Question 1. - BPM - Identify Business Process Model for Online Agriculture Store

Goal - To develop an application to facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity.

Inputs – Pesticides, seeds, Fertilizers Procurement from Manufacturers.

Resources – Online application to buy products, Courier partner to deliver products.

Output – Availability of Seeds, Pesticides, Fertilizers on the agriculture product store/application, Delivery at remote location.

Activities – Getting online orders from customers/Farmers, Communication of the farmers with product manufacturer companies. Show the Product shipping details with details along with payment process i.e. through card, UPI and Cash On Delivery.

Value – Farmer/Customer Satisfaction, User Friendly application with Simple look.

Question 2. – SWOT Analysis

Strengths

* Wide ranging agriculture product store can reach to Farmers from various remote areas/location
* High Quality Products with reasonable value compared to physical Store.
* User Friendly application with simple look and easy to understand and browse the products.

Weakness

* Dependability on technology and application issue leads to loss of Sales, Customer and trust.
* Delay in Shipping of Products due to shipping partners.
* Less Customer Interaction with manufacturing companies.

Opportunities

* Huge market for Online Agriculture Store
* Online Store can expand its product range
* Usage of Technology can automate various areas in application like shipping and Payment.

Threats

* Economic downturn can decrease online orders.
* Changes in Export and import can affect Supply chain.

Question 3. Feasibility Study

Mr. Karthik as a delivery head he has to check technical capabilities required to deliver the project in time and within budget frame. The points mentioned below he has to take into consideration

Hardware

* Company should have dedicated server.
* Company will need sufficient storage capacity to store huge amount of data.
* Should have high speed internet connections and sufficient number of Laptops/PC for team.

Software – Technology used

* Need Integrated Development Environment for coding, debugging and testing.
* Testing tools will be used for this application is Selenium or Protractor.
* Database Servers – MySQL.
* Programming Language – Java
* Web development tool to create UI – JavaScript, HTML.
* Payment Gateway – Gpay, Phonepe, Paypal
* Security applications – Firewall, Anti - Malware

Resources

* Project Management Team
* Business Analyst
* Software developers and Testers

Budget

* Amount assigned to the Project – 2 Crores.
* Estimated Cost – 1 Crore, 25 Lakhs
* Hardware – 30 Lakhs
* Software and Technology Used – 30 Lakhs
* Project Management Team – 40 Lakhs
* Change Request – 25 Lakhs

Time Frame – 18 Months

Question 4 – GAP Analysis

GAP analysis is a technique used to compare the current state of business and to the desired future state.

Current State (AS-IS)

* In this case study currently there is no availability of online agriculture store, Farmers have to go to the physical store to buy seeds, pesticides etc.
* The physical store does not have any online presence for farmers to reach.
* In this store there is no customer database management system.

Desired State (TO-BE)

* There is huge market for Online agriculture store to serve farmers the required products.
* In this online application there is wide customer reach and farmers will get a chance to communicate with manufacturing companies. Customers will experience smooth shopping and easy payment gateways.
* This application will have customer database management system.

Question 5. – Risk factors involved in this project (BA risks , Project risks)

BA Risks

* Misunderstanding of Requirements
* Poor communication with the stakeholders can cause delay in delivery of product, stakeholder dissatisfaction.
* Incomplete documentation leads to confusion within project development team.

Project Risks

* Issue with the software and hardware leads to the technical risks.
* Security risk includes data breaches.
* Issues of Project team like untrained employees, lack of communication within the team.
* Resource risks include issues with staffing budget.

Question 6. Stakeholder Analysis (RACI Matrix)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stakeholders | Responsible | Accountable | Consulted | Informed |
| Mr. Henry |  R |  | C | I |
| Peter,Kevin,Ben |   |   | C | I |
| APT IT Solution Team | R | A |   |   |
| SOONY |   |   | C | I |

Influencers

* Mr. Henry is the actual influencer of this project as he is sponsor and initiator of this project. His decisions and requirements will have huge impact on this project
* APT IT solutions is also the major influencer of this project because they are the one who will responsible for delivering the project. So project success is based on their decisions.

Key Decision Makers

* SOONY company formed by Mr. Henry, Mr. Pandu and Mr. Doku will be the key decision makers of the company but Mr. Henry will be the ultimate Key decision maker of this project.
* APT IT solutions is also the key decision makers of this project because they are responsible for delivery of project and their decisions will have impact on the project.

Question 7 – Business Case Document

* Reason to Initiate Project - To facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity.
* Current Problems – farmers facing difficulties in procuring fertilizers which are very important for farm, facing problems in case of buying seeds, farmers are not able to communicate about pesticides and seeds with the manufacturing companies because of their Remote area.
* Solution of Problems – There is wide market for Online agriculture store to serve farmers the required products. In this online application there will be wide customer reach and farmers will get a chance to communicate with manufacturing companies. Customers will experience smooth shopping and easy payment gateways. This application will have customer database management system
* Resources Required – Project development team – 12 People.
* Time Frame to Recover – 12 Months
* Identifying stakeholders – With the help of RACI matrix we are able to identify stakeholders according to their task and responsibilities. Such as

Mr. Henry, Mr. Pandu, Mr. Doku (SOONY Company) – Business Stakeholders

Mr. Karthik and team (APT IT solutions) – Project Stakeholders.

Peter, Kevin, Ben – Third Party Stakeholders.

Question 8. – Four SDLC Methodologies

* SDLC is a step by step procedure or a standard procedure to develop any new software. it includes various stages like Requirement gathering, Requirement analysis, planning, designing, coding, testing, implementation and maintenance.
* Sequential methodology – Means a linear, step by step approach where each phase of development must be completed before moving to the next phase.
* Iterative Methodology- is a software development methodology that breaks down a project into smaller, more manageable parts. It is used in complex projects.
* Evolutionary Methodology – is an iterative and incremental approach where a software system is developed in stages, with each stage building upon the previous one, allowing for continuous refinement and adaptation based on user feedback throughout the development process
* Agile Methodology - The Agile methodology is a project management approach that involves breaking the project into phases and emphasizes continuous collaboration and improvement.In this methodology work is done in regularly iterated cycles, known as sprints, that usually last two to four weeks.

Question 9. - They discussed models in SDLC like waterfall RUP Spiral and Scrum. You put forth your understanding on these models.

Classification on Models related to SDLC.

* Sequential/Waterfall Model - It is also known as the waterfall model. In this model each phase of the SDLC must be completed before the next one can start, and there is no overlap between the phases. This model is simple to use and understand but doesn't handle change well.
* V – Model - This is a sequential model in which each phases of development life cycle is associated with a corresponding testing phase . the V-model emphasizes the need for early and continuous testing throughout the development life cycle.
* Spiral Model - The Spiral Model is a risk-driven process model in the SDLC that combines elements of both iterative and sequential models. It emphasizes risk assessment and mitigation while developing the software in repeated cycles.
* Scrum Model - A Scrum model is an agile project management framework that encourages teams to self-organize and work collaboratively towards a common goal by breaking down work into short, time-boxed iterations called "sprints," allowing for rapid adaptation to change and continuous improvement, with defined roles like Product Owner, Scrum Master, and Development Team.
* The Rational Unified Process (RUP) - is an iterative software development framework that provides a structured approach to developing software. It's designed to be adaptable and can be customized based on the project's needs. RUP emphasizes the importance of addressing various aspects of software development through its four distinct phases. Inception, Elaboration, construction and Transition.

Question 10 - Write down the differences between waterfall model and V model.

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| --- | --- | --- |
| Sr. No. | Waterfall Model | V Model |
| 1 | It has Sequential, linear phases | It has verification and validation activities in parallel |
| 2 | Testing occurs when development phase is complete | Testing activities are planned in parallel with development activities |
| 3 | It is Inflexible, changes are unacceptable after phase is completed | Highly Flexible due to parallel development and testing activities |
| 4 | Risks are identified at the end of project | Early risk identification |
| 5 | Feedback is available only at end of the project | Continuous feedback is available |

Question 11. As a BA, state your reason for choosing one model for this project.

V – Model

* V model follows a verification and validation approach, where each phase is verified and validated before moving to next one.
* In V model testing is conducted in parallel with each development phase.
* V model is more flexible as changes can be made at each stage of development.
* V model provides feedback at each stage of development.
* V model has risk management as an integral part of its development process.
* V model emphasizes documentation that necessary for each phase of development.
* V model delivers incremental version of product at each stage of development.

Question 12. – Prepare a Gantt chart for the project.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Tasks | Jan-Mar | Apr-June | July-Sept | Oct-Dec | Jan-Mar | Apr-June | Resources |
| RG |   |   |   |   |   |   | PM, BA |
| RA |   |   |   |   |   |   | PM, BA |
| Design  |   |   |   |   |   |   | PM Java Dev |
| D1 |   |   |   |   |   |   | Developers |
| T1 |   |   |   |   |   |   | Testers |
| D2 |   |   |   |   |   |   | Developers |
| T2 |   |   |   |   |   |   | Testers |
| D3 |   |   |   |   |   |   | Developers |
| T3 |   |   |   |   |   |   | Testers |
| D4 |   |   |   |   |   |   | Developers |
| T4 |   |   |   |   |   |   | Testers |
| UAT |   |   |   |   |   |   | End Users |

Question 13. Difference between Fix Bid and Billing Projects.

The fixed bid model and the billing model are two common approaches used in project management to determine how funds are released for development.

* The fixed bid model is a pricing model in which the projects scope, timeline, and deliverables are defined in advance, and the project is priced at a fixed amount. In other words the client agrees to pay a set amount for the entire project. The advantage of this model is that provide a clear budget and allows the client to plan and budget accordingly. The disadvantage is that it puts all that risks on the service provider who may have to absorb any additional costs.
* The billing model on the other hand is a pricing model in which the client is billed for the actual time and materials used during the project.This model provides flexibility and transparency to both parties as the client pays only for the actual work performed.The disadvantages is that it may be difficult to predict the final cost of the project which can lead to budget overruns and disagreements between the clients and service provider.

Question 14. Prepare Timesheets of a BA in various stages of SDLC

* Requirement Gathering

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| Requirement Gathering Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Prepare Agenda | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Identifying Stakeholders meeting | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Preparing BRD document | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | Requirements Sorting | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Team Meeting | 5:00 PM | 7:00 PM | 2 Hr |   |
|   |   |   |   | 8 Hr |   |

* Requirement Analysis

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| Requirement Analysis Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Prepare Agenda | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Client Interaction | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Validating Requirements | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 |  Sorting Requirements | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Preparing FRD | 5:00 PM | 6:00 PM | 1 Hr |   |
| 6 | Team Meeting | 6:00 PM | 7:00 PM | 1 Hr |   |
|   |   |   |   | 8 Hr |   |

* Design

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| Design Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Prepare Use case spec | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Meeting with Technical Team | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Webex meeting with Stakeholders | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | Preparing SRS document | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Signoff meeting with Stakeholders | 5:00 PM | 7:00 PM | 2 Hr |   |
|   |   |   |   | 1. Hr
 |   |

* Development

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| Development Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Study of user stories | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Initial step(Unit Testing) | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Bug Fixing | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | Code review | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Feature Implementation | 5:00 PM | 7:00 PM | 2 Hr |   |
|   |   |   |   | 8 Hr |   |

* Testing

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| Testing Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Interaction with BA | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Study of User Stories | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Preparation of test cases | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | System Integration testing | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Bug Reporting | 5:00 PM | 7:00 PM | 2 Hr |   |
|   |   |   |   | 8 Hr |   |

* UAT

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| UAT Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | UAT Planning | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Design and Preparation of test cases | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Execution of Test cases | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | Bug Reporting | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Retesting | 5:00 PM | 6:00 PM | 1 Hr |   |
| 6 | Signoff from Stakeholders | 6:00 PM | 7:00 AM | 1 Hr |   |
|   |   |   |   | 8 Hr |   |

* Deployment and Implementation

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| Deployment and Implementation Phase |
| Sr.No. | Tasks | Start Time | End Time | Duration |   |
| 1 | Deployment Planning | 10:00 AM | 11:00 AM | 1 Hr |   |
| 2 | Environment Setup | 11:00 AM | 1:00 PM | 2 Hr |   |
| 3 | Software Deployment | 1:00 PM | 2:30 PM | 1.5 Hrs |   |
| 4 | Go Live | 3:30 PM | 5:00 PM | 1.5 Hrs |   |
| 5 | Post Implementation Support | 5:00 PM | 6:00 PM | 1 Hr |   |
| 6 | Review and Evaluation | 6:00 PM | 7:00 AM | 1 Hr |   |
|   |   |   |   | 8 Hr |   |