

ClubFit - A Social-Media Enabled Gym Management System

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Abstract - This research paper investigates the potential of social media integration in gym management systems to motivate gym members to be more consistent in their attendance and improve their gym experience. The paper examines the use of social media to increase dopamine levels in gym members, which has been shown to have a positive impact on attendance rates. By analyzing the key features and benefits of a social media enabled gym management system, this paper provides insights into how social media can be leveraged to enhance member engagement, retention, and satisfaction. The paper also explores the challenges and opportunities in developing a social media enabled gym management system and evaluates its impact on member behaviour. The findings suggest that social media integration in gym management systems can have a significant positive impact on gym attendance and member satisfaction. The paper concludes by offering recommendations for gym owners and managers on how to leverage social media to motivate gym members and improve their overall gym experience.

Key Words: social media, gym management system, gym, virtual reward system.

1. INTRODUCTION

The fitness industry has experienced significant growth over the years, with a growing number of people embracing healthy lifestyles and prioritizing regular exercise. Despite this trend, gym attendance remains a challenge for many individuals. Consistent attendance is critical for achieving fitness goals and maintaining good health, but motivation to exercise regularly can often wane over time. Gym owners and managers have responded to this challenge by turning to social media to increase member engagement, retention, and satisfaction. This research paper examines the potential of a social media enabled gym management system to address the challenge of consistent attendance by exploring how social media can be leveraged to motivate gym members to visit the gym regularly and enhance their overall gym experience. Additionally, this paper will analyze the role of dopamine levels in motivating gym attendance, and explore how social media can contribute to increasing dopamine levels. By identifying the key features, benefits, challenges, and opportunities of social media integration in gym management systems, this paper aims to provide insights and recommendations for gym owners, managers, and developers on how to leverage social media to motivate gym members and improve their gym experience.

2. PURPOSE

The purpose of this project is to develop a social media enabled gym management system that integrates two main modules: the social media module and the gym management module. The social media module enables gym members to share their achievements, exercise routines, diet plans, and other related information with other members, fostering a sense of community and motivation among members. The gym management module focuses on the operational aspects of the gym, such as monitoring attendance, staff, and other management tasks. By combining these two modules, this project aims to create a comprehensive gym management system that enhances member engagement, retention, and satisfaction. The project's main goal is to explore how social media integration can improve gym attendance and member satisfaction by leveraging the motivational and community-building potential of social media. Additionally, this project seeks to evaluate the feasibility and effectiveness of a social media enabled gym management system and provide recommendations for gym owners and managers on how to leverage this system to enhance member engagement and achieve business goals.

3. PROJECT SCOPE

Owing to the rapid development of the city, busier modern life and living in urban areas without space to exercise, the gymnasium leads to exercise development. When people go to the gym, they don't know training which part to choose the right equipment, where the fitness equipment is, or should to spend how much time to exercise this part when starting fitness. Nutritional awareness is also related to knowledge of the interrelationships between nutritional matters and human life, which may affect a person's life. In the present study, nutritional awareness entails being cognizant of the kind of foods an individual eats and the reasons for eating such foods. The social media reward system mimics the structure of rewards and incentives in a game that inspires intrinsic motivation in the player while also offering extrinsic rewards. Hence in this gym management site, we aim to implement a system that can enable a gym-goer to easily gain knowledge by utilizing the concept of a social media platform that is managed by the local gym admin and consists of the local community at the gym. This system can prove to be helpful by providing

motivation to go to the gym and a competitive environment for all users.

4. PROJECT GOALS AND OBJECTIVES

The **Goals** that our ClubFit web application aims to achieve are:

- To develop a comprehensive social media enabled gym management system that integrates the motivational and community-building potential of social media with gym management tasks.
- To increase member engagement, retention, and satisfaction by leveraging the social media module to foster a sense of community among members and motivate them to achieve their fitness goals.
- To improve operational efficiency and support business growth by incorporating features that enable gym owners to monitor attendance, track staff performance, and analyze member data to inform business decisions.
- To create a scalable and customizable system that can accommodate the needs of gyms of different sizes and types.
- To provide gym owners and managers with a user-friendly platform that enhances their ability to manage their gym and improves their member's experience.

The **Objectives** of ClubFit are as follows:

- Conduct a thorough literature review on the application of social media and gym management systems in the fitness industry.
- Conduct a poll of gym managers, owners, and patrons to determine the salient features and advantages of a social media-enabled management system for fitness facilities.
- Use case studies and expert interviews to analyse the opportunities and challenges of creating a social media-enabled gym management system.
- Create a working prototype of a social media-enabled gym management system, and employ user testing to assess usability and efficiency.
- Based on the research's findings, offer ideas and guidelines for gym owners, managers, and developers on how to incorporate social media into their gym management systems.

5. PROJECT MANAGEMENT APPROACH

Agile methodology is an iterative and incremental approach to project management that focuses on delivering a working product promptly while adapting to changing requirements and priorities. Here is an overview of how Agile methodology can be applied to the development of a gym management system:

- **Planning:** In this phase, the project team meets with stakeholders to define the project scope, goals, and requirements. The team identifies key features and functionalities of the gym management system, creates a product backlog, and defines user stories and acceptance criteria.

- **Sprint planning:** In this phase, the team selects user stories from the product backlog to be completed during the current sprint. The team creates a sprint backlog, which includes tasks to be completed and estimates of the time and effort required to complete them.
- **Sprint execution:** In this phase, the team completes the tasks defined in the sprint backlog. The team meets daily for short stand-up meetings to review progress, identify and resolve issues, and plan for the next day's work.
- **Sprint review:** In this phase, the team presents the completed user stories and features to stakeholders for feedback. Stakeholders provide feedback on the functionality, usability, and performance of the gym management system.
- **Sprint retrospective:** In this phase, the team reflects on the sprint and identifies opportunities for improvement. The team discusses what went well, what could be improved, and actions to take in the next sprint.
- **Repeat:** The team repeats the process, selecting new user stories for the next sprint, completing the work, and gathering feedback from stakeholders until the gym management system is completed.

6. SOFTWARE REQUIREMENTS SPECIFICATION

- The social media enabled gym management system is a web application designed to provide a seamless experience for gym members and owners. The system will allow gym members to create an account and securely log in to access various features, such as sharing their exercise routines, diet plans, and achievements with other members. Gym members will also be able to schedule appointments and classes through the system. On the other hand, gym owners will be able to manage their gym's operation, including monitoring attendance, staff, and equipment usage. Additionally, gym owners will be able to create and publish promotional content on social media platforms, monitor and analyze social media engagement and trends, and integrate with IoT devices and sensors for gym equipment monitoring and maintenance. The system will be developed using modern software development tools and frameworks, and it will be compatible with popular social media platforms and APIs. The system will also prioritize user data and privacy, ensuring a high level of security and compliance with relevant laws and regulations. Finally, the system will be scalable, reliable, and available 24/7 to accommodate future growth and changes.

7. PRODUCT FEATURES

Feature	Description
User registration and login	Users can create an account and log in to access the member dashboard
Appointment scheduling	Members can schedule appointments with trainers and book classes
Social media sharing	Members can share their achievements and routines on social media
Management dashboard	Gym owners can view and manage gym operations from one central dashboard
Staff management	Gym owners can manage their staff, assign tasks, and monitor performance
Secure data storage	All user data is stored securely to protect privacy
Reporting and data analysis	Gym owners can generate reports and analyze data to improve gym operations

8. USER CLASSES AND CHARACTERISTICS

- **Gym Members:** These are individuals who have registered to become members of the gym. They typically have varying fitness goals, exercise routines, and diet plans. They are interested in using the social media module to share their progress, connect with other members, and stay motivated. They may have different levels of experience with technology and social media.
- **Gym Trainers:** These are certified trainers who work at the gym and are responsible for providing guidance and motivation to gym members. They use the appointment scheduling module to manage their schedules and communicate with members. They may have different levels of experience with technology and social media.
- **Gym Owners/Managers:** These are the individuals who own or manage the gym. They are interested in using the gym management module to monitor gym attendance, manage staff, schedule equipment maintenance, and generate reports. They may have different levels of experience with technology and social media.
- **Administrators:** These are individuals responsible for managing the technical aspects of the web application. They are responsible for ensuring the system is secure, reliable, and scalable. They require advanced technical knowledge and experience with web development and server administration.

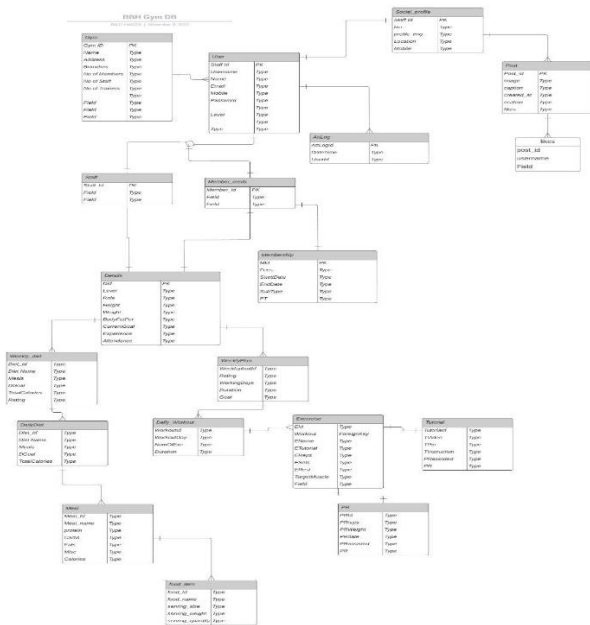
9. SYSTEM FEATURES

- **User Authentication:** Users can securely create an account, log in and out of the system.
- **Community Sharing:** Users can post updates, share photos and videos, and interact with other members via social media such as Facebook, Twitter, Instagram, and LinkedIn.
- **Fitness Tracker:** Users can track their workouts, set goals and monitor their progress.
- **Employee Management:** Managers can manage working hours, pay, and other administrative tasks.
- **Mobile Compatibility:** The system, which can be used from mobile devices, allows users to access their accounts and work whenever and wherever they want.
- **Feedback:** The system allows members to provide feedback about their experience at the gym that can be used to improve the overall user experience.
- **Virtual Rewards System:** This system includes virtual rewards that allow members to earn points or badges by reaching health goals, learning continuously or completing tasks. These rewards can be used for discounts or other benefits on future gym services that help encourage members to join the gym community and stay fit.

11. NON-FUNCTIONAL REQUIREMENTS

- **Usability:** The system should be easy to use and intuitive for gym staff and members. It should have clear instructions and a simple interface and require little training to use.
- **Security:** The system must be secure and protect users' data and personal information from unauthorized access or misuse. It should use encryption and other security measures to prevent data breaches and ensure data privacy.
- **Scalability:** The system must be able to scale up or down to accommodate changes in users, data volume or load. It should be able to handle growth without sacrificing performance or reliability.
- **Compatibility:** In order for users to access from any platform or device, the system must be compatible with different devices, operating systems and browsers.

12. SYSTEM ARCHITECTURE DESIGN



The post should be added with an image or video and the description is optional. The users can also like each other's posts and follow each other. This improves communication within the local community of the gym.

```
class CreatePost(LoginRequiredMixin, generic.CreateView):
    fields = ('message', 'image', 'video')
    model = models.Post
    success_url = reverse_lazy('posts:all')

    def form_valid(self, form):
        self.object = form.save(commit=False)
        self.object.user = self.request.user
        self.object.save()
        return super().form_valid(form)

class PostDetail(LoginRequiredMixin, generic.DetailView):
    model = models.Post
    template_name = 'posts/post_detail.html'
    context_object_name = 'post'

    def get(self, request, *args, **kwargs):
        post = models.Post.objects.get(pk = kwargs.get('pk'))
        post_data = {}
        post_data['pk'] = post.pk
        post_data['user'] = post.user
        post_data['message'] = post.message
        post_data['image'] = post.image
        post_data['video'] = post.video
        post_data['created_at'] = post.created_at
        post_data['like count'] = len(post.likes.all())
        post_data['liked'] = post.likes.filter(username = request.user).exists()
        context = {'post': post_data}
        return render(request, self.template_name, context)

    def post(self, request, *args, **kwargs):
        post = models.Post.objects.get(pk = request.POST.get('pk'))
        if post.likes.filter(username = request.user).exists():
            post.likes.remove(request.user)
        else:
            post.likes.add(request.user)
        post.save()
        return self.get(request, *args, **kwargs)

class DeletePost(LoginRequiredMixin, generic.DeleteView):
    model = models.Post
    success_url = reverse_lazy('posts:all')

    def delete(self, *args, **kwargs):
        messages.success(self.request, 'Post Deleted')
        return super().delete(*args, **kwargs)
```

13. SUB-SYSTEM ARCHITECTURE

Module1-SignUp and Login

Create a ClubFit account, A user would need to create an account on the ClubFit platform. The user would enter their personal information, such as their name, email address, and password. Their personal information can be used to find the best exercises and monitor their success over time.

```
class SignUpView(CreateView):
    form_class = forms.UserSignUpForm
    success_url = reverse_lazy('accounts:login')
    template_name = 'accounts/signup_new.html'

class SignUpDetailsView(CreateView):
    form_class = forms.UserDetailsForm
    success_url = reverse_lazy('accounts:user-dashboard')
    template_name = 'accounts/signup-details_new.html'

    def form_valid(self, form):
        self.object = form.save(commit=False)
        self.object.user_name = self.request.user
        self.object.save()
        return super().form_valid(form)

class UserSignUpForm(UserCreationForm):
    class Meta:
        fields = ('username', 'first_name', 'last_name', 'email', 'password1', 'password2')
        model = User

    #to customise the default form:
    def __init__(self, *args, **kwargs):
        super().__init__(*args, **kwargs)
        self.fields['username'].label = '@Username / Display Name'
        self.fields['email'].label = 'Email Address'

class UserDetailsForm(ModelForm):
    class Meta:
        model = UserDetails
        fields = ('gym', 'level', 'role', 'height', 'weight', 'bfp', 'goal', 'experience', 'profile_img', 'role')
```

Module3-Create Group

Create a member or community group, a user can create a group within a community of his gym or he/she can join the already existing group.

```
class CreateGroup(LoginRequiredMixin, generic.CreateView):
    fields = ('name', 'description')
    model = Group
    success_url = reverse_lazy('groups:all')

class JoinGroup(LoginRequiredMixin, generic.RedirectView):

    def get_redirect_url(self, *args, **kwargs):
        return reverse('groups:single', kwargs={'slug': self.kwargs.get('slug')})

    def get(self, request, *args, **kwargs):
        group = get_object_or_404(Group, slug=self.kwargs.get('slug'))
        try:
            GroupMember.objects.create(user=self.request.user, group=group)
        except IntegrityError:
            messages.warning(self.request, ('Warning, already a member of {}'.format(group.name)))
        else:
            messages.success(self.request, 'You are now a member of the {} group.'.format(group.name))
        return super().get(request, *args, **kwargs)

class LeaveGroup(LoginRequiredMixin, generic.RedirectView):

    def get_redirect_url(self, *args, **kwargs):
        return reverse('groups:single', kwargs={'slug': self.kwargs.get('slug')})

    def get(self, request, *args, **kwargs):
        try:
            membership = models.GroupMember.objects.filter(
                user=self.request.user,
                group_slug=self.kwargs.get('slug')
            ).get()
        except models.GroupMember.DoesNotExist:
            messages.warning(
                self.request,
                "You can't leave this group because you aren't in it."
            )
        else:
            membership.delete()
            messages.success(
                self.request,
                "You have successfully left this group."
            )
        return super().get(request, *args, **kwargs)

class SingleGroup(generic.DetailView):
    model = Group

class ListGroups(generic.ListView):
    model = Group
```

Module2-Add Post

Module4-Exercise

Users can search for exercise by using keywords, muscle groups, equipment or other filters. They can view information

about each exercise, such as the proper form, recommended sets and reps, and any equipment needed.

15. USE CASE DIAGRAM

```
class ListExercise(ListView):
    model = models.Exercise
    template_name = 'exercise/exercise-list.html'

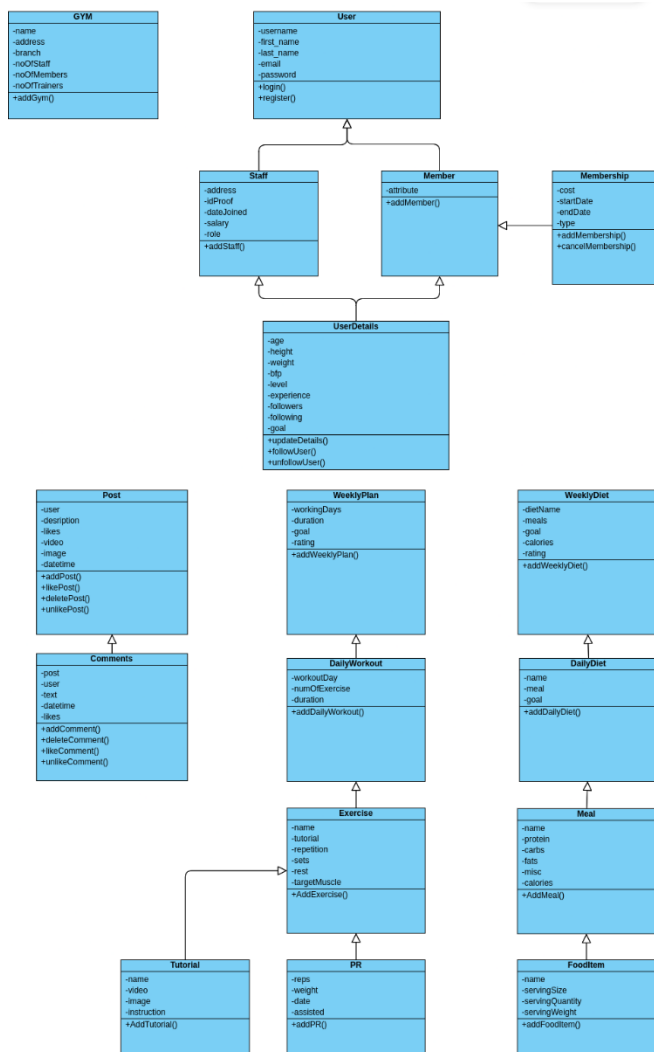
class ExerciseDetail(DetailView):
    model = models.Exercise
    template_name = 'exercise/exercise-list.html'

class CreateExercise(CreateView):
    model = models.Exercise
    fields = ('__all__',)
    template_name = 'exercise/exercise-create.html'
    success_url = reverse_lazy('exercise:exercise-list')

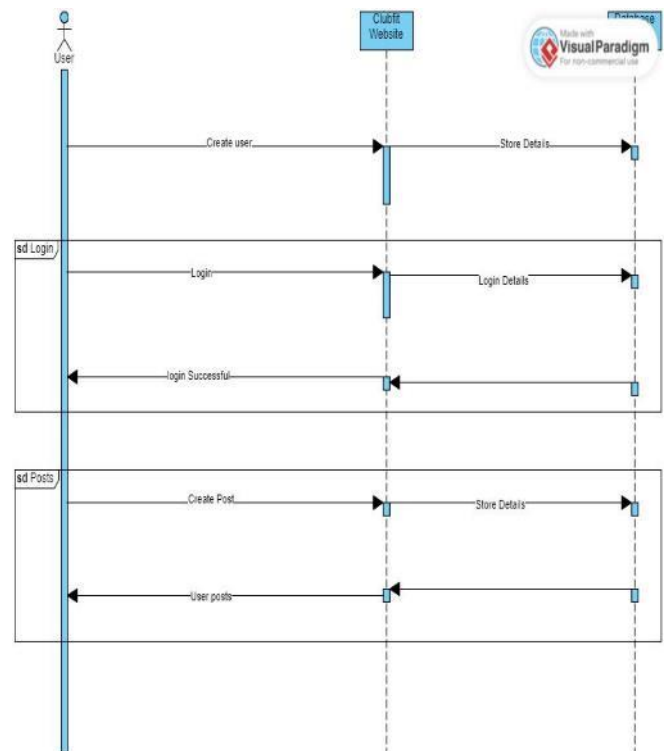
class UpdateExercise(UpdateView):
    model = models.Exercise
    fields = ('__all__',)
    template_name = 'exercise/update-exercise.html'

class DeleteExercise(DeleteView):
    model = models.Exercise
    success_url = reverse_lazy('exercise/exercise-list')
```

14. CLASS DIAGRAM



15. Sequence Diagram



16. IMPLEMENTATION

1. Define requirements: Start by identifying the requirements for the social media-enabled gym management system. Determine the features and functions that will be needed to integrate social media, such as social media sharing, likes and comments, and user profiles.

2. Choose a platform: Select a platform that allows for social media integration, such as a gym management system that has built-in social media capabilities or a third-party integration tool.

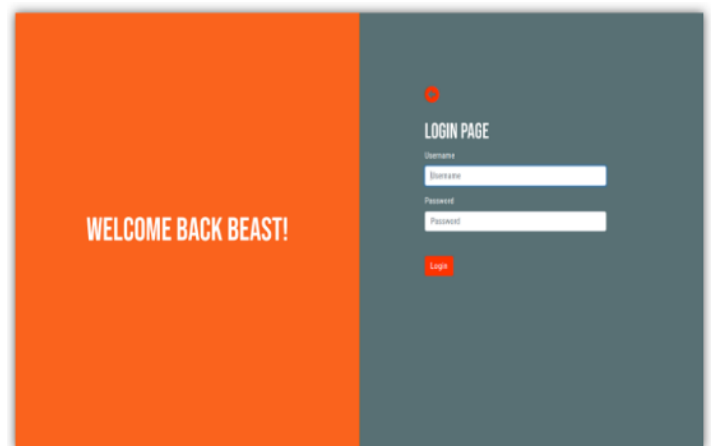
3. Design the user interface: Design the user interface for the gym management system to incorporate social media features. Make sure the design is user-friendly and intuitive, with clear navigation and easy-to-use tools for social media sharing, commenting, and liking.

4. Integrate social media: Integrate social media features into the gym management system. This may involve adding social media sharing buttons, creating user profiles, and enabling social media commenting and liking.

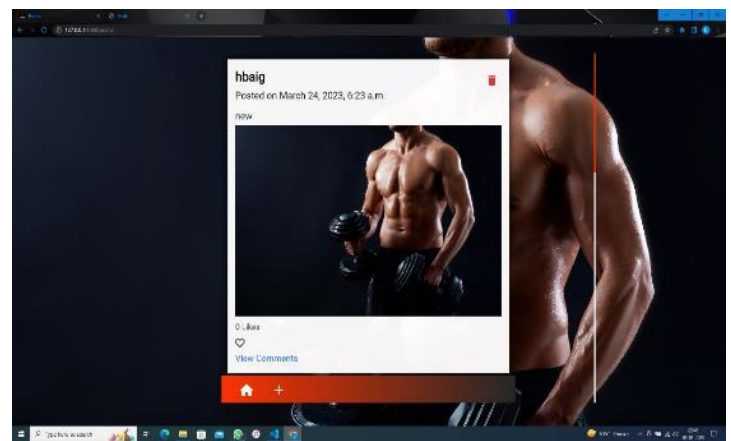
5. Test the system: Test the system thoroughly to ensure that social media integration is working correctly. This should involve testing for functionality, usability, and security.

6. Launch the system: Once testing is complete, launch the social media-enabled gym management system. Provide training and support to gym staff and members to help them use the system effectively.

7. Monitor and update: Monitor the system regularly to ensure that social media features are working correctly and to make updates and improvements as needed. This may involve updating the user interface, adding new social media features, or improving security measures.

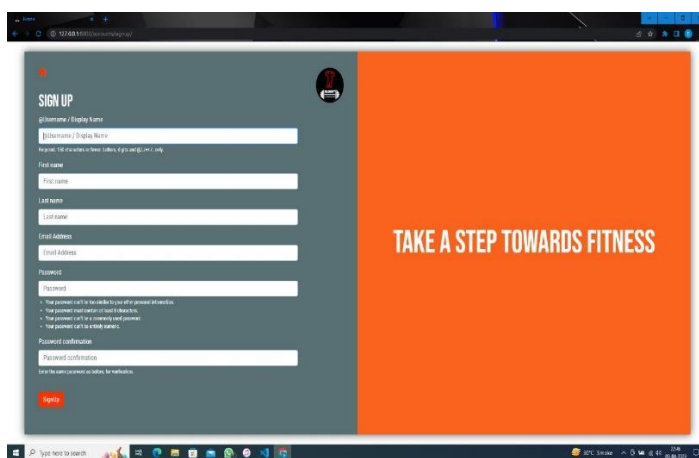


3. Posts listing: Test the post listing process to ensure that posts are displayed correctly as per the user's following.



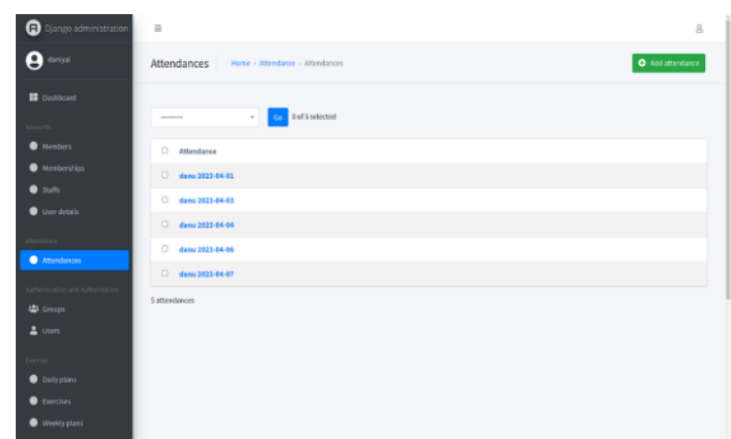
17. SYSTEM TESTING

1. SignUp: Test the signup process to ensure that users can create their accounts securely and their data is protected.



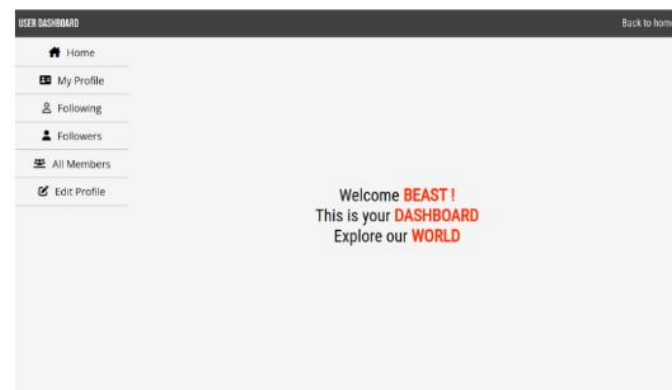
2. Login: Test the login process to ensure that users can access their accounts securely and their data is protected.

4. Member's Attendance record: Test the members' attendance process to ensure that attendance is recorded correctly.

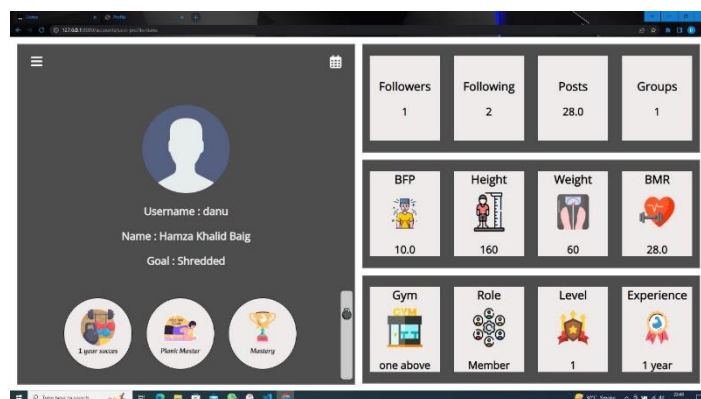


Result:

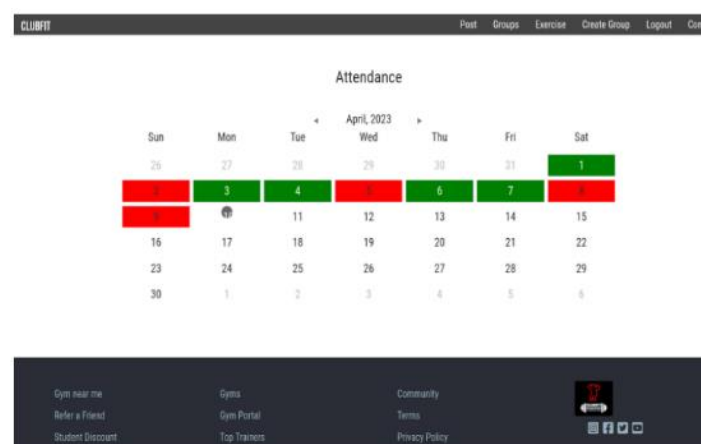
Login Done:



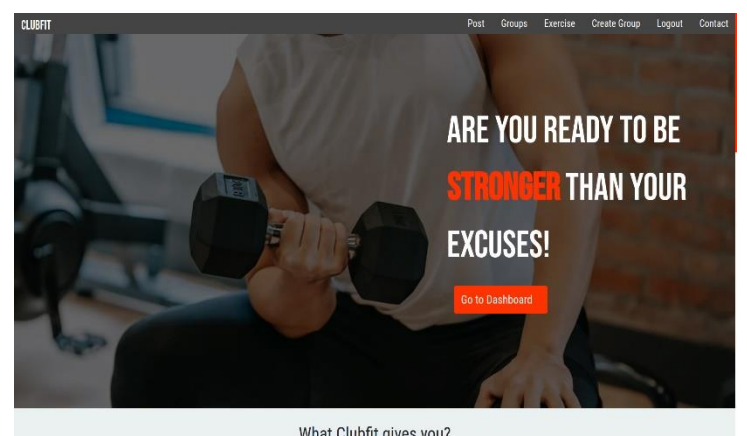
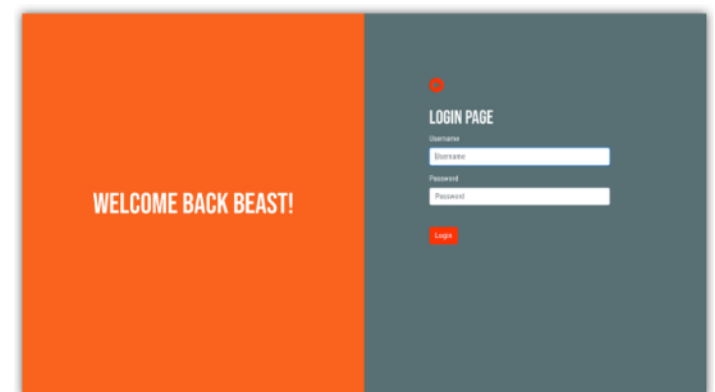
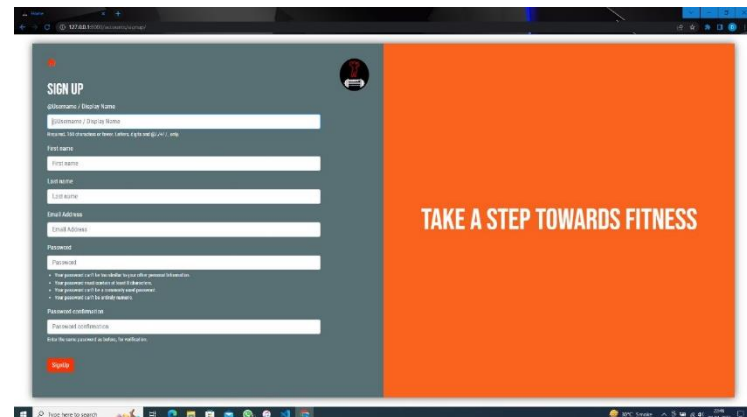
User Profile Details:

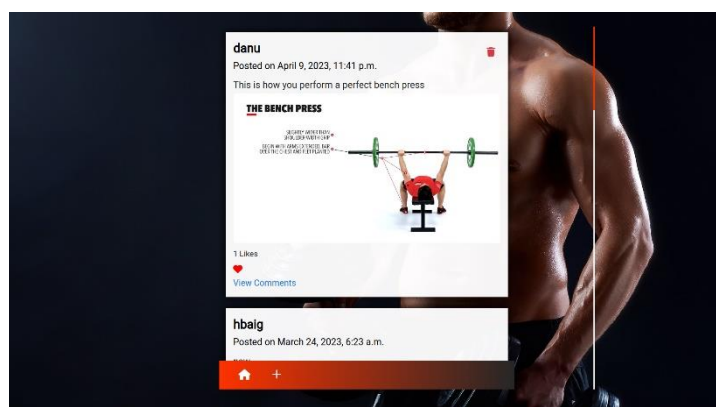
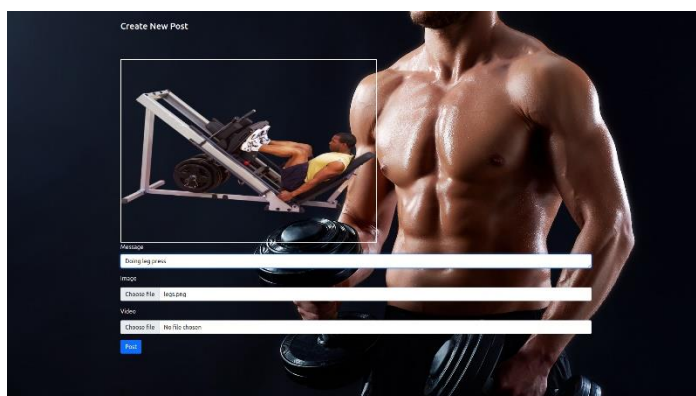
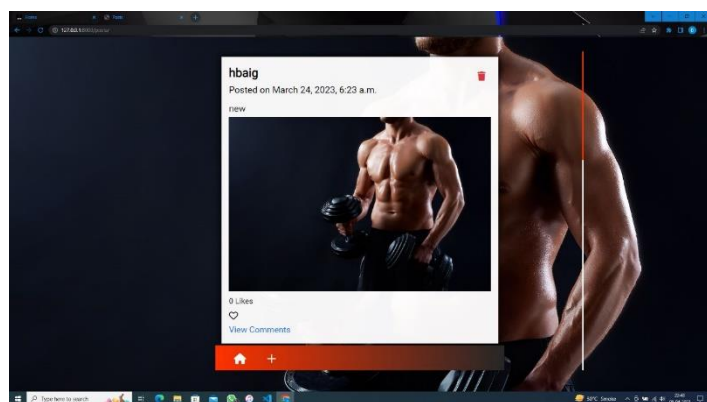
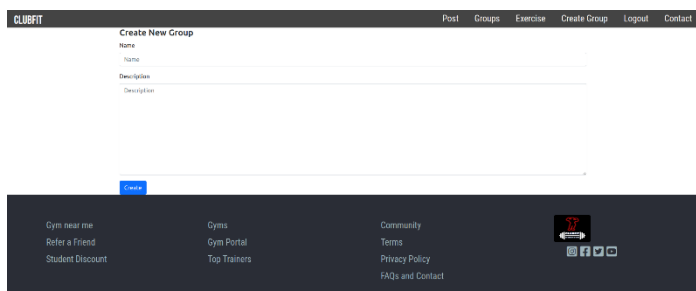
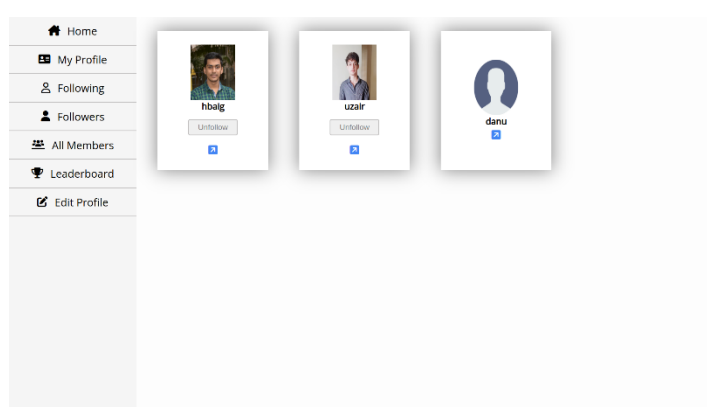
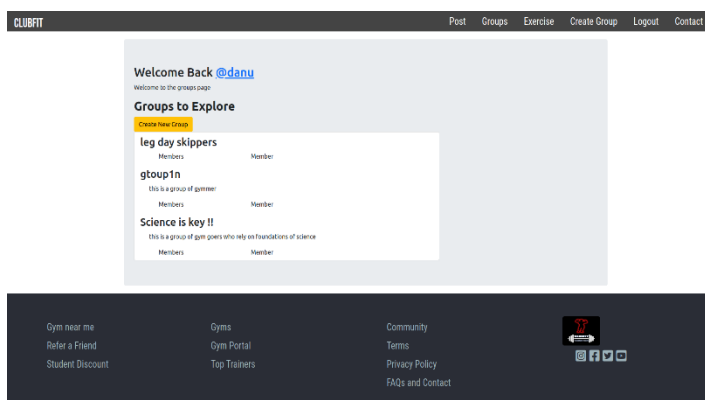
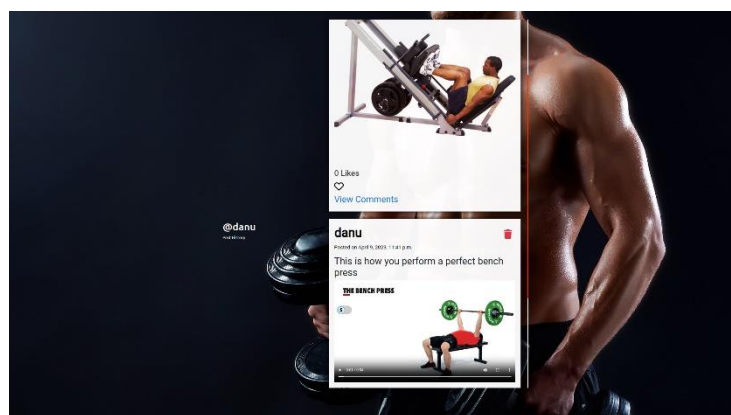
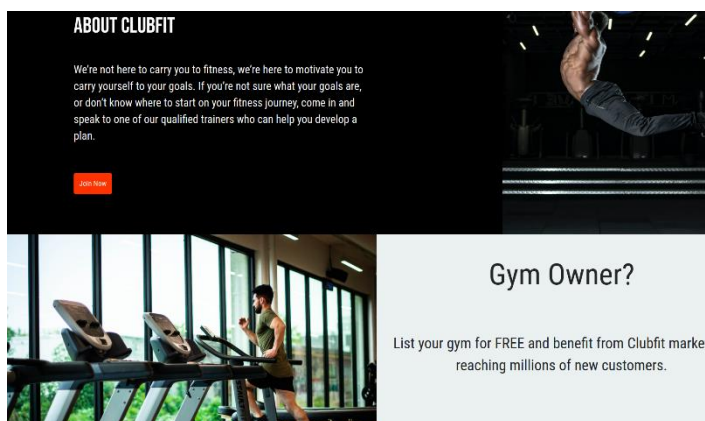


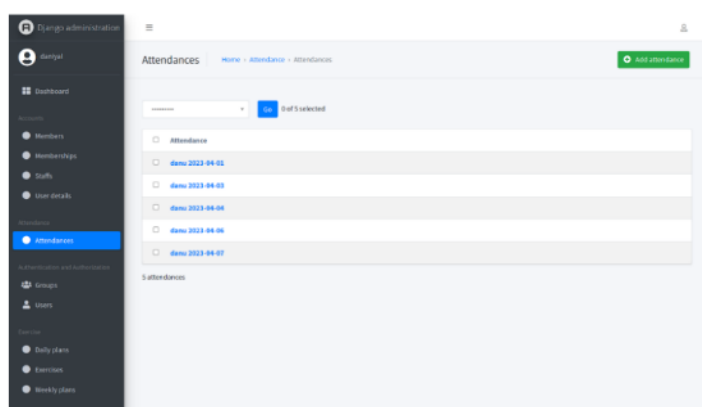
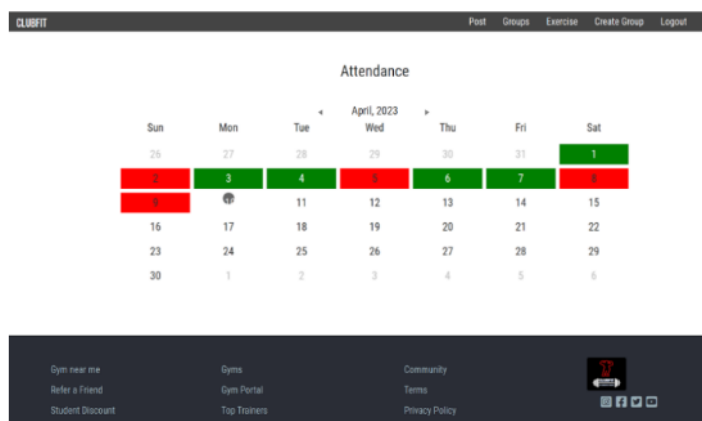
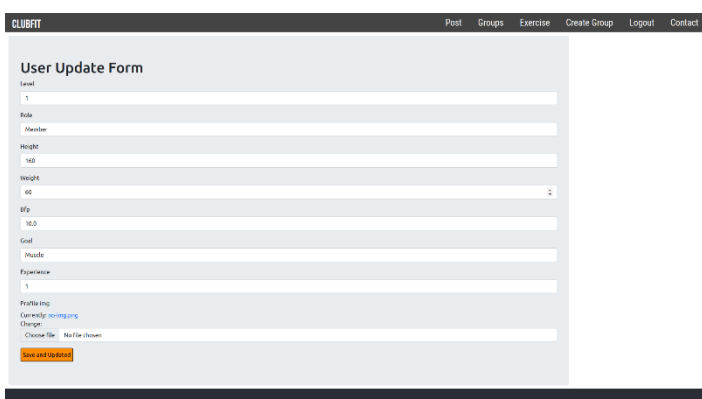
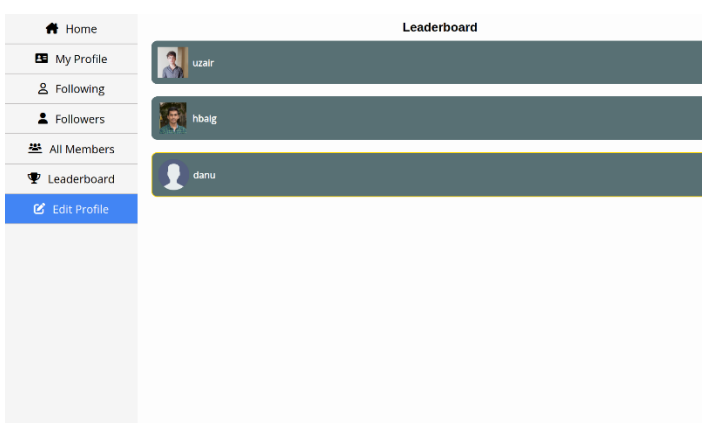
User Attendance:



18. SCREENSHOTS OF WEBSITE





19. CONCLUSIONS

In conclusion, a social media-powered gym management system has the potential to transform the energy industry by using the power of social media to empower gym members and improve their overall experience. By enabling gym members to connect and share their achievements, routines, and meal plans, the system creates a sense of community and responsibility. A solution that can help improve gym membership. In addition, the system helps improve efficiency and boost productivity by providing gym members with advanced tools that are perfect for tracking attendance, managing staff, and exercising at the gym. Overall, a social media-enabled gym management system offers gym owners a promising opportunity to increase customer engagement and satisfaction while driving better business.

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