Ques1). Business process model (BPM)

Ans- Goal: To facilitate farmers in remote areas by providing an online store to purchase fertilizers, seeds, and pesticides directly from manufacturers, thereby making life of farmers easy and improving efficiency in agriculture.

 Input: Requirements from farmers and manufacturers, Product details (fertilizers, seeds, pesticides)

Resources: Trained employees, web and mobile application, office

 Space, Regular updates and maintenance of the platform and infrastructure for database.

Output: · Functional online agriculture product store,

User-friendly web and mobile application.

 Activities: requirement gathering, project planning, design phase, development phase, testing phase, deployment, UAT, official launch, maintenance.

 Value:1) Direct access to a wider customer base.

1. Convenience of purchasing agriculture products online.

 3) Successful implementation of a CSR initiative.

 4) Satisfaction and positive impact on agricultural community.

Ques2). SWOT Analysis

Ans-planning tool used to identify and analyze these four elements in a business, project, or any situation where a decision needs to be made.

|  |  |
| --- | --- |
| STRENGHTS* Direct Access to Agricultural Products.
* User-Friendly Application.
* CSR Initiative.
* Quality Team.
 | WEAKNESS* Limited Technical Infrastructure in Remote Areas.
* High Dependence on Technology.
* Fixed Budget.
* Use of app in remote area.
 |
| OPPORTUNITIES* Market Expansion
* Partnerships
* Incorporating new features
* Economic growth of the rural area
 | THREATS* Competition
* Regulatory Challenges
* Cybersecurity Risks
* Market Fluctuations
 |

Ques3). Feasibility study

Ans-

1.) Technology required is JAVA

* Platform-independent
* Robust and secure
* Extensive libraries and frameworks
* Good support for web and mobile application development
* Requires skilled Java developers.

2.) HW requirement

* servers: Web, Database, Backup.
* Networking equipment: switching, hub, bridge, router, gateway, modem, repeater, access point etc.

3.) SW requirements: Development Tool, Frameworks and Libraries, Database.

4.) Trained Resources: Java Developers, Database Administrators, Network Administrators, Testers, Business Analysts.

5.) Total Budget: 2 Crores INR

 HW cost 50 lakhs

 SW cost 30 lakhs

 Resource cost: 93,20,994 inr

|  |  |  |
| --- | --- | --- |
| Designation | LPA | 18 MONTHS |
| Sr. Java Dev | 10,00,000 | 15,30,000 |
| Java Dev (4) | 5,00,000 | 29,52,000 |
| Network Admin | 5,00,000 | 7,38,000 |
| DB Admin | 8,50,000 | 12,74,994 |
| Tester (2) | 5,00,000 | 14,76,000 |
| BA | 9,00,000 | 13,50,000 |

.Remaining budget: 26,79,006 inr

6.) Time Frame: Total Duration: 18 months

Phases:

* Requirement Gathering and Analysis:2 months
* Design Phase:2 months
* Development Phase:8 months
* Testing Phase: 4 months
* Deployment:1 month
* User Training and Support:1 month

Ques4). GAP Analysis

Ans

CURRENT STATE

* Farmers have difficulties in procuring essential agricultural products such as fertilizers, seeds, and pesticides.
* No existing online platform.
* Limited interaction between farmers and manufacturers, leading to inefficiencies and accessibility issues.
* Mr. Henry’s company SOONY allocated a budget of 2crores INR under CSR project
* Contract is acquired by APT IT Solutions.
* Must be completed in 18 months

DESIRED/FUTURE STATE

* Operational online agriculture product store that allows farmers to buy from remote area with internet connectivity.
* User-friendly web and mobile applications.
* Ease in interaction between farmers and manufacturing companies.
* Increased reliability and effectiveness with regular updates and maintenance of platform.

GAPS

1. Technology and its related infrastructure: Need to enhance internet infrastructure as remote areas does have adequate robust technical infrastructure and reliable internet connectivity to support the online platform.
2. Communication: As there is limited communication between farmers and manufacturing companies to eliminate this features like direct messages, customer support and feedback options should be included.
3. Regulation: Legal consultation and adherence to regulatory requirement is needed as potential regulatory challenges for online transactions of agricultural products can arise.
4. Training: Digital literacy is not much in remote areas. Comprehensive training programs and user-friendly design to facilitate easy adoption.

TO FILL THESE GAPS

1. Enhance Infrastructure: Collaborate with internet service providers to improve connectivity in remote areas.
2. Training Programs: Create training programs and conduct workshops for farmers and manufacturers.
3. Regulatory Compliance:Consult with legal experts to navigate regulatory requirements. Implement necessary measures to comply with e-commerce and agricultural product regulations. (companies act 2013, APEDA)

Ques5). Risk Analysis

Ans

Risks for BA:

1. Requirement Miscommunication
2. Incomplete Requirements
3. Scope Creep
4. Stakeholder Conflicts
5. Limited User Engagement

Process/Project Risks:

1. Budget Overruns
2. Timeline Delays
3. User Adoption
4. Data Security and Privacy
5. Regulatory Compliance
6. System Reliability and Performance

Ques6). Stakeholder Analysis (RACI Matrix)

Ans: book

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RACI | Henry | Pandu | Dooku | PKB | D.head | PM | Sr.JD | JD  | NA | DB | T | M | F | BA |
| Project Initiation | A | I | I | C | R | C |  |  |  |  |  | I | I | C |
| Requirement Gathering | C | I | I | C | R | C |  |  |  |  |  | C | C | R |
| Budget Approval | C | A | I | I | I | I |  |  |  |  |  | I |  | I |
| Design | C | I | I | C | R | C | A | R | I | I |  | C | C | C |
| Development | I | I | I |  |  | R | R | R | I | I |  |  |  |  |
| Test | I | I | I |  |  | C | C | C | I | I | A |  |  | R |
| Deployment | I | I | I |  | R | A |  |  | R | A | I |  |  | C |
| User Training & Support | I | I | I | C | R | A |  |  |  |  |  | C | C | R |
| Launch | I | I | I | I | R | A |  |  |  |  |  |  |  | C |

Ques7).Business Case Document.

Ans:

|  |  |
| --- | --- |
| Project name | Online agriculture store |
| Submitted to | Stakeholders, investors,other interested parties. |
| Submitted by | Business analyst |

Executive summary

|  |
| --- |
| Mr. Henry aims to create an online platform to help farmers in remote areas procure essential agricultural products such as fertilizers, seeds, and pesticides. This project will bridge the gap between farmers and manufacturers, enhancing accessibility and efficiency. The project, initiated by SOONY Company under their CSR initiative, will be executed by APT IT SOLUTIONS with a budget of 2 Crores INR over 18 months. |

Goals for the project

|  |
| --- |
| * Development user-friendly web and mobile application.
* Direct communication between farmers and manufacturers.
* Improve the accessibility of agricultural products for remote area farmers.
* Accessibility farmers in buying seeds, pesticides, and fertilizers online.
 |

Stakeholders:

1. Mr. Henry (Business Owner)
2. Mr. Pandu (Financial Head at SOONY)
3. Mr. Dooku (Project Coordinator at SOONY)
4. Peter, Kevin, Ben (Farmers and Stakeholders)
5. Mr. Karthik (Delivery Head at APT IT SOLUTIONS)
6. Mr. Vandanam (Project Manager)
7. Ms. Juhi (Senior Java Developer)
8. Java Developers (Mr. Treyson, Ms. Lucie, Mr. Tucker, Mr. Bravo)
9. Network Admin (Mr. Mike)
10. DB Admin (John)
11. Testers (Mr. Jason, Ms. Alekya)
12. Business Analyst (Karan)
13. Manufacturers (Fertilizers, seeds, pesticides companies)
14. Farmers (End users)

Scope:

* Product details from manufacturers.
* Displays products to farmers for browsing and purchasing.
* Facilitates communication between farmers and manufacturers.
* Includes user-friendly interfaces and training materials for new users.

Requirements:

Functional Requirements:

* User registration and login for farmers and manufacturers.
* Product listing and browsing.
* Shopping cart and checkout process.
* Order tracking and history.
* Communication module for direct messaging between farmers and manufacturers.

Non-Functional Requirements:

* High availability and scalability of the platform.
* Secure payment gateway integration.
* Data encryption and user privacy protection.
* Responsive design for web and mobile compatibility.

Risk Analysis:

* Miscommunication
* Technical Challenges
* Resource Constraints
* Budget Overruns.
* User Adoption.

Financial Analysis:

* Budget: 2 Crores INR
* Major Cost Components: Hardware: 50 Lakhs INR. Software: 30 Lakhs INR. Human Resources: 1 Crore 20 Lakhs INR
* Revenue Projections: Potential for partnerships, advertisements, and subscription models for premium features.

Duration of the project with phases

* Requirement Gathering and Analysis: 2 months
* Design Phase: 2 months
* Development Phase: 8 months
* Testing Phase: 4 months
* Deployment and Go-Live: 1 month
* User Training and Support: 1 month

Ques8). Four SDLC Methodologies

Ans :

1.Sequential Methodology: The Sequential methodology, commonly known as the Waterfall model, is a linear and structured approach where each phase of the SDLC is completed before moving on to the next. It follows a clear sequence: Requirements, Design, Implementation, Testing, Deployment, and Maintenance.

2.Iterative Methodology: The Iterative methodology involves developing the system through repeated cycles (iterations). Each iteration includes planning, design, implementation, and testing. The process is repeated until the final product meets all requirements.

3.Evolutionary Methodology (Prototyping): The Evolutionary methodology focuses on building an initial prototype and evolving it into the final product through iterative refinement. This approach is highly flexible and emphasizes early feedback from users.

4.Agile Methodology

Overview: Agile methodology is an iterative and incremental approach that emphasizes flexibility, collaboration, and customer feedback. Agile frameworks like Scrum is used to break down the project into small, manageable increments called sprints.

Ques9).– Waterfall RUP Spiral and Scrum Models (SDLC MODELS)

Ans

1. Waterfall Model: The Waterfall model is a linear and sequential approach where each phase must be completed before the next begins. It follows a structured progression from requirements gathering to design, implementation, testing, deployment, and maintenance.
2. RUP (Rational Unified Process):RUP is an iterative software development process framework that emphasizes a disciplined approach to assigning tasks and responsibilities. It is divided into four phases: Inception, Elaboration, Construction, and Transition.
3. Spiral Model: The Spiral model combines iterative development with the systematic aspects of the Waterfall model. It focuses on risk analysis and involves repeating cycles (spirals) of planning, risk analysis, engineering, and evaluation. Well suited for large, expensive, complicated projects.
4. Scrum (Agile Framework):Scrum is an Agile framework that emphasizes iterative progress through small, manageable increments called sprints. It involves regular feedback, continuous improvement, and close collaboration among team members.

Recommendation as a Business Analyst:-

Considering the nature of the project to create an online agriculture product store, the flexibility to adapt to user feedback, and the need for continuous validation of requirements, the V-Model might be more suitable for this project than the Waterfall model.

Points in favor of v-model:

1. Validation and verification at each phase ensures that the requirements and design are continually checked against the expected outcomes as it reduces the risk of errors.
2. Clear structure while still allowing for early detection of issues through parallel testing phases while corresponding phase of development.
3. Stakeholders like farmers and manufacturers can provide feedback and validation throughout the development process, leading to a more user-aligned product.
4. V-Model’s focus on continuous validation and parallel testing provides a more robust framework for ensuring the project meets its goals and user needs effectively.
5. Works well for small projects.

Ques10).Differences between waterfall model and V-model.

Ans

|  |  |  |
| --- | --- | --- |
| Characters | Waterfall | V-model |
| structure | Linear and sequential. | Linear but with a corresponding testing phase for each development stage. |
| Phases | Requirements, Design, Implementation, Testing, Deployment, Maintenance | Requirements,Design, Verification and Validation phases. |
| Flow | Each phase must be completed before the next begins. | Each development phase has a corresponding testing phase. |
| Flexibility | Inflexible to changes once a phase is completed. | Slightly more flexible with parallel validation phases. |
| Risk | Risks are identified and managed in the later phases. | Risks are identified and managed throughout the development and validation phases. |
| Documentation | Extensive documentation is required at each phase. | Extensive documentation is required at each phase, with added emphasis on validation documentation. |
| Testing | Occurs after the implementation phase. | Integrated into each phase, ensuring early validation and error detection. |
| Customer feedback | Limited customer involvement | Continuous involvement and feedback from customers during the validation phases |
| Error Detection | Detected in the later stages | Detected early through parallel validation phases |
| Suits | Projects with well-defined requirements and minimal changes | Projects that require continuous validation and verification throughout the development |

Ques11).As a BA, state your reason for choosing one model for this project.

Ans: V-Model

1. Continuous Validation and Verification.
2. Early Detection of Issues.
3. Structured and Clear Phases.
4. Alignment with Stakeholder Expectations.
5. Reduced Risk of Scope Creep.
6. Quality Assurance.

The V-Model is a great fit for the online agriculture product store project because it focuses on testing and validating each step of the development process. This means we can catch and fix issues early, making sure the application is high-quality and user-friendly. By involving users and stakeholders throughout the project, we ensure the final product meets their needs and expectations. Overall, the V-Model provides a structured yet flexible approach to delivering a successful and reliable application.

RA

Ques12). Gantt chart

 DESIGN

Ans

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Jan-feb-mar | Apr-may-june | Jul-aug-sept | Oct-nov-dec | Ja-Fe-Ma | Ap-Ma-Ju | J-A-S |

|  |
| --- |
| Process |
| R G |
| R A |
| Design |
| D1,2,3,4 |
| T1,2,3,4 |
| UAT |

Ques13).Explain the difference between Fixed Bid and Billing projects
Ans:

fixed bid: In a Fixed Bid project, the service provider agrees to complete the project for a set price, regardless of the time or resources needed. This gives the client budget certainty, but the provider takes on the risk of any cost overruns or delays. It's best for projects with clear, stable and well-defined requirements, clients with clear cost expectation.

Billing projects: Billing projects often referred to as Time and Materials (T&M) projects, are contracts where the client pays for the actual time and resources spent on the project. This includes labour, materials, and any other expenses incurred. Best suited for Projects with evolving or unclear requirements that are likely to change. Clients who prioritize flexibility and adaptability over fixed costs.

Ques14). Prepare Time-sheets of a BA in various stages of SDLC
Ans:

|  |  |  |  |
| --- | --- | --- | --- |
| WEEK | PHASE | TASK | HOURS |
| 1-4 | Requirement Gathering | Meeting with stakeholders, conducting interviews with users, documenting requirements, reviewing and validating requirements. | 40 hrs |
| 5-8 | Requirement analysis | Analysing gathered requirements, creating use cases and user stories, reviewing with stakeholders, finalizing requirement specifications. | 40 hrs |
| 9-16 | Design | Participating in design meetings, assisting in developing wire-frames, validating design against requirements, documenting design decisions. | 80 hrs |
| 17-60 | Development (D1, D2, D3, D4) | Providing clarifications to developers, updating requirement documents, participating in daily stand-up meetings, reviewing progress and providing feedback. | 320 hrs |
| 25-64 | Testing Phases (T1, T2, T3, T4) | Assisting in developing test cases, reviewing test results, participating in defect triage meetings, validating fixes and updates. | 160 hrs |
| 65-68 | UAT | Coordinating UAT sessions, gathering feedback from users, documenting UAT results, finalizing. | 40 hrs |

TOTAL HOURS: 52hrs

RG