Project Title: UrbanGarden

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Experiment No 1

Aim: Write a detailed problem statement for any case study. Justify which process model would be best suited to apply on it.

Theory:

1. Title: UrbanGarden

2. Problem Statement:
   Despite the increasing demand for plants and gardening products, many plant nurseries **struggle to attract** and **retain customers** through their websites.
   Customers often face difficulty **navigating websites**, finding **detailed plant information**, and completing purchases, resulting in **lost sales** and decreased customer satisfaction.
   As a result, there is a need to develop and optimise plant nursery websites to provide-
   a. User-Friendly shopping experience
   b. Wide Variety to select the desired products to shop
   c. Enhancing online experience that encourages customer loyalty and drives sales

3. Traditional Model:
   The Evolutionary Model, also known as the Prototyping Model, can be justified for developing the UrbanGarden platform due to its focus on rapid prototyping, user feedback, and iterative development. Here's why the Evolutionary Model would be a suitable choice:

   Rapid Prototyping:
   - In the Evolutionary Model, a basic prototype of the platform is developed quickly, allowing the team to gather early feedback from stakeholders and potential users.
   - This means that the core functionalities of the platform can be demonstrated to nursery owners and users early in the development process.

   User-Centric Approach:
   - The Evolutionary Model emphasizes involving end-users from the beginning.
   - As UrbanGarden is a platform for nursery owners and users, their early feedback is crucial to ensuring the platform meets their specific needs and expectations.

   Iterative Development:
   - The Evolutionary Model supports an iterative development approach. The initial prototype can be further refined and enhanced based on user feedback and changing requirements.

- Within a 3-month timeframe, multiple iterations can be conducted to continuously improve the platform.

Flexibility and Adaptability:

- The Evolutionary Model is well-suited for projects where requirements are not entirely clear or may evolve during development.
- In the case of UrbanGarden, the platform's functionalities might evolve as nursery owners and users provide feedback and new use cases emerge.

Time-Effective:

- The Evolutionary Model allows the development team to quickly build and demonstrate a functional prototype.
- This enables stakeholders to get a clear idea of what the final product will look like and provide feedback early in the process.

Small Development Team:

- With a team of three developers, the Evolutionary Model is practical as it encourages close collaboration and communication among team members.

Risk Mitigation:

- By receiving early feedback through prototyping, the team can identify potential risks and challenges sooner, allowing for timely adjustments and risk mitigation strategies.

However, it's essential to consider the potential challenges and mitigate them:

Scope Management:

- The Evolutionary Model might be more challenging to manage in terms of defining and controlling the scope, especially if new features and functionalities are continuously added based on user feedback.

Balancing Speed and Quality:

- Rapid prototyping might prioritize speed over perfecting each feature, potentially leading to some limitations in the initial prototypes
- Balancing speed with maintaining quality is crucial.

Documentation:

- In an evolutionary development approach, the focus is on building prototypes and iterating.
- Careful documentation is required to ensure that knowledge is preserved, especially if team members change during the project.

4. Agile Model:

The Agile model can be well-justified for developing the UrbanGarden platform due to its adaptability, collaborative nature, and ability to deliver incremental value within a time-sensitive project. Here's why Agile would be a suitable choice:

Iterative and Incremental Development:

- With Agile, the development process is broken down into smaller iterations (sprints) that typically last 1-4 weeks. This allows the development team to deliver functional increments of the platform within each sprint.
- In a 3-month time frame, multiple iterations can be completed, and valuable features can be delivered to users throughout the development process.

Flexibility and Adaptability:

- Agile embraces changes in requirements, allowing the team to adjust and respond to evolving needs.
- As the project progresses, feedback from nursery owners and users can be incorporated, ensuring the platform aligns better with their expectations.

Regular User Feedback:

- Agile prioritizes constant user feedback through iterative cycles. This enables the team to validate assumptions, understand user needs better, and make improvements based on real-world usage, leading to a more user-friendly and customer-centric platform.

Collaborative Teamwork:

- Agile encourages close collaboration among team members, including developers, designers, and stakeholders.
- With a small team of three developers, communication and coordination are more streamlined, leading to faster decision-making and issue resolution.

Early Delivery of Core Features:

- Agile prioritizes delivering the most valuable features first. Core functionalities, such as nursery registration, product listings, and user registration, can be developed and deployed early to start gathering feedback and attracting users to the platform.

Risk Management:

- Agile allows risks to be identified and addressed early in the development process.
- Frequent testing and continuous integration help detect and resolve issues promptly, reducing the chances of major setbacks or delays.

Time-Boxed Sprints:

- The time-boxed nature of Agile sprints ensures that the team focuses on delivering specific, achievable goals within a fixed timeframe.
- This helps keep the project on track and maintain momentum throughout the development process.

Continuous Improvement:

- Agile encourages retrospectives after each sprint, allowing the team to reflect on their performance, identify areas for improvement, and implement changes in subsequent iterations.

However, it's important to consider the potential challenges:
Scope Management:

- In a 3-month timeframe, the scope of the project needs to be well-defined and prioritized.
- To avoid scope creep, clear communication with stakeholders is essential.

Resource Allocation:

- With a small team, it's crucial to ensure that developers have the necessary skills and expertise to deliver the required functionalities effectively.

Managing Expectations:

- Agile requires close collaboration with stakeholders, and they need to understand the iterative nature of development and the potential for changes during the process.

In conclusion, the Agile model is well-suited for developing the UrbanGarden platform, given the project's time constraints, need for flexibility, and desire for early user feedback. By embracing Agile principles and practices, the development team can deliver a functional and user-friendly platform that meets the needs of nursery owners and users while adapting to changing requirements within the 3-month timeframe.