

EXPERIMENT 1

Project Title: GROOMIFY: CUSTOMIZE YOURSELF

Introduction

The Grooming Application is an innovative platform designed to provide a seamless and personalized grooming experience. Integrated with artificial intelligence, the application offers intelligent recommendations, appointment scheduling, and much more to enhance user convenience and satisfaction.

Tired of endless appointment calls and sifting through endless reviews? Look no further! The Grooming App is here to revolutionize your grooming experience.

This innovative platform leverages the power of artificial intelligence (AI) to create a highly personalized and convenient one-stop shop for all your grooming needs.

Imagine this:

- **AI-powered recommendations:** No more browsing blindly. The app analyzes your preferences, hair or skin type, and grooming goals to suggest the perfect stylist, service, and products for you.
- **Seamless appointment scheduling:** Book your appointments with a few taps, 24/7. See real-time stylist availability and choose a time that fits your busy schedule.
- **Effortless communication:** Stay connected with your stylist through the app's secure messaging platform. Discuss haircut ideas, ask questions about aftercare, or easily reschedule appointments.
- **Personalized loyalty programs:** Earn rewards for your regular grooming sessions and redeem them for exclusive discounts or free services.
- **A grooming community at your fingertips:** Discover inspirational looks, styling tips, and product reviews all within the app.

The Grooming App isn't just about convenience, it's about empowering you to achieve your best look and feel confident every day.

System Overview

This application aims to connect users with grooming professionals, offering features such as AI-driven recommendations for grooming styles, automated appointment scheduling, and personalized grooming tips. The backend is robust, ensuring scalability and security, while the frontend is user-friendly and intuitive.

Features

- **User Registration and Login:** Secure user authentication.
- **AI Recommendations:** Personalized grooming style suggestions based on user preferences and trends.
- **Appointment Scheduling:** Easy booking and management of appointments.
- **Profile Management:** Manage user profiles, preferences, and history.

- Notifications: Reminders for appointments and new recommendations.
- Admin Dashboard: Tools for administrators to manage the application.

User Guide

Registration and Login

- **Register:** Users can sign up by providing basic information and verifying their email.
- **Login:** Users can log in using their credentials. Dashboard
- The user dashboard provides an overview of upcoming appointments, recent AI recommendations, and quick access to profile settings.

Booking Appointments

- Navigate to the "Book Appointment" section.
- Choose a service, date, and time.
- Confirm the appointment.

AI Recommendations

- View personalized grooming suggestions based on your profile and preferences.
- Accept or reject recommendations.

Development Guide Technologies

Used

- **Backend:** Django, Django REST Framework
- **Frontend:** React.js
- **Database:** PostgreSQL
- **AI:** TensorFlow, scikit-learn

Conclusion : Groomify represents the future of personalized grooming, leveraging the power of artificial intelligence to offer a seamless and tailored experience for every user. By integrating intelligent recommendations, efficient appointment scheduling, and comprehensive profile management, Groomify transforms the traditional grooming routine into a smart, intuitive process that caters to individual needs and preferences.

With a commitment to innovation and user satisfaction, Groomify not only simplifies the grooming process but also enhances it by providing data-driven insights and up-to-date grooming trends. Whether you are a busy professional seeking quick and reliable grooming solutions, or a grooming professional looking to better serve your clients, Groomify offers the tools and features necessary to achieve your goals.

For further assistance, support, or feedback, please refer to the relevant sections in this documentation or contact our support team. Welcome to a smarter way of grooming with Groomify.

EXPERIMENT 2

AIM: Identify Suitable Design and Implementation model from the different software engineering models.

Why Agile Model is Best for Groomify

1. Flexibility and Adaptability:

- **Dynamic Requirements:** Groomify needs to stay current with evolving user preferences and grooming trends. Agile's iterative development process allows for rapid adjustments based on feedback, ensuring the product remains relevant and up-to-date.
- **Response to Change:** Agile embraces changes, even in the later stages of development. This is crucial for Groomify, where new grooming trends and user feedback can significantly alter requirements.

2. User-Centered Development:

- **Continuous User Feedback:** Agile emphasizes involving users throughout the development process. For Groomify, understanding and incorporating user preferences is crucial. Regular feedback ensures the product meets user needs and expectations.
- **Customer Collaboration:** Agile fosters strong customer collaboration, ensuring that the product development aligns closely with user requirements and expectations.

3. Incremental Delivery:

- **Value Delivery:** Agile allows for the delivery of small, functional increments that can be tested and validated by users. This is beneficial for Groomify as it can start with core functionalities and gradually add more advanced features based on user feedback.
- **Early and Continuous Delivery:** By delivering increments early and often, Agile ensures that users get value from the product sooner and continuously.

4. Risk Management:

- **Early Issue Detection:** Agile mitigates risks by addressing them early and often. Regular iterations and constant feedback loops help identify and resolve issues promptly.
- **Adaptive Planning:** Agile's iterative nature allows for adaptive planning, which is essential for managing uncertainties and changes in Groomify's development.

5. Improved Collaboration and Communication:

- **Cross-Functional Teams:** Agile promotes collaboration among cross-functional teams, fostering a culture of open communication and collective problem-solving.
- **Regular Meetings:** Agile frameworks like Scrum include regular meetings (daily stand-ups, sprint reviews, retrospectives) that ensure effective communication and timely issue resolution.

6. Quality Assurance:

- **Continuous Testing:** Agile incorporates continuous testing and quality checks throughout the development process, ensuring a high-quality product.
- **Definition of Done:** Agile practices include defining what “done” means for each increment, ensuring all completed features meet quality standards.

Comparison with Other Models

1. Waterfall Model:

- **Inflexibility:** Waterfall follows a linear and sequential approach, making it difficult to accommodate changes once the project is underway. This is not suitable for Groomify, where user preferences and trends can change.
- **Delayed Feedback:** Feedback is typically received at the end of the project, which can lead to significant rework if the product does not meet user expectations.

2. V-Model (Verification and Validation):

- **Rigid Structure:** Similar to Waterfall, the V-Model has a rigid structure with predefined stages. Changes are hard to incorporate, making it less suitable for dynamic projects like Groomify.
- **Testing Only After Development:** Testing phases are often separate from development phases, potentially delaying the discovery of critical issues.

3. RAD (Rapid Application Development):

- **Resource Intensive:** RAD requires heavy user involvement and a highly skilled team to handle rapid prototyping, which might not be feasible for all projects.
- **Scalability Issues:** RAD can face scalability issues, making it less ideal for larger, more complex projects like Groomify.

4. Spiral Model:

- **Complexity and Cost:** The Spiral model can be complex and expensive due to its emphasis on risk analysis and repeated iterations. It may not be necessary for Groomify's scale.
- **Specialized Expertise:** Requires expertise in risk management and iterative development, which might not be readily available.

5. Kanban:

- **Lack of Time-Boxed Iterations:** Kanban focuses on continuous delivery without fixed iterations, which can make it challenging to manage deadlines and deliverables.
- **Less Structure:** While flexible, Kanban may lack the structured approach needed for projects requiring regular milestones and clear deliverables.

Conclusion : The Agile model is the best choice for Groomify due to its flexibility, user- centered approach, incremental delivery, effective risk management, improved collaboration, and continuous quality assurance.

EXPERIMENT 3

AIM : Prepare Software Requirement Specification (SRS) for the selected module.

Requirement 1: Registration

Req 1.1: Enter the Details of User (as Admin)

- **Input:** Username, email, password (external)
- **Output:**
 - The details will be saved automatically by the system (internally).
 - The details are stored securely in the database.

Req 1.2: Register Members (Done by Admin)

- **Input:** Enter the details of members by admin (Username, email, password, additional details if necessary)
- **Output:** Save the details in the system (internally).

Requirement 2: Show Information of Admin

Req 2.1: User Information

- **Input:** Admin ID and password (internal)
- **Output:** Username, email, phone number, address (personal information).

Req 2.2: Admin Account Information

- **Input:** Account information (internal)
- **Output:** Name, date, personal information.

Requirement 3: Body Type Analysis

Req 3.1: Input Body Measurements

- **Input:** Height, weight, chest size, waist size, hip size (external)
- **Output:** Body measurements are saved and analyzed by the system (internally).

Req 3.2: Analyze Body Type

- **Input:** Saved body measurements (internal)

- Output: Determined body type (internally).

Requirement 4: Personalized Grooming Tips

Req 4.1: Provide Grooming Tips

- Input: User's body type (internal)
- Output: List of personalized grooming tips (externally displayed to the user).

Req 4.2: Save Favorite Tips

- Input: Selected grooming tips by the user (external)
- Output: Favorite grooming tips saved in the user's profile (internally).

Requirement 5: Product Recommendations

Req 5.1: Recommend Products

- Input: User preferences, body type (internal)
- Output: List of recommended grooming products (externally displayed to the user).

Req 5.2: Rate and Review Products

- Input: Product ratings and reviews by the user (external)
- Output: Ratings and reviews saved in the system (internally).

Requirement 6: Grooming Trend Updates

Req 6.1: Display Latest Trends

- Input: None
- Output: List of latest grooming trends (externally displayed to the user).

Req 6.2: Subscribe to Trend Updates

- Input: User subscription request (external)
- Output: Subscription saved in the system (internally).

Requirement 7: User Feedback Collection

Req 7.1: Collect User Feedback

- Input: User feedback (external)
- Output: Feedback saved in the system (internally).

Req 7.2: Analyze Feedback

- Input: Saved user feedback (internal)
- Output: Improved grooming tips and product recommendations (internally).

Requirement 8: Security

Req 8.1: User Authentication

- Input: Username, password (external)
- Output: Access granted or denied based on credentials (internally).

Req 8.2: Data Encryption

- Input: User data (internal)
- Output: Encrypted user data (internally).

Requirement 9: Usability

Req 9.1: User-Friendly Interface

- Input: User interactions (external)
- Output: Responsive and easy-to-navigate user interface (externally displayed to the user).

Req 9.2: Help and Support

- Input: User requests for help (external)
- Output: Help and support documentation displayed (externally displayed to the user).

Requirement 10: Delete User (Only by Admin)

Req 10.1: Delete User

- Input: Username and password (external)
- Output: Deletion status.

Requirement 11: Modification of the User Attendance by Admin

Req 11.1: Marking Daily Attendance

- Input: Username (external)
- Output: User status.

Requirement 12: View Status of Every User Under Admin Control

- Input: None
- Output: Display status of all users under admin control.

Requirement 13: Managing Users According to Their Specific Roles

- Input: Role-specific details (external)
- Output: Users managed according to their roles.

Requirement 14: Restrictions on User Changes

Req 14.1: User Restrictions

- Input: Restricted categories (internal)
- Output: Users are not allowed to make changes in certain categories.

Requirement 15: User Can Make Changes in Personal Information

Req 15.1: Add New Changes When Required

- Input: New changes (external)
- Output: Addition status.

ATTRIBUTES OF GROOMIFY :

- Reliable
- User friendly
- Dynamic

Conclusion: Effective project scheduling is crucial for successful software development. By applying principles like compartmentalization, interdependence, and time allocation, projects can be better managed. PERT and CPM are key techniques that help in planning and identifying critical tasks, ensuring timely project completion. Gantt charts offer a clear visual representation of the project timeline, aiding in coordination and tracking progress.

EXPERIMENT - 4

Aim:- Develop a Software project management planning (SPMP) for the specific module

Seven Basic Principles Of Software project scheduling :

- **Compartmentalization:**
 - **Interdependence**
 - **Define Responsibility**
 - **Define Outcomes**
 - **Time Allocation**
 - **Define Milestone**
- I. **Compartmentalization :** Compartmentalization is the division of something into distinct sections or parts to manage complexity, improve focus, or enhance security. It applies to psychology, organizations, engineering, and biological systems.
 - II. **Inter dependencies :** Inter dependencies are mutual relationships where components or entities rely on each other to function effectively. Changes or issues in one element affect others, creating a network of interconnected dependencies.
 - III. **Effort validation :** Effort validation is the process of verifying and assessing the accuracy and effectiveness of the work or resources expended on a project. It ensures that efforts align with intended goals and outcomes
 - IV. **Define responsibility :** The obligation to perform tasks or make decisions, encompassing accountability for actions and their results within a role or project.
 - V. **Define outcomes :** The end results or effects of actions and processes, indicating whether goals or objectives have been achieved.
 - VI. **Define milestone :** Significant events or stages in a project that mark progress and achievement, serving as indicators of development.
 - VII. **Time allocation :** The strategic assignment of available time to various tasks or activities to ensure optimal productivity and adherence to deadlines.

Two methods of scheduling

1. Program Evaluation and Review Technique

2. Critical path method (cpm):

1. Program Evaluation and Review Technique (PERT)

Overview:

- **Purpose:** Used primarily for projects with uncertain activity durations.
- **Focus:** Emphasizes the time required to complete tasks and the project's overall completion time.
- **Developed:** In the 1950s by the U.S. Navy for the Polaris submarine program.

Key Features:

- **Time Estimates:** Uses three time estimates for each activity—Optimistic (O), Pessimistic (P), and Most Likely (M). The Expected Time (TE) is calculated using the formula: $TE = \frac{O + 4M + P}{6}$
- **Probabilistic Nature:** Accounts for uncertainty and variability in activity durations.
- **PERT Chart:** A network diagram showing project tasks and their dependencies with activities as arrows and milestones as nodes.

Advantages:

- Effective for projects with uncertain durations.
- Helps identify potential delays and manage risks.
- Provides a visual representation of task dependencies.

Disadvantages:

- Can be complex and time-consuming to develop and update.
- Relies heavily on accurate time estimates.
- Less focus on resource management.

2) Critical Path Method (CPM):

Critical Path Method (CPM) is a project management technique used to determine the longest sequence of dependent tasks and to identify the shortest time in which a project can be completed.

Here's how CPM works:

- **Identify Tasks:** List all tasks required to complete the project, including their duration and dependencies.
- **Create a Network Diagram:** Develop a flowchart or network diagram that maps out the tasks and their dependencies.
- **Determine the Critical Path:** Calculate the longest path through the network diagram, which is the sequence of dependent tasks that determines the project's minimum duration. The critical path has the least amount of slack or float.
- **Monitor and Manage:** Focus on tasks within the critical path to avoid delays, as any delay in these tasks will directly impact the project's completion time.

Benefits:

- Helps in identifying the most important tasks that could affect the project timeline.
- Provides insights into the project's schedule flexibility and potential areas for improvement.
- Facilitates better resource management by highlighting tasks with the least amount of slack.

Limitations:

- Can be complex to set up and manage for large projects.
- Requires accurate estimation of task durations and dependencies to be effective.

What is a Gantt Chart?

- **Definition:** A Gantt Chart is a type of bar chart that represents a project schedule. It shows the start and end dates of project elements, their durations, and how they overlap or link to each other.
- **Purpose:** It is used to plan, coordinate, and track specific tasks in a project, providing a visual timeline for project management

Conclusion: Effective software project scheduling relies on principles like compartmentalization, interdependencies, clear responsibilities, and time management. PERT and CPM are key techniques for managing project timelines, with PERT focusing on uncertain task durations and CPM identifying the critical path for timely completion. Gantt Charts visually track project progress, making these tools essential for successful project management.