CAPSTONE PREP 1 PART 1

Question 1

Goals: To put the remotes farmers in direct contact with companies that manufacture (Seeds, Pesticides, Fertilizers)

Inputs: Manufacture product data, Farmer data, Crop data, Pest Data, Fertilizer data, Training farmers

Resources: Office space, Software, Financial support, Development team

Outputs: Efficiency, Convenience, Sales, Increased Production

Activities: Ease of access for remote farmers to purchase farming materials directly from manufacturers

Customer Value: Customer Satisfaction, Customer convenience, Customer access, Customer's variety of selections,

Question 2

Strengths

- Experienced farmers as stakeholders
- Strong Financial support
- Niche target of remote farmers
-

Weaknesses

- Developing new web/mobile platform
- Dependence on manufacturers
- Supply Chain disruptions
- Multiple External factors

Opportunities

- New ways to contact farming manufacturers
- Expansion into farming market
- Expansion of new product catalog to remote farmers
- Access to new segment of consumers

- Weather
- Geopolitical atmosphere
- Inflation
- crop harvesting technology

Question 3

Technology: Database servers, Payment gateways, Communication gateways, Payment security, Privacy measures, Web UI, Mobile UI,

Hardware: Storage servers, Network infrastructure, Communication infrastructure,

Software: Inventory Management system, Payment gateway software, User interface software, E-commerce system

Resources: Project management team, Dev. Ops, Sponsor, Testers, Helping committee

Budget: 2cr has been allocated to the project, costs including development costs, hardware costs, marketing costs

Time Frame: Henry allocated 18 months for the project

Question 4

Current State

- There is no existing platform that bridges the gap between the remote farmers and manufacturing companies
- No platform in place for farmers to purchase needed supplies
- Lack of development

Desired State

- A new web/mobile app helps farmers communicate with companies directly
- A new e commerce site so farmers can purchase all required goods directly
- Introducing farmers' new methods of purchasing products directly

Question 5

External Risks

- Local political influence
- Local farmers influence
- Competition in similar space
- Lack of technical knowledge by farmers
- Supplier issue
- Climate change

Internal Risks

- Lack of knowledge in management team
- Lack of collaboration
- Lack of time management
- Software developmental issues
- User interface issues

BA Risks

- Incompetency in domain
- Lack of organization
- Incomplete requirements
- Not managing changing requirements
- Lack of Communication skills
- Team Collaboration incompetence

Project based Risks

- Unfinished in allocated time frame
- Over budget
- Project scope not met
- Not meeting all the requirements
- Client unsatisfied

Question 6

RESPONSIBLE	Karthik	Delivery Head	Email:Karthik@123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Juhi	Sr. Java dev	Email:Juhi@123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Teyson	Java dev	Email:Teyson@123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Lucie	Java dev	Email: Lucie @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Tucker	Java dev	Email: Tucker @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Bravo	Java dev	Email: Bravo @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Jason	Tester	Email: Jason @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Alekya	Tester	Email: Alekya @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
ACCOUNTBALE	Abdul	BA	Email: Abdul @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Dooku	Project Coordinator	Email: Dooku @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Vandanam	Project Manager	Email: Vandanam @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
CONSULTED	Peter	Helping Committee	Email: Peter @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Ben	Helping Committee	Email: Ben @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Kevin	Helping Committee	Email: Kevin @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Mike	Network Admin	Email: Mike @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	John	Database Admin	Email: John @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
INFORMED	Henry	Sponsor	Email: Henry @123.com Phone:91123412132 Reach Out: 8am – 8pm IST
	Pandu	Financial Head	Email: Pandu @123.com Phone:91123412132 Reach Out: 8am – 8pm IST

Question 7

- The project was initiated to create a web/mobile application for remote farmers to provide direct access to purchase from manufacturing companies of farming goods (Seeds, Fertilizer, Pesticides)
- The current problem is that the farmers do not have direct access to companies to purchase their products.
- Multiple problems can be solved Product availability, Access to multiple products, direct access, cost effectiveness, efficiency
- Project management team, Suppliers, Development team, testers, users, sponsor
- A major organizational change is needed to adopt this software since this is a brand new platform for users and they will need a walkthrough to use the software and development of a user-friendly interface
- The Time on ROI depends on the numbers of users on the platform more users will reduce the time on ROI
- To identity stakeholders' interviews need to be conducted, and team meetings need to be held.

Question 8

Sequential

Planning & Requirements

- Understanding the project goal, scope, and the stakeholder requirements also identifying the potential risk related to the project
- Making a plan on conducting the whole project, feasibility analysis, cost benefit analysis, resource allocation, ROI analysis, marketing analysis
- The last part of planning is to put it together into the SRS document

Design

- The requirements need to be converted into a detailed blueprint for the software to develop based on
- Define how the system will integrate with current software if in place, or if new platform development of new solutions and creating a whole system architecture
- Assigning documents based on priority high level to low level documents

Implementation

- Goal is to develop software
- Coding the software using a programming language such as (JAVA) before pushing the project into prototyping and designs
- Create a functioning prototype model of the software

Testing

- Clean out bugs from the software and validate that the software is fully functional as intended
- Conduct testing to meet client requirements, full system testing and testing individual units to ensure functionality.
- Optimize the software for target environment and resolve all bugs

Deployment

- The software should be released to few users in production an alpha version
- Then release the software to few end users as the beta version
- Once the software is fully ready and tested and all bugs are worked out then realse the full software to all end users

Maintenance

- Fix bugs, post release changes, improvements can be made by releasing updates
- Maintenance team to manage any fixes that need to be implemented to maintain the performance of the software
- Post release support and continuous update of the end product

ITERATIVE

- The Rational Unified Process is an iterative software development process framework created by the Rational Software Corporation, acquired by IBM.
  Within each iteration, the tasks are categorized into 9 disciplines:
  Business modelling
  Requirements
  Analysis and Design
  Implementation
  Test
  Deployment
  Configuration and change management
  Project management
  Environment

4 PHASES life cycle

-***INCEPTION***- Agreement among the team and customer as to what will be built.

-***ELOBARATION***- Agreement within the team as to the architecture and design needed to deliver the agreed system behavior.

- ***CONSTRUCTION-*** The iterative implementation of a fully functional system.

-***TRANSITION***- Delivery, defect correction and turning to ensure customer acceptance.

Evolutionary

- The Spiral model gives more emphasis on RISK ANALYIS.
- A software project repeatedly passes through all these phases in iterations called Spirals in this model.
- It has 4 phases.
- Planning: Requirements are gathered in the planning phase.
- Risk analysis: A Process is undertaken to identify risk and alternate solutions. A prototype is produced at the end of this phase.
- Engineering: Software is produced in the engineering phase along with testing at the end of the phase.
- Evaluation: The evaluation phase allows the customer to evaluate the output of the project to date before the project continues to the next spiral.
- In the spiral model, the angular component represents progress and the radius of the spiral represents cost.

ADVANTAGES:

- High amount of risk analysis
- Good for large and mission critical projects.
- Software is produced early in the software life cycle.

DISADVANTAGES

- Can be costly model to use
- Risk analysis requires highly specific expertise
- Project's success is highly dependent on the analysis phase.

AGILE

- Agile can be implemented where faster delivery is required.
- It does not require any kind of documentation.
- The code itself acts as a document.
- AGILE follows Agile Manifesto that consists of 4 main values and 12 principles.

4 MAIN VALUES

- Individuals and interaction over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan.

12 PRINCIPLES

- Satisfy the customer through early and continuous delivery.
- Welcome changing requirements.
- Deliver working software frequently.
- Business experts and developers must work together.
- Build projects around motivated individuals.
- Face to face conversations.
- Working software is the key measure of progress.
- Promotes sustainable development.
- Continuous attention on technical excellence
- Simplicity
- The best architecture, requirements and design emerge from self-organization team.
- At regular intervals, the team reflects how to become more effective.

Question 9

V Model

- V model uses the Sequential methodology
- Simple & easy to use
- Easy to manage due to rigidity of the model, each phase has specific deliverables and a review process
- Phases are processed and completed one at a time
- Works well with smaller projects
- Not great model for larger more complex projects
- Adjusting scope during a life cycle can kill the project
- No working software can be produced until late during the life cycle
- Poor model for where requirements are at moderate to high risk in the life cycle

RUP (Rational Unified Process)

- Rup is an iterative software development process framework created by rational software corp. who were acquired by IBM in Feb 2003
- Rup has 4 phases Inception, Elaboration, construction, transition
- Each phase is broken into multiple iterations

Spiral

- The Spiral model gives more emphasis on RISK ANALYIS.
- A software project repeatedly passes through all these phases in iterations called Spirals in this model.
- It has 4 phases.
- Planning: Requirements are gathered in the planning phase.
- Risk analysis: A Process is undertaken to identify risk and alternate solutions. A prototype is produced at the end of this phase.
- Engineering: Software is produced in the engineering phase along with testing at the end of the phase.
- Evaluation: The evaluation phase allows the customer to evaluate the output of the project to date before the project continues to the next spiral.

Scrum has five phases

1. ***Initiation***

- Identifies stakeholders and assigns roles to each member of the team and determines epics to form a PRODUCT BACKLOG.

2. ***Planning and estimation***

- To achieve the goal of product epic various actions and tasks are performed BY SCRUM TEAM as USERSTORIES.
- Tasks are broken down into unit called SPRINTS that takes 2 to 4 weeks to complete.
- Sprint planning is done, and the team decides on the USER STORY to work called SPRINT BACKLOG

3. ***Implementation***

- This process includes execution of tasks and processes required to achieve goals.
- Scrum process performs the STANDUP meeting and BURNDOWN CHARTS are made.

4. ***Reviewing***

This includes

- Sprint review
- Sprint retrospective
- Product backlog grooming
- Product retrospective

5. ***Releasing***

- This process deals with project deliverables

Question 10

Waterfall	**V-Model**
Low Cost	Expensive
Testing activities start at a later stages	Testing activities start at a first stages
Move in linear way	Don't move in linear way
Less customer involvement	More customer involvement

Question 11

Methodology – This case study is a small project that targets specific needs and has a minimum development process so I would choose the sequential methodology. Reason being this project can be completed in phases one at a time. All the requirements can be gathered from stakeholders and then can be analyzed. Then a design for the web/mobile application for the farmers can be designed. The development team than can code the application and get tested. Then the final phase of deployment can be initiated

Model- Waterfall model is perfect for this small project since is it very simple and easy to use and cost effective. The requirements in this project are very well understood so it is very easy to manage all the deliverables.

Queston 12

	Requirements		**Design**		**Testing**		**Deployment**		**Maintenance**	
Resources	**Week 1 RG**	**Week 10 RG**	**Week 20 DA**	**Week 30 D1**	**Week 40 T1**	**Week 50 D2**	**Week 60 T2**	**Week 65 D3**	**Week 70 T3**	**Week 72 UAT**
PM										
BA										
Dev. ops										
Tester										
DB Admin										
Net. Admin										

Question 13

Fixed Bit for this case study

- 2cr Budget
- 18 months' time frame
- Online web/mobile application finished product
- Simple project API solutions has enough resources to finish the project on time

Billing Project

- API solutions will determine the billing for each resource
- PM 1000rs per hour 18 month project is 360 working days 8 hours a day results in 28.88lacs
- BA 700rs per hour 360 days on project 20.16 lacs
- DB Admin 800rs per hour 360 days on project 23.04 lacs
- Network Admin 800rs per hour 360 days on project 23.04 lacs
- Sr Java dev. 600rs per hour 200 days on project 9.6 lacs
- 4 developers 500rs per hour 200 days on project 32 lacs
- 2 testers 450rs per hour 150 days on project 10.8 lacs
- Billing cost to API for project 1.47cr well within the budget allocated to API solutions

Question 14

Requirement Gathering Phase

No.	Tasks	Actionable items	Start time	End Time	Duration
1	Identify all stakeholders	Meet all stakeholders on the project	8:00 AM	10:00 AM	2 Hours
2	Client Meeting	Provide the client with progress gather client feedback	10:00 AM	11:00 AM	1 Hour
3	Sort Requirements	Analyze docs and prioritization of requirements in the project	11:00 AM	2:00 PM	3 Hours
4	Prepare BRD	Meet SME and review BRD before submission	3:00 PM	4:30 PM	1.5 Hours
5	Team Meeting	Discuss progress of project	4:30 PM	5:00 PM	.5 Hours
					8 Hours