

Software Engineering

Essence Based report

Team Members:

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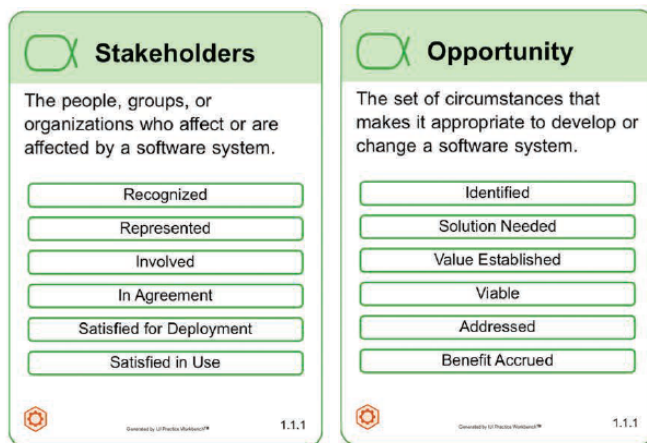
Course Project : Inventory Management Application with focus on institute sports complex

Defining Elements of the essence language for the project

Alphas

From perspective of the customer area of concern

Alpha and their alpha states



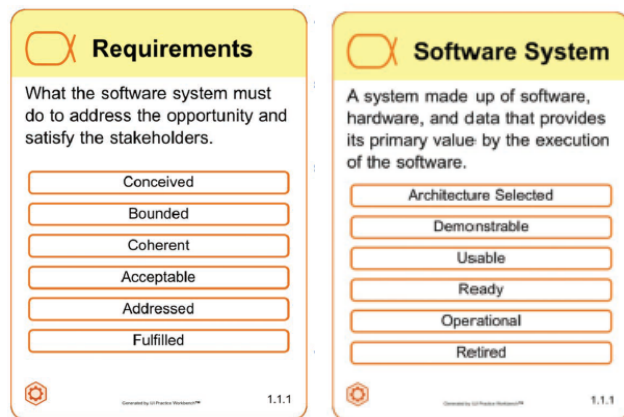
Stakeholders: stakeholders in our project are institute\hostel\sports society administration (client) , development team (abhijeet , aditya) and students who would issue and return .

Opportunity : The following problem acted as opportunity to deliver a software solution

Currently, in our and many other institutes, issuing of sports equipment by students is done manually and details are stored in registers. There is no automation in the process which leads to inefficiencies. Students sometimes bypass and do not register themselves before issuing or guards misplace the registers storing the issuing details. Also, no strict action is taken for damaging/misplacing equipment. Availability of a secured sports inventory management software would allow automating tasks like adding dues if returned late or fine if the equipment is damaged, fast retrieval of information like inventory details, issuing details, and adding features like allow issuing only if students have no dues/

From perspective of the solution area of concern

Alpha and their alpha states



Requirements : The specific requirement of the software system is to create a software that automates the process of issuing/returning and check availability of items from inventory , monitoring student dues or damaged items and keeping a record of inventory items used by sports facilities such as training centers, gymnasiums, stadiums, sports federations, universities or hostels.

Software system : The final application made to satisfy the requirements is the software system .

From perspective of the Endeavor area of concern

Alpha and their alpha states



Work : The team (abhijeet , aditya) has to prepare a software system to deliver a working demo of the application as the software engineering project .

Team: The development team comprises of Abhijeet , Aditya in which both are familiar with c++/c while abhijeet is familiar with mysql.

Way of Working : The essence kernel will be used to evaluate the project progress and health . Some practices used would be : waterfall software process model , object oriented programming with modules where each module serves a specific functionality , unit testing ,blackbox testing etc.

Work product

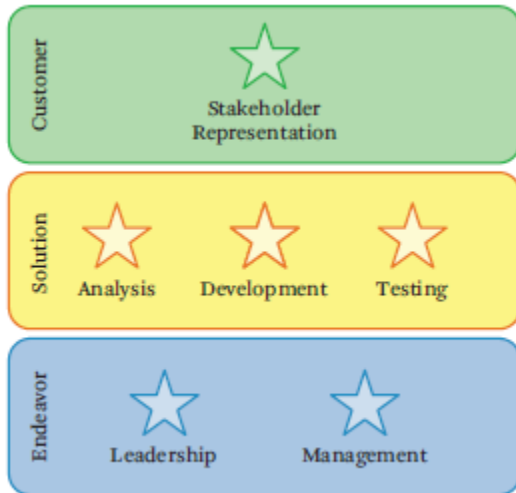
The work product for the following project

1. **Final Application :** Final application that satisfy the user requirements and stakeholders need is the only work product considered
Describes - software system alpha
states/level of details : SRS and design document made
Code written
Executable created
Deployed

Competencies

The following competencies are required for the project :

A self assessment is done by the team (Abhijeet , Aditya) to decide the state of each competency they are in currently. The standard essence language competencies state cards and chasing the state game is played to decide which state the team is in .



From perspective of the customer area of concern

Competencies


Current level of competency of the team

The image shows two cards for the 'Stakeholder Representation' competency. The left card is a progression chart with five levels: 'Innovates', 'Adapts', 'Masters', 'Applies', and 'Assists', each with a green star icon. The right card is a checklist titled 'Applies' with five items, each preceded by a checkbox. The items are: 'Is able to collaborate with others within the Team.', 'Is able to satisfy routine demands and simple work requirements.', 'Can handle simple challenges with confidence.', 'Can handle simple work requirements but needs help in handling any complications or difficulties.', and 'Is able to reason about the context and draw sensible conclusions.' Both cards have a green header with a star icon and the title 'Stakeholder Representation'. The right card also has a green progress bar showing '2 / 5'.

From perspective of the solution area of concern

Competencies

Current level of competency of the team

 **Analysis**

The ability to understand opportunities and their related stakeholder needs, and transform them into an agreed and consistent set of requirements.



Innovates


Adapts

Masters

Applies

Assists





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 **Analysis**

Adapts

- ☐ Is able to satisfy complex demands and work requirements.
- ☐ Is able to communicate with others working outside the domain.
- ☐ Can direct and help others working within the domain.
- ☐ Is able to adapt his or her way-of-working to work well with others, both inside and outside their domain.

4 / 5



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 **Development**

The ability to design and program effective software systems following the standards and norms agreed by the team.



Innovates


Adapts

Masters

Applies

Assists





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 **Development**

Masters

- ☐ Is able to satisfy most demands and work requirements.
- ☐ Is able to speak the domain language with ease and accuracy.
- ☐ Is able to communicate and explain his or her work.
- ☐ Is able to communicate and explain his or her work.
- ☐ Knows the limits of his or her capability and when to call on more expert advice.
- ☐ Works at a professional level with little or no guidance.

3 / 5



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 **Testing**

The ability to test a system, verifying that it is usable and that it meets the requirements.



Innovates


Adapts

Masters

Applies

Assists





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 **Testing**

Assists

- ☐ Understands and conducts his or her self in a professional manner.
- ☐ Is able to correctly respond to basic questions within his or her domain.
- ☐ Is able to perform most basic functions within the domain.
- ☐ Can follow instructions and complete basic tasks.

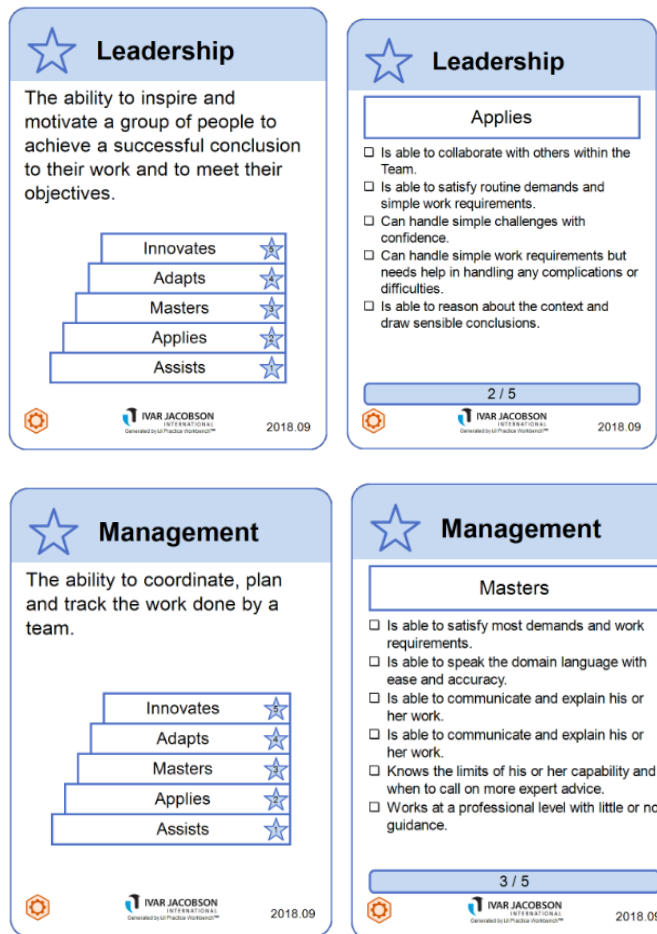
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From perspective of the work area of concern

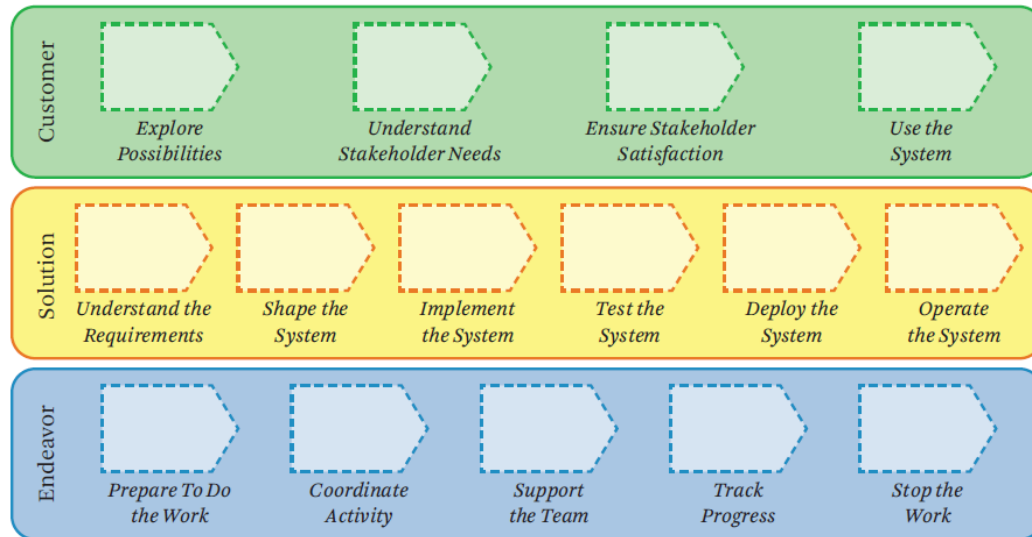
Competencies

Current level of competency of the team

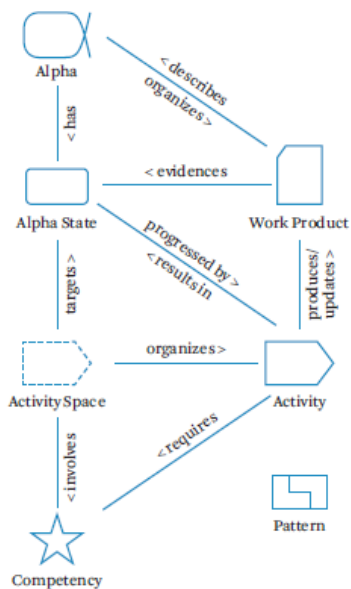


Activity Spaces and Activity

The following diagram shows the activity spaces for each area of concern in the essence language : Since the project is small hence the activities are not explicitly defined using kernel but rather the kernel and essence language would help to decide the activities at every phase that needs to be done in order to progress to the next phase.



The overall relationship between the various essence elements



Creating Checkpoints for the project progress

It was decided to create 2 checkpoints for the project

1. Ready for development
2. Development is complete

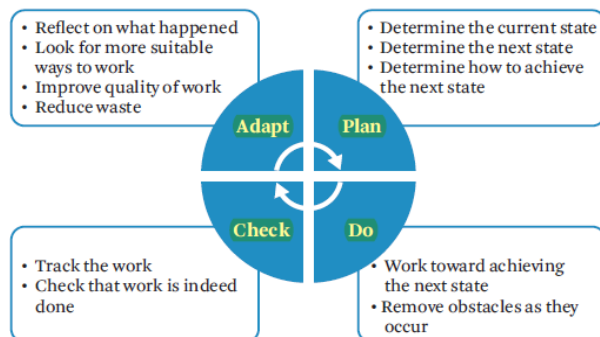
Chase the state game was played among the team (Aditya and abhijeet) where for each checkpoint , state of each of the seven alphas that need to be achieved in order for the checkpoint to complete , were decided .

1. **Ready for development** - states need to be achieved
 - Stakeholders - represented
 - Opportunity - viable
 - Requirement - acceptable
 - Software system - architectural
 - Work - prepared
 - Team - collaborating
 - Way of working - Foundation Established
2. **Development is complete** - states need to be achieved
 - Stakeholders - represented
 - Opportunity - viable
 - Requirement - addressed
 - Software system - usable
 - Work - concluded
 - Team - adjourned
 - Way of working - retired

The Development journey progress with the essence

The SDLC model chosen for the project is **waterfall model** so there are **6 phases** in the development journey of the application namely : conception, requirement gathering and analysis ,defining requirements ,design and architecture , implementation/coding ,testing and deployment and maintenance.

The overall way of working for a single phase is as follows:



At end of each phase , review of the project is taken where estimate the project progress by progress of the alpha states . This review allow us to estimate whether the project is going in right direction within time limit and whether to further continue with the project.

Phase 1 : Conception , requirement gathering and analysis

The project idea for conceived due to the following problem which served as a opportunity to deliver a software solution :

Currently, in our and many other institutes, issuing of sports equipment by students is done manually and details are stored in registers. There is no automation in the process which leads to inefficiencies. Students sometimes bypass and do not register themselves before issuing or guards misplace the registers storing the issuing details. Also, no strict action is taken for damaging/misplacing equipment. Availability of a secured sports inventory management software would allow automating tasks like adding dues if returned late or fine if the equipment is damaged, fast retrieval of information like inventory details, issuing details, and adding features like allow issuing only if students have no dues.

To get in depth idea of the problem and what the stakeholders (students , college administration , security persons) would want , interview and discussion was done with the stakeholders with several solutions proposed and discussed . The output of the discussion was a rough idea of the user requirements and quality attributes to consider for the software . Following points were noteworthy :

1. Each inventory item should be uniquely identified by a Id and items should be categorized based on their type . i.e basketball is a category and each 3 basketballs in inventory has their own id .
2. Issuing details like which item , by which student , issue date ad return date should be stored . issuing not allowed if student has any dues
3. Returning of item should come with automatic due addition to the student if he returns the item late.
4. There should be security that is student should not be able to change \ manipulate databases on their will.

The application is feasible as it could be develop in less time with minimal cost and serve a solution to a problem as identified by the stakeholders.

The states of each alpha before and after this phase is complete

1. Stakeholders

Stakeholders

Recognized

- ☐ Stakeholder groups identified
- ☐ Key stakeholder groups represented
- ☐ Responsibilities defined

1 / 6

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1.1.2

Since the key stakeholders (institute administration , students , development) are identified with responsibility of each of them defined .

Outcome :Stakeholders alpha move to recognized state

2. Opportunity

Opportunity

Solution Needed

- ☐ Solution identified
- ☐ Stakeholders' needs established
- ☐ Problems and root causes identified
- ☐ Need for a solution confirmed
- ☐ At least one solution proposed

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1.1.2

Since in this phase opportunity is decided with the problem statement as already described above . Moreover stakeholders confirm the need for solution, roughly tell their needs and a software solution was also proposed.

Outcome :Opportunity moves to solution needed state

3. Software System

None of the alpha states are satisfied for this alpha by this phase

4. Requirements

Requirements

Conceived

- ☐ Stakeholders agree system is to be produced
- ☐ Users identified
- ☐ Funding stakeholders identified
- ☐ Opportunity clear

1 / 6

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1.1.2

Stakeholders confirms the need of a solution and hence the opportunity is clear , The users are the college administration and the students . Funding is not needed as the project is non profit .

Outcome : requirements move to conceived state

5. Work

Work

Initiated

- ☐ Required result clear
- ☐ Constraints clear
- ☐ Funding stakeholders known
- ☐ Initiator identified
- ☐ Accepting stakeholders known
- ☐ Source of funding clear
- ☐ Priority clear

1 / 6

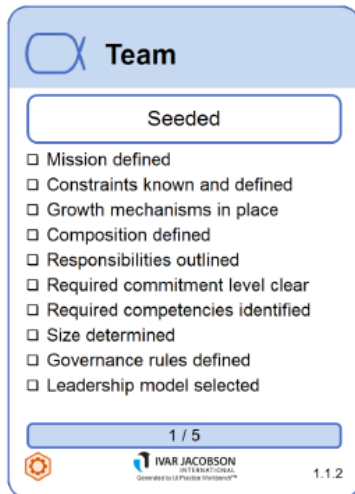
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1.1.2

Stakeholders state their expected outcomes from software solution , the constraints and priorities in the interviews conducted . Again , funding is not required as project is non profit .

Outcome : Work moves to initiated state

6. Team



The required competencies are identified and their level in the team is also determined by self assessment . The team size,rules is determined by instructor while commitment level required is assessed by project complexity and deadline .The objective of project is clear.

Outcome : Team moves to seeded state

7. Way of Working

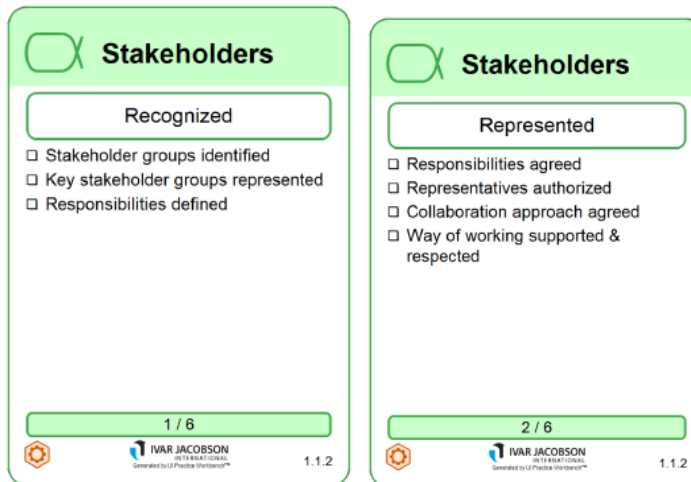
None of the alpha states are satisfied for this alpha by this phase

Phase 2 : Defining requirements

Once the requirement analysis is done the next step is to clearly define and document the application requirements and get them approved from the client i.e institute administration. This is done through an SRS (Software Requirement Specification) document which consists of all the application requirements (scope , constraints , assumptions,hardware requirements , software requirements ,performance requirements , functional requirements , usecases/user scenarios, non - functional requirements ,schedule , budget) to be designed and developed during the project life cycle.

The states of each alpha before and after this phase is complete

1. Stakeholders



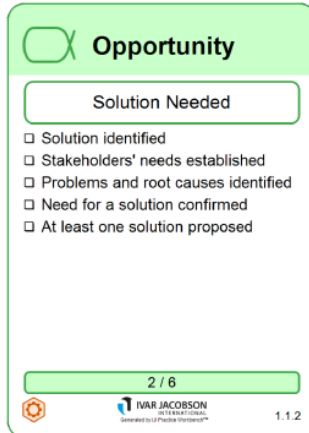
Initial state

Final State

The stakeholders responsibilities are agreed : I2 hostel incharge Chandan represents the hostel administration while the team itself represents the students .

Outcome : Stakeholders move from recognized to represented

2. Opportunity

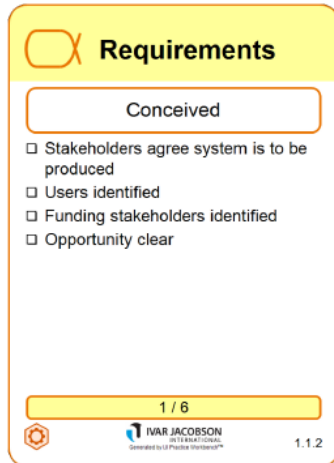


No change in the state of this alpha in this phase

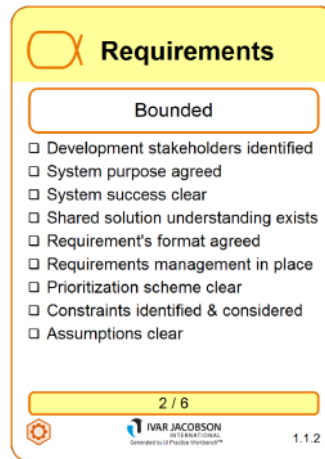
3. Software System

None of the alpha states are satisfied for this alpha by this phase

4. Requirements



Initial state

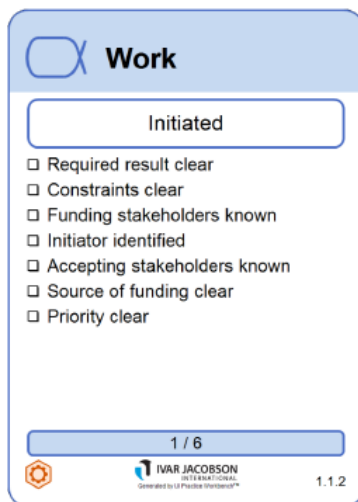


Final State

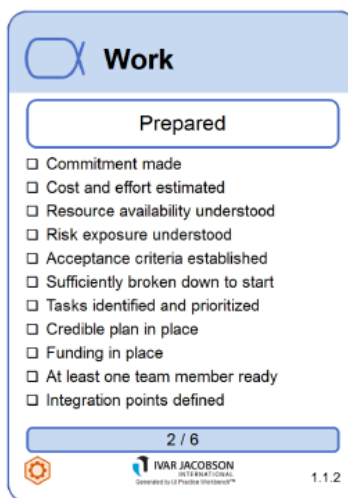
The development team (Aditya , abhijeet) is identified . With a well defined SRS developed in this stage and accepted by stakeholders, system and functional requirements, constraints , assumptions etc. are clear

Outcome : Requirements move from conceived to bounded state

5. Work



Initial state





Final State

In the SRS , the budget and schedule which represents the effort are estimated , resources required are identified , acceptance criteria represented by functional and user requirements success is established . All team members are ready . tasks are divided among team members and deadlines are formed .

Outcome : Work moves from initiated to prepared state

6. Team

Team	Team
Seeded	Formed
<ul style="list-style-type: none"><input type="checkbox"/> Mission defined<input type="checkbox"/> Constraints known and defined<input type="checkbox"/> Growth mechanisms in place<input type="checkbox"/> Composition defined<input type="checkbox"/> Responsibilities outlined<input type="checkbox"/> Required commitment level clear<input type="checkbox"/> Required competencies identified<input type="checkbox"/> Size determined<input type="checkbox"/> Governance rules defined<input type="checkbox"/> Leadership model selected	<ul style="list-style-type: none"><input type="checkbox"/> Enough members recruited<input type="checkbox"/> Roles understood<input type="checkbox"/> How to work understood<input type="checkbox"/> Members introduced<input type="checkbox"/> Individual responsibilities accepted and aligned to competencies<input type="checkbox"/> Members accepting work<input type="checkbox"/> External collaborators identified<input type="checkbox"/> Communication mechanisms defined<input type="checkbox"/> Members commit to team
1 / 5	2 / 5
 IVAR JACOBSON INTERNATIONAL Generated by I2 Practice Framework™	 IVAR JACOBSON INTERNATIONAL Generated by I2 Practice Framework™
1.1.2	1.1.2


Initial state

Final State

The team with all required competencies is formed , roles defined , communication mechanisms established (google meet meetings for remote meeting) .

Outcome : Team moves from seeded to formed state

7. Way of Working

Way of Working
Principles Established
<ul style="list-style-type: none"><input type="checkbox"/> Team actively support principles<input type="checkbox"/> Stakeholders agree with principles<input type="checkbox"/> Tool needs agreed<input type="checkbox"/> Approach recommended<input type="checkbox"/> Operational context understood<input type="checkbox"/> Practice & tool constraints known
1 / 6
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1.1.2

Principles for way of working are established and accepted by the team . These are : following waterfall SDLC model , At end of each phase : review meeting would be made where reviewing the work of previous phase to identify mistakes

and improve , planning for next phase , progress tracking by alpha tracking is done .

Outcome : way of working alpha move to principles established state

Phase 3 : Design and architecture

Using the SRS from the previous step , the software object oriented design is defined using UML diagrams presented as a 4+1 view architecture .

In this phase , the structure is divided in modules with each module performing a functionality and serving a user requirement . The structure diagrams : component diagram and class diagram defines the structure of code to be written and hence make the coding part easier whereas the behaviour diagrams - use case diagram , sequential diagram , activity diagram - defines the logic of each module . All these diagrams are formulated and presented as a 4+1 view design architecture document .

The states of each alpha before and after this phase is complete

1. Stakeholders

Stakeholders

Represented

- ☐ Responsibilities agreed
- ☐ Representatives authorized
- ☐ Collaboration approach agreed
- ☐ Way of working supported & respected

2 / 6

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1.1.2

No state change for this alpha in this phase

2. Opportunity



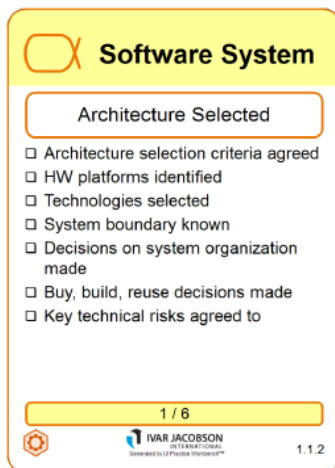
Initial state

Final State

With design and architecture document ready by this phase which defines the structure of application (solution) , The solution is properly defined and is possible within constraints .

Outcome : Opportunity moves from solution needed to viable state

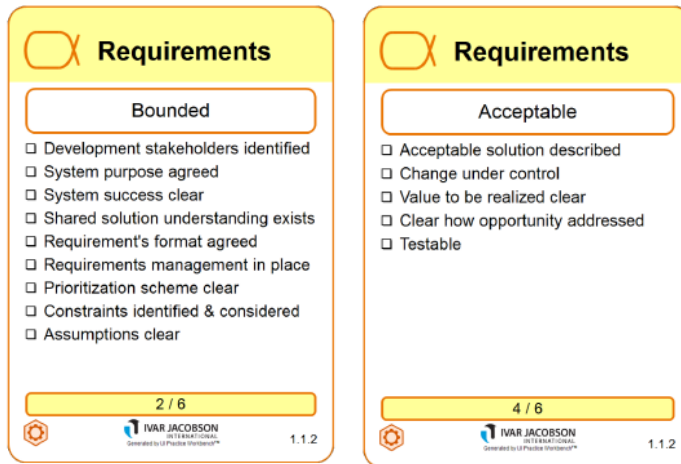
3. Software System



With the design document defining the 4+1 view architecture of application and SRS defining the technologies , platforms etc .

Outcome : Software system moves to architecture selected state

4. Requirements



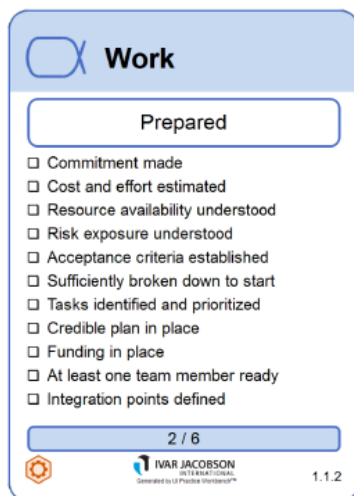
Initial state

Final State

With the design document , finally acceptable solution is fully described with design document and SRS . Moreover the testcases can be formed using the usecases in the SRS . Hence the software is testable

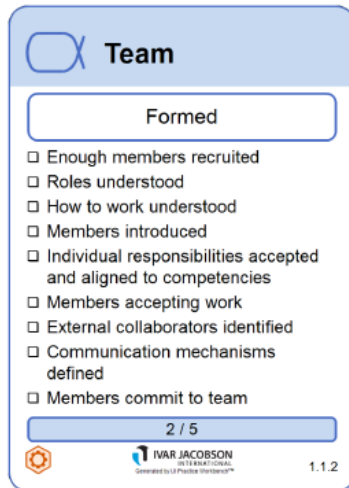
Outcome : Requirements move from bounded to accepted state

5. Work



No state change for this alpha in this phase

6. Team



Team

Formed

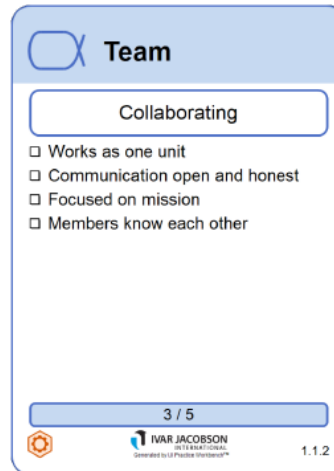
- ☐ Enough members recruited
- ☐ Roles understood
- ☐ How to work understood
- ☐ Members introduced
- ☐ Individual responsibilities accepted and aligned to competencies
- ☐ Members accepting work
- ☐ External collaborators identified
- ☐ Communication mechanisms defined
- ☐ Members commit to team

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1.1.2

Initial state



Team

Collaborating

- ☐ Works as one unit
- ☐ Communication open and honest
- ☐ Focused on mission
- ☐ Members know each other

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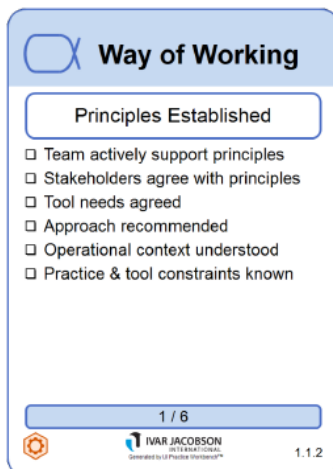
1.1.2

Final State

Finally the design document and SRS in hand , the team is ready for collaborating,

Outcome : team moves from formed to collaborating state

7. Way of Working



Way of Working

Principles Established

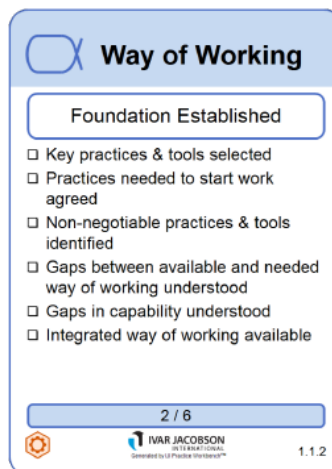
- ☐ Team actively support principles
- ☐ Stakeholders agree with principles
- ☐ Tool needs agreed
- ☐ Approach recommended
- ☐ Operational context understood
- ☐ Practice & tool constraints known

1 / 6

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1.1.2

Initial state



Way of Working

Foundation Established

- ☐ Key practices & tools selected
- ☐ Practices needed to start work agreed
- ☐ Non-negotiable practices & tools identified
- ☐ Gaps between available and needed way of working understood
- ☐ Gaps in capability understood
- ☐ Integrated way of working available

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1.1.2

Final State

The practices and principles both are defined before the coding phase starts

Outcome : way of working moves to Foundation established state

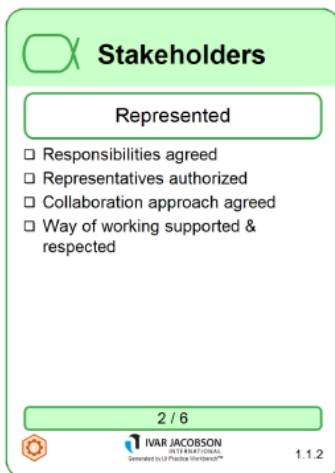
CHECKPOINT 1 : “Ready for Development” IS CLEARED

Phase 4 : Implementation /Coding

Implementation Phase is where the actual code is written. Development of the software is done according to the instructions recorded on the documents prepared in SRS and Design documents .So not much decisions are to be made in this phase . The output is a final coded software which performs all the functionalities and is ready for testing .

The states of each alpha before and after this phase is complete

1. Stakeholders



A state card for 'Stakeholders' with a green header. It contains a 'Represented' section with four unchecked checkboxes. At the bottom, it shows '2 / 6' in a green bar, and logos for Ivar Jacobson and UML Practice Framework.

Stakeholders

Represented

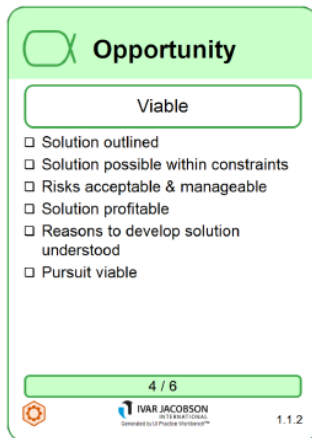
- ☐ Responsibilities agreed
- ☐ Representatives authorized
- ☐ Collaboration approach agreed
- ☐ Way of working supported & respected

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UML PRACTICE FRAMEWORK
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No state change for this alpha in this phase

2. Opportunity



Opportunity

Viable

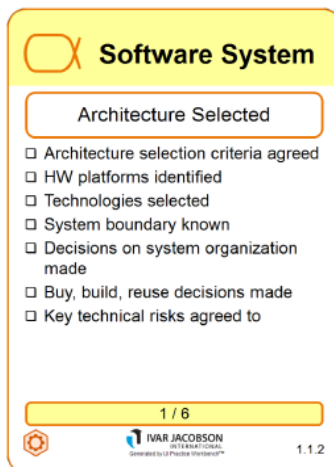
- ☐ Solution outlined
- ☐ Solution possible within constraints
- ☐ Risks acceptable & manageable
- ☐ Solution profitable
- ☐ Reasons to develop solution understood
- ☐ Pursuit viable

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1.1.2

No state change for this alpha in this phase

3. Software System



Software System

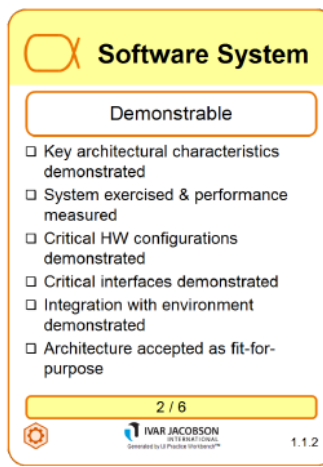
Architecture Selected

- ☐ Architecture selection criteria agreed
- ☐ HW platforms identified
- ☐ Technologies selected
- ☐ System boundary known
- ☐ Decisions on system organization made
- ☐ Buy, build, reuse decisions made
- ☐ Key technical risks agreed to

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1.1.2

Initial state



Software System

Demonstrable

- ☐ Key architectural characteristics demonstrated
- ☐ System exercised & performance measured
- ☐ Critical HW configurations demonstrated
- ☐ Critical interfaces demonstrated
- ☐ Integration with environment demonstrated
- ☐ Architecture accepted as fit-for-purpose

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1.1.2

Final State

After this phase , a demonstrable coded software (executable file created using cmake) is created which is working in the development environment(ubuntu) with performance,design , functional and user requirements met

Outcome : software system moves to demonstrable state

4. Requirements

Requirements

Acceptable

- ☐ Acceptable solution described
- ☐ Change under control
- ☐ Value to be realized clear
- ☐ Clear how opportunity addressed
- ☐ Testable

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INTERAKTIVITET
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1.1.2

No state change for this alpha in this phase

5. Work

Work

Prepared

- ☐ Commitment made
- ☐ Cost and effort estimated
- ☐ Resource availability understood
- ☐ Risk exposure understood
- ☐ Acceptance criteria established
- ☐ Sufficiently broken down to start
- ☐ Tasks identified and prioritized
- ☐ Credible plan in place
- ☐ Funding in place
- ☐ At least one team member ready
- ☐ Integration points defined

2 / 6

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INTERAKTIVITET
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1.1.2

Initial state

Work

Under Control

- ☐ Tasks being completed
- ☐ Unplanned work under control
- ☐ Risks under control
- ☐ Estimates revised to reflect performance
- ☐ Progress measured
- ☐ Re-work under control
- ☐ Commitments consistently met

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Genererat av LP Practice Workbench™

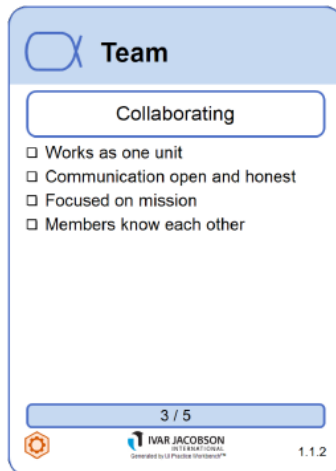
1.1.2

Final State

The coding and implementation is started with taking reference from design document and SRS . The way of working principles and foundation established are being followed. Therefore the work is under control

Outcome : Work move from prepared to under control state

6. Team



Team

Collaborating

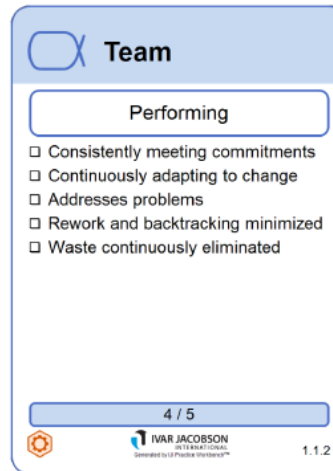
- ☐ Works as one unit
- ☐ Communication open and honest
- ☐ Focused on mission
- ☐ Members know each other

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Initial state



Team

Performing

- ☐ Consistently meeting commitments
- ☐ Continuously adapting to change
- ☐ Addresses problems
- ☐ Rework and backtracking minimized
- ☐ Waste continuously eliminated

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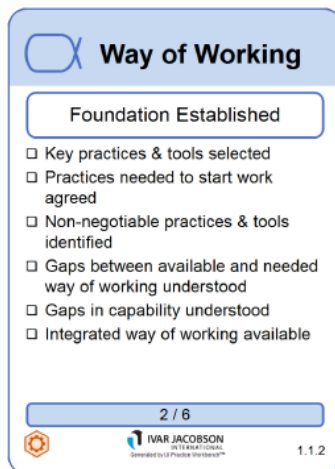
1.1.2

Final State

The team has completed the phase within the set deadline and hence meet commitments , moreover at end of every phase they are reflecting on the mistakes and continuously adapting .

Outcome : Team moves from collaborating to performing state

7. Way of Working



Way of Working

Foundation Established

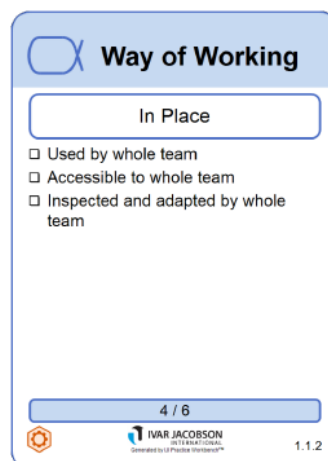
- ☐ Key practices & tools selected
- ☐ Practices needed to start work agreed
- ☐ Non-negotiable practices & tools identified
- ☐ Gaps between available and needed way of working understood
- ☐ Gaps in capability understood
- ☐ Integrated way of working available

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Initial state



Way of Working

In Place

- ☐ Used by whole team
- ☐ Accessible to whole team
- ☐ Inspected and adapted by whole team

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Final State

The principles and foundations for way of working defined are in use vigorously

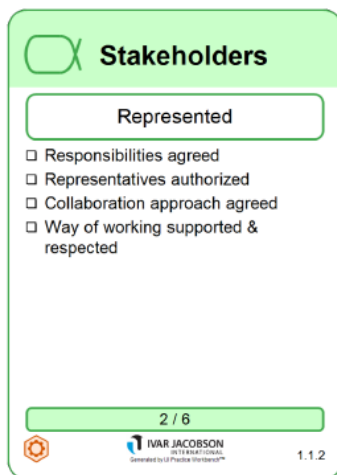
Outcome : way of working move to in place state

Phase 5 : Testing

Manual unit testing and black box testing is done for the final application . In manual unit testing , each functionality /module is tested and compared with expected output . In black box testing , the whole application is assumed to be a black box and inputs are given and compared with expected output defined by system specification

The states of each alpha before and after this phase is complete

1. Stakeholders



The image shows a card titled "Stakeholders" with a green header. Below the title is a section labeled "Represented" containing a list of four items, each with an unchecked checkbox:

- ☐ Responsibilities agreed
- ☐ Representatives authorized
- ☐ Collaboration approach agreed
- ☐ Way of working supported & respected


At the bottom of the card, there is a green progress bar showing "2 / 6". Below the progress bar, the Ivar Jacobson logo and text "IVAR JACOBSON 2019 UML-TOOLS Generated by UML-Tools (UML-Tools.com)" are visible, along with the version number "1.1.2".

No state change for this alpha in this phase

2. Opportunity

No state change for this alpha in this phase

3. Software System





Software System

Demonstrable

- ☐ Key architectural characteristics demonstrated
- ☐ System exercised & performance measured
- ☐ Critical HW configurations demonstrated
- ☐ Critical interfaces demonstrated
- ☐ Integration with environment demonstrated
- ☐ Architecture accepted as fit-for-purpose

2 / 6





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Initial state

Software System

Usable

- ☐ System can be operated
- ☐ System functionality tested
- ☐ System performance acceptable
- ☐ Defect levels acceptable
- ☐ System fully documented
- ☐ Release content known
- ☐ Added value clear

3 / 6

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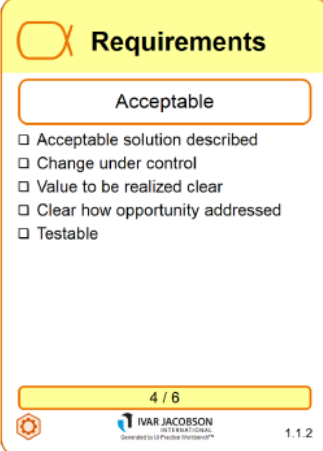
1.1.2

Final State

After testing , the software developed is functionally correct , acceptable , documented .

Outcome : Software system moves from demonstrable to usable

4. Requirements



Requirements

Acceptable

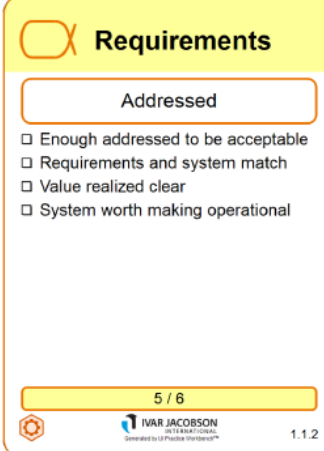
- ☐ Acceptable solution described
- ☐ Change under control
- ☐ Value to be realized clear
- ☐ Clear how opportunity addressed
- ☐ Testable

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Initial state



Requirements

Addressed

- ☐ Enough addressed to be acceptable
- ☐ Requirements and system match
- ☐ Value realized clear
- ☐ System worth making operational

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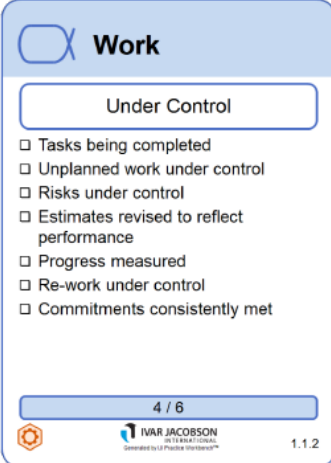
1.1.2

Final State

After testing , it is determined that user and functional requirements are addressed so software is acceptable . Therefore system is ready to use \

Outcome : system moves from acceptable to addressed state

5. Work



Work

Under Control

- ☐ Tasks being completed
- ☐ Unplanned work under control
- ☐ Risks under control
- ☐ Estimates revised to reflect performance
- ☐ Progress measured
- ☐ Re-work under control
- ☐ Commitments consistently met

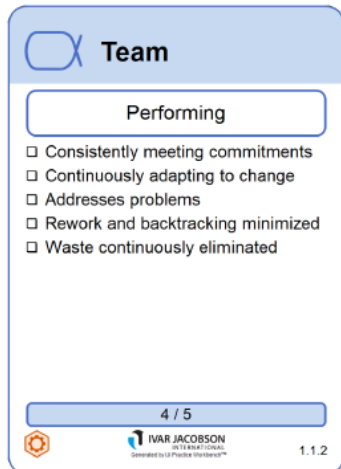
4 / 6

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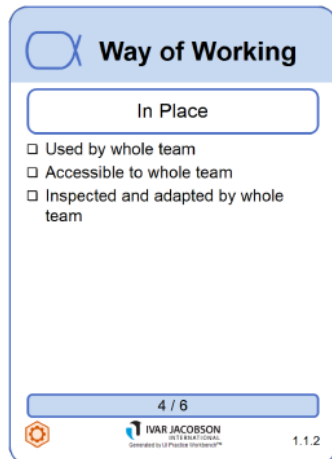
No state change for this alpha in this phase

6. Team

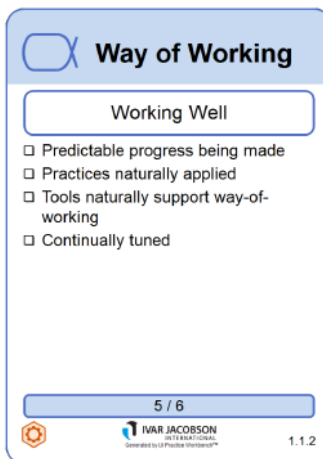


No state change for this alpha in this phase

7. Way of Working



Initial state



Final State

With the deadlines being met and schedule respected , the ebay of working is working well.

Outcome : way of working move to working well state

Phase 6 : Deploying and Maintenance

Since it is a terminal executable application therefore , no such maintenance is required once the executable along with all the required files is installed on the computer . The only maintenance that is required is to maintain the sql cloud server which the application uses to

store the database . If any bugs are reported by users/client , the code would be corrected and new zip folder with the executable will be given to the client with modifications . hence The client is provided with regular maintenance and support for the developed software.

The states of each alpha before and after this phase is complete

1. Stakeholders

Stakeholders

Represented

- ☐ Responsibilities agreed
- ☐ Representatives authorized
- ☐ Collaboration approach agreed
- ☐ Way of working supported & respected

2 / 6

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No state change for this alpha in this phase

2. Opportunity

Opportunity

Viable

- ☐ Solution outlined
- ☐ Solution possible within constraints
- ☐ Risks acceptable & manageable
- ☐ Solution profitable
- ☐ Reasons to develop solution understood
- ☐ Pursuit viable


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No state change for this alpha in this phase


3. Software System

 **Software System**

Usable


- ☐ System can be operated
- ☐ System functionality tested
- ☐ System performance acceptable
- ☐ Defect levels acceptable
- ☐ System fully documented
- ☐ Release content known
- ☐ Added value clear

3 / 6

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No state change for this alpha in this phase


4. Requirements

 **Requirements**

Addressed

- ☐ Enough addressed to be acceptable
- ☐ Requirements and system match
- ☐ Value realized clear
- ☐ System worth making operational

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INTERACTIVE
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No state change for this alpha in this phase

5. Work

Work

Under Control

- ☐ Tasks being completed
- ☐ Unplanned work under control
- ☐ Risks under control
- ☐ Estimates revised to reflect performance
- ☐ Progress measured
- ☐ Re-work under control
- ☐ Commitments consistently met

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Initial state

Work

Concluded

- ☐ Only admin tasks left
- ☐ Results achieved
- ☐ Resulting system accepted

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Final State

Finally after deployment and maintenance plans clear , the resulting system is accepted by tests but the stakeholders acceptance (representator of college administration) is not taken yet .So work finally reaches only concluded state

Outcome : Work moved to concluded state

6. Team

Team

Performing

- ☐ Consistently meeting commitments
- ☐ Continuously adapting to change
- ☐ Addresses problems
- ☐ Rework and backtracking minimized
- ☐ Waste continuously eliminated

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Initial state

Team

Adjourned

- ☐ Responsibilities fulfilled
- ☐ Members available to other teams
- ☐ Mission concluded

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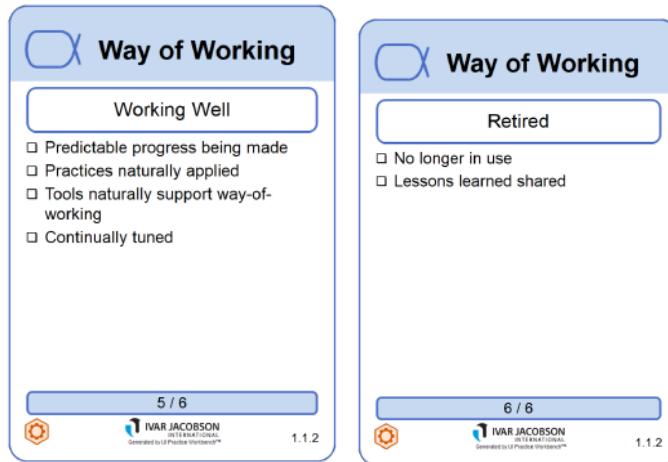
Final State

The final mission that was to create a workable software solution for the problem is completed. However , the stakeholders acceptance is still not taken but since

the project scope was to create a application for software engineering course serving a solution , Therefore the team is adjourned and mission concluded.

Outcome : Team moves to Adjourned state

7. Way of Working



Initial state

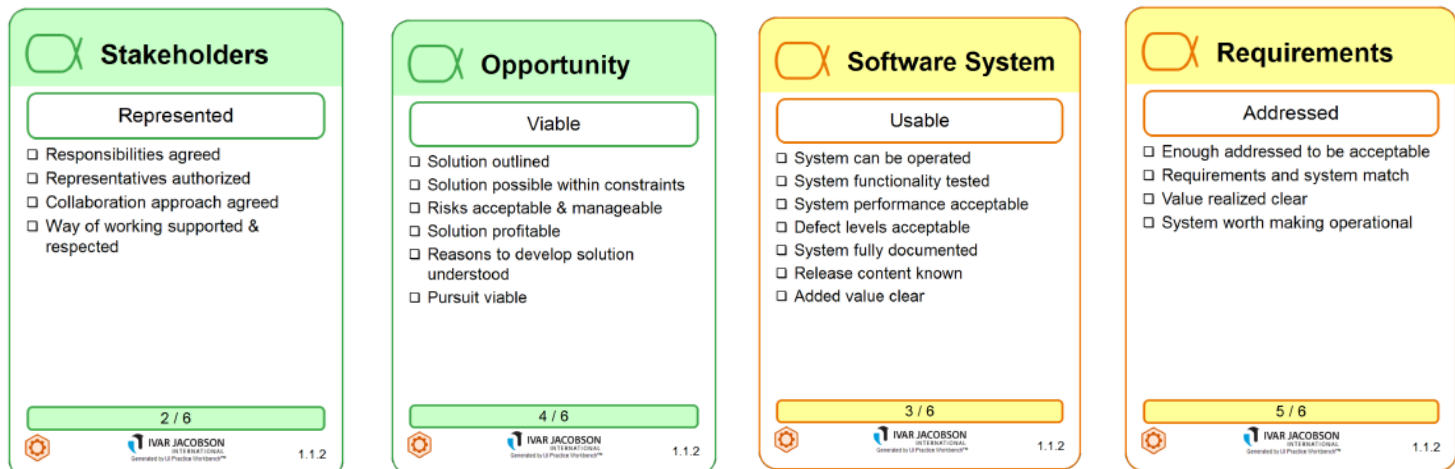
Final State

With the final mission completed, the way of working is no longer used .

Outcome : Way of working moves from working well to retired state

CHECKPOINT 2 : “ Development is complete ” IS CLEARED

The final states of essence at end of the project achieved





Why Final alpha states not Reached of all alphas ?

The alpha :stakeholders , opportunity,software system , requirement and work did not reached their final state because the application developed though working is still not reviewed by the major stakeholder (college administration).Therefore , the work is still incomplete and software system is not operational (actual in use) yet

Additional practices used : Use cases were used as additional practice however during the development journey essence language were not used to formulate them