


Image adopted from artArmin.(2011). Scrum Poker Cards (Agile) (Version 2.8.2) [Mobile app].

<https://play.google.com/store/apps/details?id=artarmin.android.scrum.poker>

So, how this technique can be **used in a workshop?**

This technique can be used in the workshop in the meeting room, or a network virtual room, for example, an owner expressed to the project team about going to release a product, a new function or a 'user experience' who intends to presents to customers. After the team finished listening the talk from the product owner and the owner had answered some questions raised from the team members, before they start to set up a project and execute it, each team member has cards to estimate how much effort (e.g. time) to be devoted into the project.

If the estimation is regarding to the time they need to pay, the numbers of cards in their hands are related to time. To initiate the estimation, each member reveals a card one by one to the team. If the number they show to the team are accordingly same, then the estimation reached the consensus. However, if the numbers they reveal are different, the two members who estimate the longest time and the shortest time will be invited to explain their reasons for estimation. After the explanation, the team do the estimation again, or even again, and explanation, until they have the coordinate numbers and eventually reach consensus.

In this business, for example, the **roles** who should involve in the process are Peter Doyle and Ann Doyle, they are the joint owners and directors of the company, as well as Dirk Vaux who is the Creative Director and Social Media Coordinator of the company, their ideas and points of views are important

for the project.

Moreover, why making **estimations** would be better to form as a group rather than individual?

During the process of an **estimation**, forming as a group to estimate a project would be more advantageous than the individual perspective, there are 4 reasons for this are as follows:

A group of members could produce a comparatively adequate and sufficient information to perform an estimation, when each individual has his/her own channels of acquiring knowledge, more people to form as a group could have multiple channels and sources of information to gather and exchange rather than a person does.

Besides, a group is easily to produce diversity of suggestions and views, where their points of views are unique and useful, with more diversifying angles to estimate a project is more open-minded and realistic. More importantly, this can avoid the excessively optimistic or pessimistic estimation.

Other than that, a group of members could be more efficient to do estimation because of synergism that the contribution of group greater than that individual does.

And the fourth reason is the broaden acceptance of an estimation to do a project, more successful the project would be produced since lesser hindrance and lesser rejection, the estimation is widely accepted by different individuals before they practically to execute the project.

MoSCoW is the technique which is common to scaling priority of requirements within an agreement of timebox and this represents a project requirements regarding to 'must have', 'should have', 'could have' and 'won't have', the team players ought to accordingly abide by the rules they set for MoSCoW planning.

In agile planning, **MoSCoW**, to use this business as an example, the team plan about 60% to 70% effort for 'must have' requirement which is the most important thing for the project - the website must let their customers who can input personal and payment information for creating orders and set up their accounts, this is the first thing to do; and 20% effort for the team contributing to 'should have' which is the second most important thing for the project and should be included in the website - let their customers use their own emails as the guest checkout to purchase items so as to collect emails from

worldwide for marketing purposes; about 20% for the “could have’ which is not important but if the ‘must’ and ‘should’ are finished according to the timebox and still have sufficient time for development, ‘could have’ is also required to do so - the owner would have a forum that their trades could take place there, the forum acts as a tool to build a harmonic community of their customers. On the other hand, the ‘won’t have’ is not the issue that the project wants to have - in this business, for example, the owners requires hosting the website which cannot be costly, there is a limitation for the agreement of budget not to be exceeded.

Task 4

Question:

As the project moves towards the development of a functional model, you have called a workshop to discuss the more complex element of the new system, how customers will purchase a 3D model from the website.

Produce an Activity Diagram demonstrating your proposed flow of a new customer purchasing a 3D model without any bespoke requirements. You must provide notes of any assumptions made in the diagram and describe ONE (1) example of another UML diagram that could be used to help detail the new solution.

Answer:

4)

The Activity Diagram describes the process of a new customer purchasing a 3D model are as follows:

Initially, the Basic Functions of the application are presumed before producing the activity diagram:

- Browsing items
- Customers - to create accounts, login/logout
- Guests - to leave their emails for marketing purpose
- Add shopping cart
- Adjust 3D model
- Payment
- Forum

The factors related to the website are presumed to be:

- The new customer
- The website
- Shopping cart
- 3D model items
- Credit card payment

In this case as the business owner require: the website should allow customers to purchase an item using a guest checkout using simply their email address

The assumptions of a new customer purchasing a 3D model made in the diagram:

Scene 1 Flow:

A new customer register and login an account

1. login

2. surf the website and view the items
3. click to the item and view the page of item details
4. add to the shopping cart
5. review the list of added items in the shopping cart
6. adjust the size, colour and quantity of items
7. click order
8. provide and confirm payment and shipping information
9. click purchase
10. payment
11. Authorise payment
12. confirm payment
13. receive confirmation and receipt via Email

Scene 2 Flow:

A new customer just leave an email to purchase the 3D model

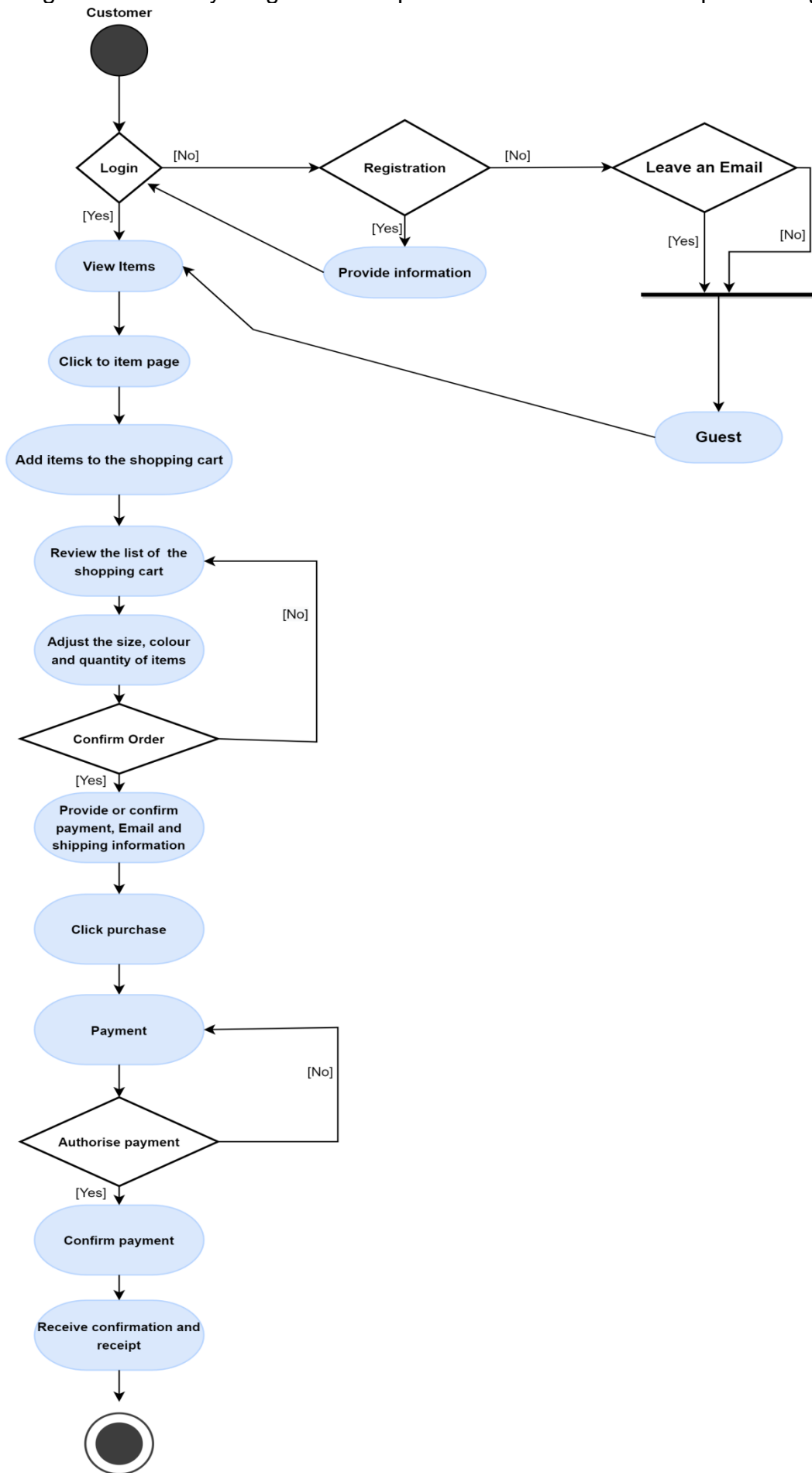
1. as guest - just leave an email
2. surf the website and view the products
3. click to the item and view the page of item details
4. add to the shopping cart
5. review the list of added items in the shopping cart
6. adjust the size, colour and quantity of items
7. click order
8. provide personal information
9. provide and confirm payment and shipping information
10. click purchase
11. payment
12. Authorise payment
13. confirm payment
14. receive confirmation and receipt via Email

Scene 3 Flow:

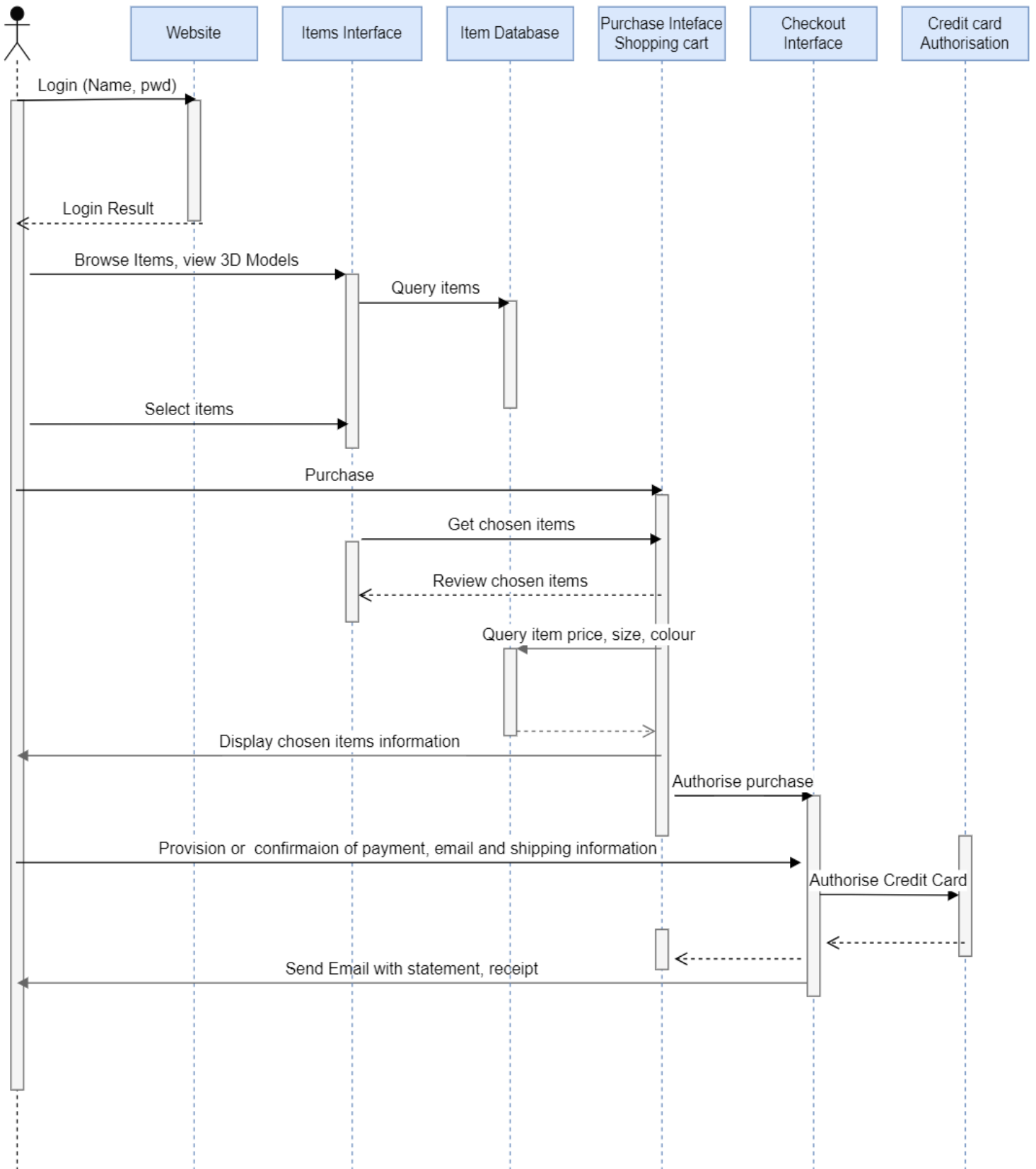
A new customer initially don't leave an email and do it later on

4. as guest - don't leave an email
5. surf the website and view the products
6. click to the item and view the page of item details
4. add to the shopping cart
5. review the list of added items in the shopping cart
6. adjust the size, colour and quantity of items
7. click order
8. provide personal information and Email
9. provide and confirm payment and shipping information
10. click purchase
11. payment
12. Authorise payment
13. confirm payment
14. receive confirmation and receipt via Email

The following image is the Activity Diagram of the process of a new customer purchasing a 3D model:



The following image is another **UML Sequence Diagram** to help detail of the process of a new customer purchasing a 3D model. With time goes by (downward), the actions of a customer have been coming across the website login, items interface, database, shopping cart, checkout and credit card authorisation:



Task 5

Question:

The owners want to be involved as much as possible to help shape the system to ensure it suits their needs.

- a) The project is now looking to develop a series of prototypes. Explain THREE (3) prototyping perspectives making clear the purpose of each perspective.
- b) Outline TWO (2) development strategies. For each strategy discuss the type of project for which they are most suitable and how it may impact the structure or focus of timeboxes.

Answer:

5a)

Prototyping is the process of iterative development of manifestation of the final version of a product/ application/ software. The prototype could be served as the early versions of the product, which is imperfect and has defects. The prototype has an evolutionary stage/ period that requires feedback from users, testing, as well as continuously learning the technology and studying to find out solutions so as to further improving the prototype. In this business for example, an incomplete version of the website for selling the 3D models is a prototype.

The iterative development is to separate the project into the segments which have incremental mission applied on between the segments. This dynamic project development may require a series of repeated tests, plan, evolution, innovation, debug and interface revision from the segment to the next segment, incrementally, in the life cycle of the project, on a continuous basis, limiting in the short period of time to finish, until the final version of product is fully accomplished.

There are 3 prototyping perspectives: Functional, usability and non-functional prototyping perspectives.

Functionality

The purpose of functional perspective targets to the functions that ensure to the right and correct direction of project development. The user requirements are significant for the developers to understand with clarity. The developers are expected to be able to demonstrate clearly the

requirements of the functionality to the final version to the users. This perspective is crucial for the developers have a true understandable interpretation of the functions of prototype and those can be presented to the users.

The functional perspective is not aimed at the visual interface production. Cool visualisation, beautifully sophisticated design, speed or friendly to use are not the goals of this functional perspective. The requirements of the functional prototype is which can be fully satisfied mainly and corely the functions truthfully demanded from the business and users. This is related to the basic ability and capability. In this business, for example, the functionality of the website is able to display 3D model items to customers, the customers can create accounts, login/logout, add items into the shopping carts, adjust items list, payment, a function for the guests to leave their emails for marketing advertisement.

Reviewing the life cycle of the project, the functional perspective is commonly demonstrated at the initial stage and feasibility phase of the project. The prototype can be demonstrated by scripts or talk so that the parts of the misunderstandings may be modified. The demonstration of the basic functions of prototype firstly disclosed to the users, subsequently with more functional requirements the users respond to correct the misunderstandings and more learning of feasibility study from developers, the functionality will reveal more details and improvement. For the developers, the most important thing of this phase is to ensure the orientation of prototype functions is right, suitable and correct for the business and users.

Usability

The purpose of usability perspective targets to the product be 'usable' that ensure the means of use is easy to handle, particularly a clearly instructional interface for users. A good usability can make users understand the functionality of the features on the prototype quickly. This is the perspective that aims at testing the user approachable and visible sides of the project. Upon the prototype of functionality, the user experience is significant for the stage of this usability perspective. If the user test represents user experience is instinctively usable, that is the users can use the functions via the interface in efficiency and the interface which let the users clearly understand how to use them, without much cost to teach them, then it implies that the usability prototyping is going well.

An effective usability prototype represents an efficient interaction between the product and the users. To check if the users can instinctively manipulate the functions via the use of the interface. In this business, for instance, the users are customers and the business owners and their partners, the

customers can instinctively recognise and identify the locations of specific items easily from the intelligent interface of the product, they know how to create accounts, the way to enter their data, use the shopping carts and finish payment smoothly according to the flow of the website design.

If the functionality is satisfied to the needs of the users but the use of the prototype is difficult, complicated and is not realistically practical to manipulate, that could lead the users cannot achieve the destination of purpose, then there is a room to necessarily improve the usability prototype or otherwise a potential risk that the usability is unable to progress to the final version to users.

Based on the life cycle of the project, the usability perspective is advantageous to stage at the initial design of the iteration of functionality prototype. The early phase of usability is just simply built as an assistance of combination to check the functionality of the product is right, that could be served as a conformation and guarantee that the directions of functionality is going right to the final version. The detailed design of usability may be develop through the innovative increment and iteration of the project subsequently from time to time, on a continuous basis.

Non-Functional Perspective

The purpose of non-functional perspective targets to the performance of the prototype. This is not the most necessary part to build the prototype and not alter the functionality. Relating to the non-functional sides, the perspective has a strong relation dealing with speed, storage, capacity, network security and technical issues.

For instance, in this business, in order to review the performance of the website in different scenarios, identify the risk and problems on non-functional perspective and to rectify them, the developers may test the speed of transaction and loading of data, the qualification of security of the website via multi-various computers, phones, ipads or other applications, some problems may appealed and the developers should find the solutions, the tests could be repeated through the journey of the project development, to the modification of the non-functional prototype, and to the release of the final version.

In the life cycle of the project, the usability perspective is commonly staged at the manifestation when the fundamental functionality of the prototype has been made. The functional perspective should appeal first with even simple usable interface and subsequently the non-functional aspects were built dependently.

5b)

The 2 development strategies are the approaches of **vertical and horizontal** development strategies.

The **vertical** approach requires the evolution developed straightly up and down in a timebox. The project are divided into 4 to 5 solution layers which contain the process, model, interface, data, database and so on are in one within a timebox. The vertical approach may evolved all partial layers in a timebox and the subsequent vertical movement. Starting from the foundation of functional prototype, the development may have scaling additional features and functions to the existing prototype within the timebox.

The type of project that is suitable for the vertical approach is the applications software development project such as the chatting application project where more functions like QR code scanning, payment, file sharing may be added according to the user feedback, and the functionality prototype can be tested by users and undergoing phases of modifications enhancement, maintenance and re-edition.

So, how this may **impact** the structure or focus of a project timebox?

The **impact** may be the timebox could be structurally lengthening, and the quality submitted to the users could not be the satisfactory one for their requirements since the vertical evolutionary movement remains the rooms to further improve the project where the timebox could be lengthen. The development team and users could have to accept the imperfect and defects in the functionality. But this approach is more ideal to submit the outcome to users on time since every solution layer is inclusively attached to the outcome.

On the other hand, the **horizontal** approach is to develop the project like parallel to plane by plane. That is, if there are 4 solution layers in the project development, every layer is on a horizon of a timebox, the interface is on a horizon of a timebox, and the database is on a horizon of another timebox. More timeboxes may be prepared for futher development of the project.

The type of project that is suitable for the **horizontal** approach is typical - the civil engineering and construction project, or the building and renovation project. From the architectural design to the civil construction in progress, until the project was in completion, and the renovation work to develop. The development approach is necessary to be horizontally developed from a timebox to the next timebox.

So, how this may **impact** the structure or focus of a project timebox?

As the **impact** on the timeboxes is that there could be many excessive timeboxes developed in the project, a timebox to the subsequent timebox on a continuous basis, until the final stage. And the functionality prototype could not be tested by users. The prototype has no room to be tested also in the middle by the users according to the horizontal approach so that the outcome submitted to the users is the final version of the project, like the final version of the construction work, the railway system, building or bridge.

Task 6

Question:

Using the Rolfe, G., Freshwater, D. and Jasper, M. (2001) model, critically review the learning that you have undertaken in order to complete this assignment.

Based upon your learning, your reflection should include a description; an analysis; and an action plan in order to bring about improvements in the future.

Answer:

6)

According to Gary Rolfe and others (2001) who describe a useful framework for self-reflection, I use the framework to reflect this assignment I have been going through:

What?

The starting point is this assignment introduced a situation of the British company - The Gud A'Tuinn Emporium. Through the situation has extended the tasks which are related to the aspects I have learnt and acquired are agile principles for DSDM, the ISF to lead the project success, the risk log to handle the risks, the PAQ, the planning poker, the advantages of group estimation, MoSCoW, the activity diagram, the sequence diagram, the prototyping perspectives and the evolutionary vertical and horizontal development approaches to help the company survive. These aspects are not only the knowledge on textbook, but also they are practical and useful to apply on operating a small company. I find it is not easy to handle task 4 the diagrams.

So what?

In the process of solving the problems on the tasks, particularly on task 4, I created the Activity diagram and the sequence diagram via the tool Draw.io, and I watched some youtubers showing how they manage to draw these diagrams with ideas before they develop a software, certainly they are more complicated and mine is the easy one. Thankfully after the completion I have developed a more

clear picture and logic sense on how a user approach to the interfaces of an application in a timely manner. Afterward, for other machines, applications and software, this technique equipped me with a new analytical eye to see the interactions between those and the users.

Now what?

After I finished this assignment, I further understand the standard of Agile and DSDM Methodology. I recognised that many companies in Hong Kong have adoption to the 'shadow' Agile but the practical situation and atmosphere are not clearly identify, and part of them based on Agile but with many alterations. And even though I have been involved in an Agile project in a company but I didn't recognise because no others have mentioned such a methodology. Agile is not only can practice on software development project, but also the publishing, education field and many others. Using Agile is advantageous and wise to increase teamwork quantity and raise the team morale, in a short period of time, with less but efficient supervision, as well as this is a saving cost method especially for the small business. This is the subject that I can review on the society practically.

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