



Mind VR

VR Therapy for Mental Health

MIS 6308 – System
Analysis and Project
Management

Prepared by -
ISHIKA SINGH CHANDEL
DIVYANKUSH N GHUGE
VIVEK PANI
VENKATA AJITH MEDA
VIJAY MANI DEV KALURI

Problem Statement

In a world where anxiety, panic, and PTSD affect millions, traditional therapies face limitations in accessibility, effectiveness, cost, and stigma.

Urgent recognition of the need for innovative and accessible mental health treatments to address these challenges.



Current Situation (Statement of Purpose)

- Introducing "**MindVR**," a cutting-edge VR therapy application transforming mental health treatment.
- **Goal:** Overcome obstacles by providing accessible, practical, and efficient therapeutic support for anxiety, panic, and PTSD.



MindVR Approach

- MindVR leverages VR technology for accessible mental health care, eliminating geographical and budgetary constraints.
- Tailored therapeutic experiences designed to meet individual needs, fostering inclusivity.



Transparency and Progress Tracking

- MindVR provides tools for users and mental health professionals to track progress and observe therapeutic results.
- Enhancing transparency and data-driven decision-making in mental health treatment.



Overall Goal

Development of MindVR with the following objectives:

- Revolutionize Mental Health Treatment
- Enhance Accessibility
- Personalized Therapy
- Effectiveness and Progress Tracking
- Reducing Stigma
- Collaboration with Professionals



Business Needs and Solutions

Effective Treatment: Delivering transformative mental health solutions for anxiety, panic, and PTSD.

Enhanced Accessibility: Overcoming geographic and budgetary limitations to make mental health care accessible.

Personalized Therapy: Offering tailored VR scenarios for engaging and impactful therapeutic experiences.



Data-Driven Progress: Implementing a robust system for tracking and analyzing treatment progress.

Collaboration with Professionals: Providing real-time therapist support for immediate guidance during therapy.

Technological Compatibility: Ensuring seamless integration with major VR platforms (Oculus Rift, HTC Vive).

Privacy and Security Compliance: Implementing strong measures to protect user data and ensure compliance.



Project Objectives


Immersive VR Therapy Application: Develop MindVR with tailored therapeutic scenarios aiming for an average user satisfaction rating of 4.5 out of 5 in feedback surveys three months post-launch.

Platform Compatibility: Ensure MindVR compatibility with major VR platforms (Oculus Rift, HTC Vive, Oculus Quest) within four months from the project start date.

User Progress Tracking System: Implement a user progress tracking system in MindVR, maintaining a user engagement rate of at least 80% three months after integration.

Real-Time Therapist Support: Develop and fully functionalize a real-time therapist support feature within MindVR within five months from project commencement.

Enhanced Accessibility: Improve MindVR accessibility, making mental health therapy readily available to a broader audience within six months from the project's start date.



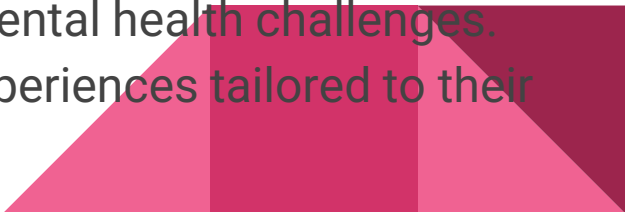
Project Scope

In Scope:

Designing VR Technology:

- Leverage advanced VR development platforms for an immersive and user-friendly virtual reality environment.
- Ensure compatibility with popular VR headsets like Oculus Rift, HTC Vive, and Oculus Quest.

Tailored Therapeutic Scenarios:

- Develop a library of scenarios addressing specific mental health challenges.
 - Provide users with a variety of immersive therapy experiences tailored to their unique needs.
- 

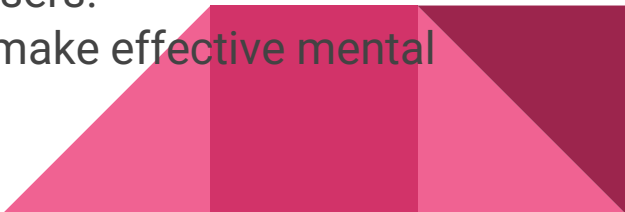
Monitoring User Progress:

- Implement a robust user progress tracking system.
- Collect and analyze user interactions during therapy sessions to enhance therapy effectiveness and provide valuable insights.

Real-Time Therapist Support:

- Develop a real-time communication feature within MindVR.
- Enable users to connect with mental health professionals for immediate guidance and support during therapy sessions.

Enhanced Accessibility:

- Ensure MindVR is easily accessible to a wide range of users.
 - Make it portable across various hardware platforms to make effective mental health therapy readily available.
- 

Out of Scope:

- **Hardware Development:**

Creating VR headsets is not within the project scope.

- **In-Depth Clinical Therapy or Diagnosis:**

The project focuses on supportive therapy experiences rather than providing clinical therapy or diagnosis.



STAKEHOLDER

Internal Stakeholders:

- Development Team
- Researchers and Scientists
- Project Manager
- Marketing Team

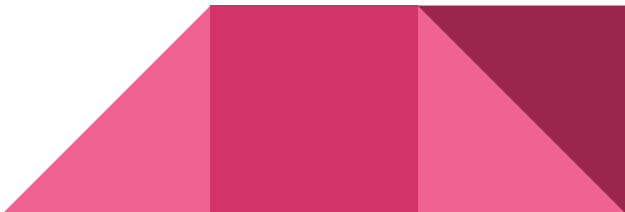
External Stakeholders:

- End Users
- Mental Health Professionals & Healthcare Institutions
- VR Hardware Manufacturers
- Government and Regulatory Bodies

Operational Stakeholders:

- End Users Interacting with MindVR
- Mental Health Professionals

Executive Stakeholders:

- Company Leadership
 - Investors and Funding Agencies
- 

System Capabilities

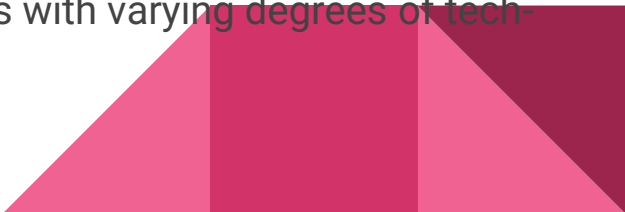
Compatibility:

- MindVR seamlessly works with popular VR headsets and platforms (Oculus Rift, HTC Vive, etc.).
- Easily usable on various hardware setups for maximum accessibility.

Immersive Scenarios:

- Immerse users in realistic 3D scenarios tailored to their mental health needs.
- Provide a captivating and therapeutic virtual experience.

Secure and User-Friendly Interface:

- Offer a secure and user-friendly interface catering to individuals with varying degrees of tech-savviness.
 - Prioritize ease of use and accessibility for a diverse user base.
- 

Integration of Therapist Support:

- Users can connect with mental health professionals within the VR environment for immediate guidance and support during therapy.
- Healthcare professionals can remotely monitor sessions and provide valuable feedback.

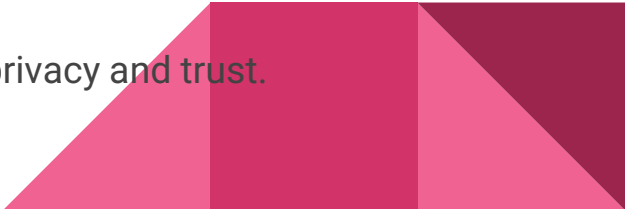
Progress Tracking:

- Users can easily monitor their therapy progress within the system.
- Track achievements and personal growth to enhance the overall therapy experience.

Customization:

- Provide therapists with the flexibility to tailor therapy scenarios to each patient's unique requirements.
- Enhance the effectiveness of therapy through personalized experiences.

Privacy and Security:

- Ensure the safety and confidentiality of user data as a top priority.
 - Adhere to all relevant data protection regulations to maintain user privacy and trust.
- 

Project Assumptions

Hardware: Assumes users have compatible VR hardware, considering potential availability variations.

User Engagement: Assumes consistent user engagement with MindVR for therapy success.

Mental Health Expertise: Assumes access or collaboration with professionals for therapy scenarios, recognizing potential quality impact without expert input.

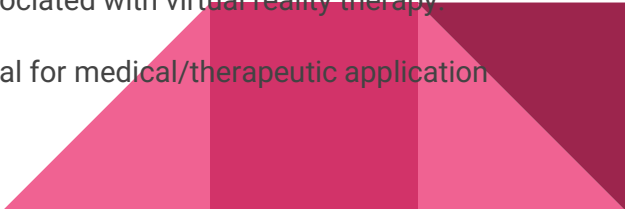
Stakeholder Collaboration: Assumes willingness of mental health professionals to collaborate, providing insights for MindVR adoption.

Data Privacy: Assumes implemented measures effectively protect user data and comply with regulations.

Resource Availability: Assumes availability of necessary resources (development tools, VR technology, dedicated team) for project execution within defined timeframe.

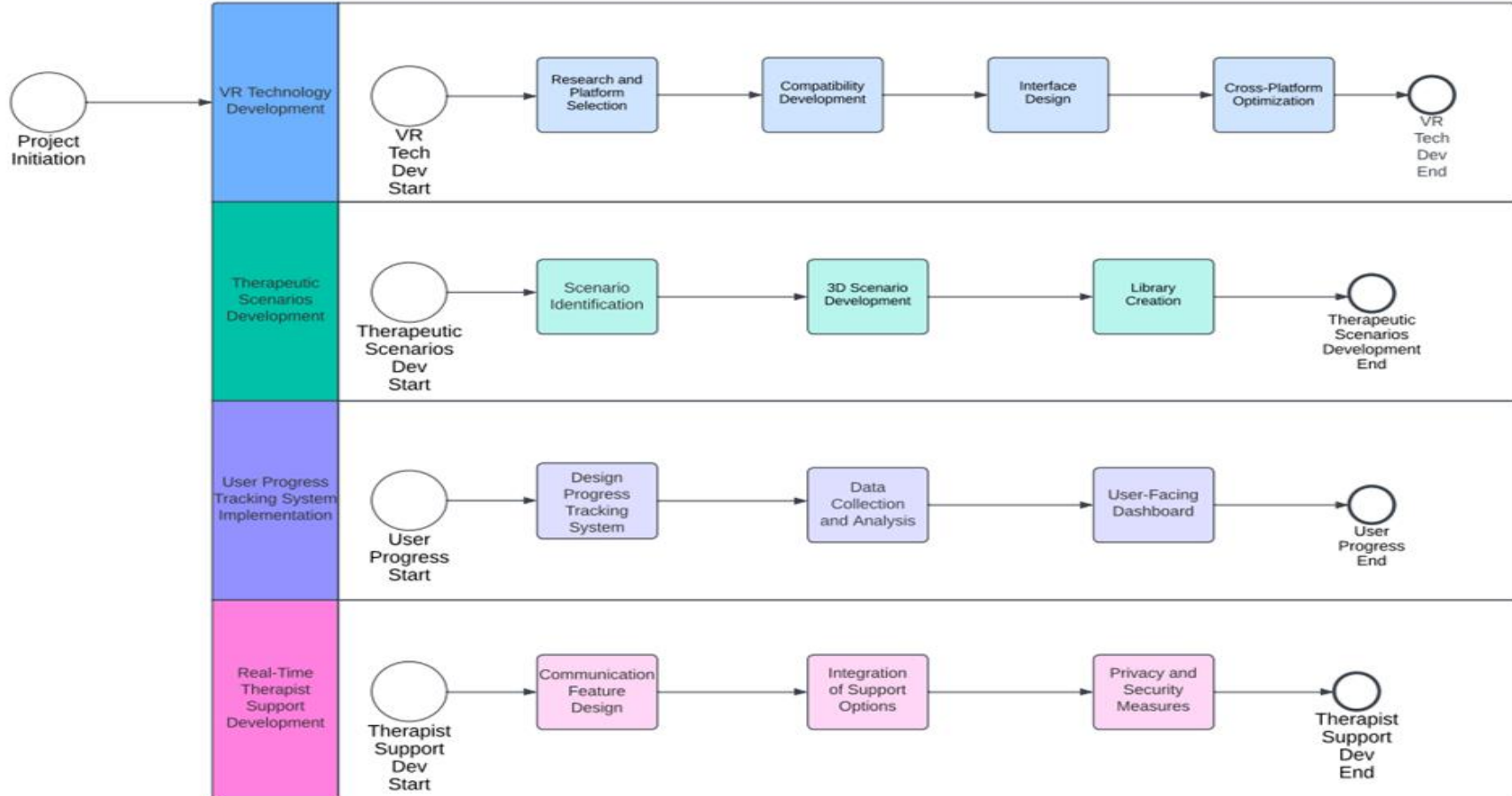
User Acceptance: Assumes positive MindVR reception by users, aiming to reduce stigma associated with virtual reality therapy.

Regulatory Approvals: Assumes timely acquisition of required approvals/certifications, crucial for medical/therapeutic application without significant delays.

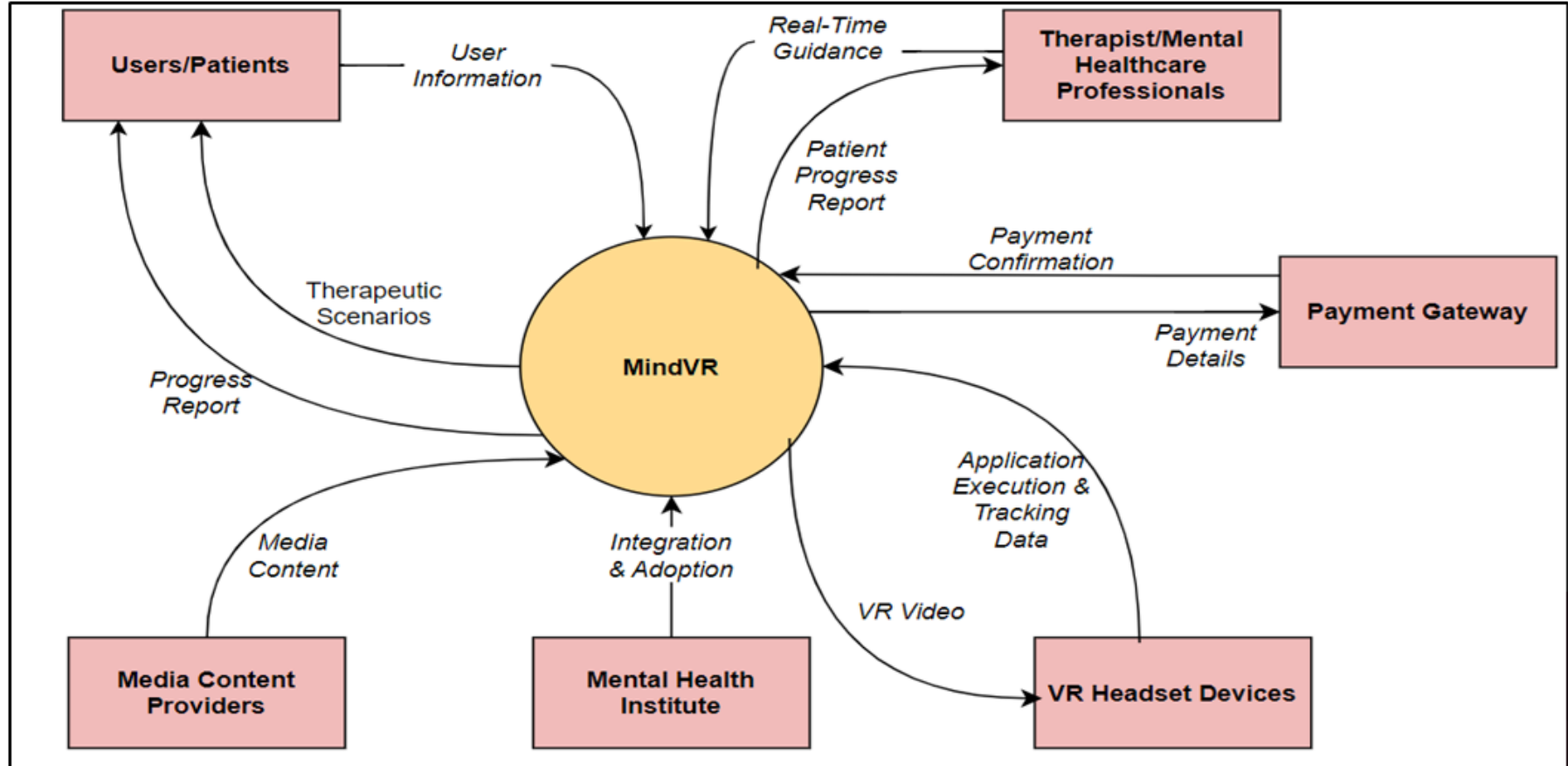


Diagrams

BUSINESS PROCESS MODEL

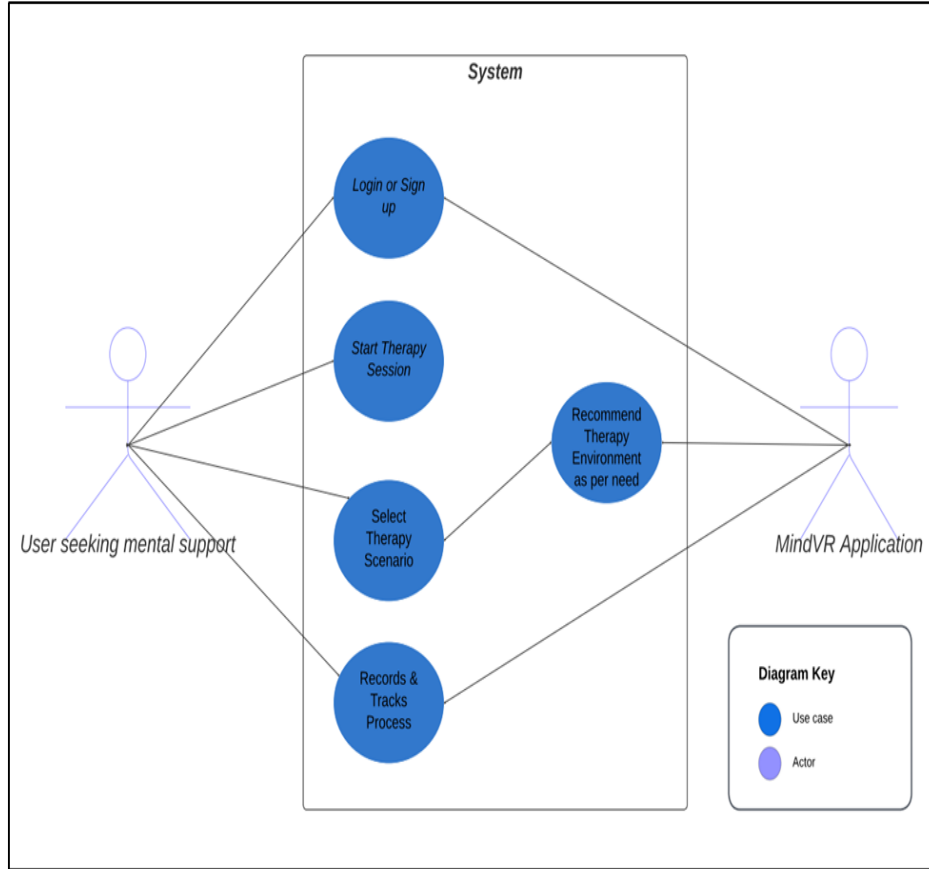


SYSTEM CONTEXT DIAGRAM



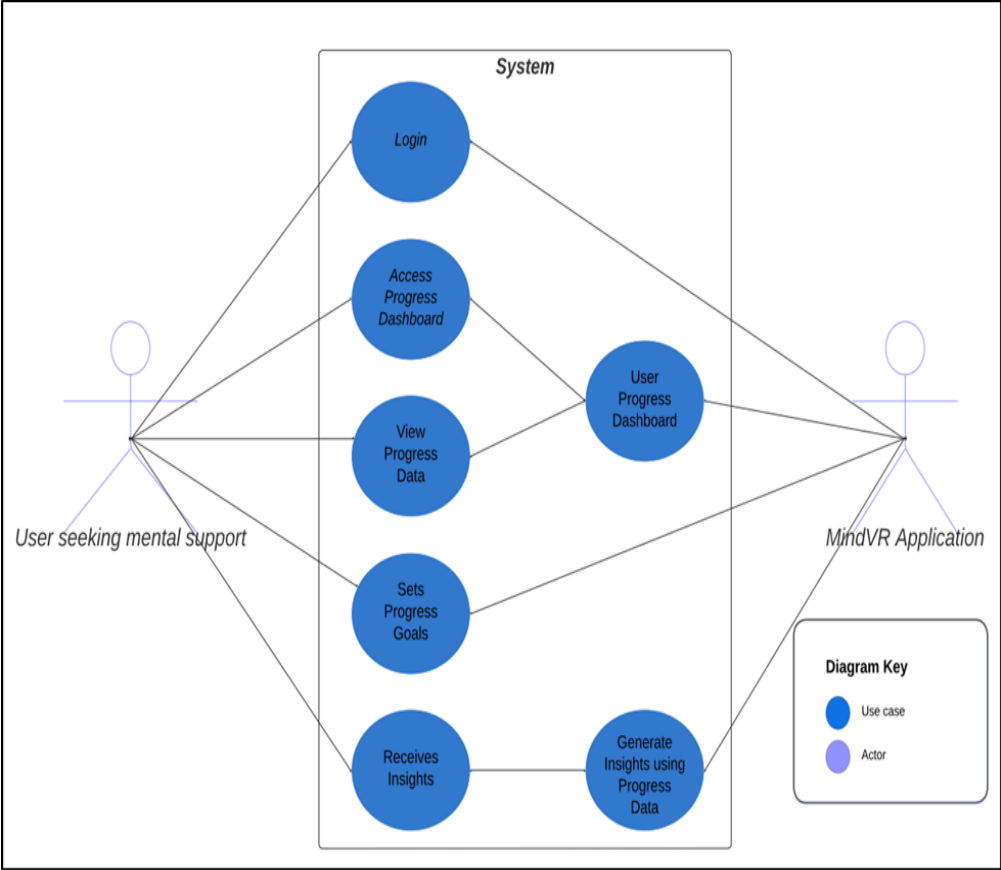
Use Cases

User Engages in Therapy Session



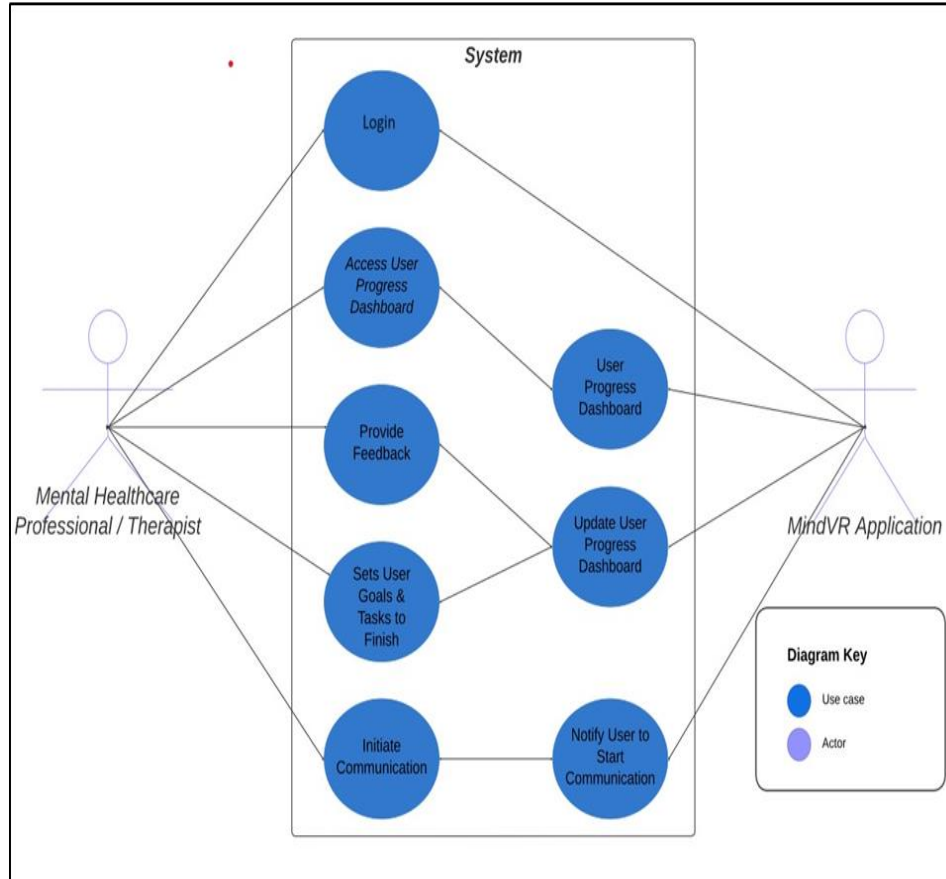
Use Case Name:	User Engages in Therapy Session
Primary Actor	User
Stakeholder	Mental Health Professional
Brief Description	The end user initiates and actively participates in a therapy session within the MindVR application.
Trigger	User opens the MindVR application, logs in or signs up and selects the option to start a therapy session.
Normal Flow of Events	<ol style="list-style-type: none">1. User opens the MindVR app and logs in/signs-up2. User selects "Start Therapy Session."3. User chooses a specific therapy scenario.4. User engages in the therapy session, interacting with the virtual environment and following therapeutic exercises.5. System collects and analyzes user interactions and progress during the therapy session.6. User concludes the therapy session, and the system saves the session data.
Exception Flow	If the user encounters technical issues during the session, the system prompts them with troubleshooting options.

User Tracks Progress



Use Case Name:	User Tracks Progress
Primary Actor	User
Stakeholder	Mental Health Professional
Brief Description	The end user monitors their therapy progress within the MindVR application.
Trigger	User opens the MindVR application, logs in or signs up and selects the progress tracking option.
Normal Flow of Events	<ol style="list-style-type: none">1. User logs into the application2. User accesses the progress tracking dashboard.3. User views their therapy progress data, including achievements and personal growth.4. User sets specific goals for their therapy progress.5. System provides insights and recommendations based on the user's progress data.6. User exits the progress tracking dashboard.
Exception Flow	If the user faces difficulty setting progress goals, the system offers guidance and suggestions.

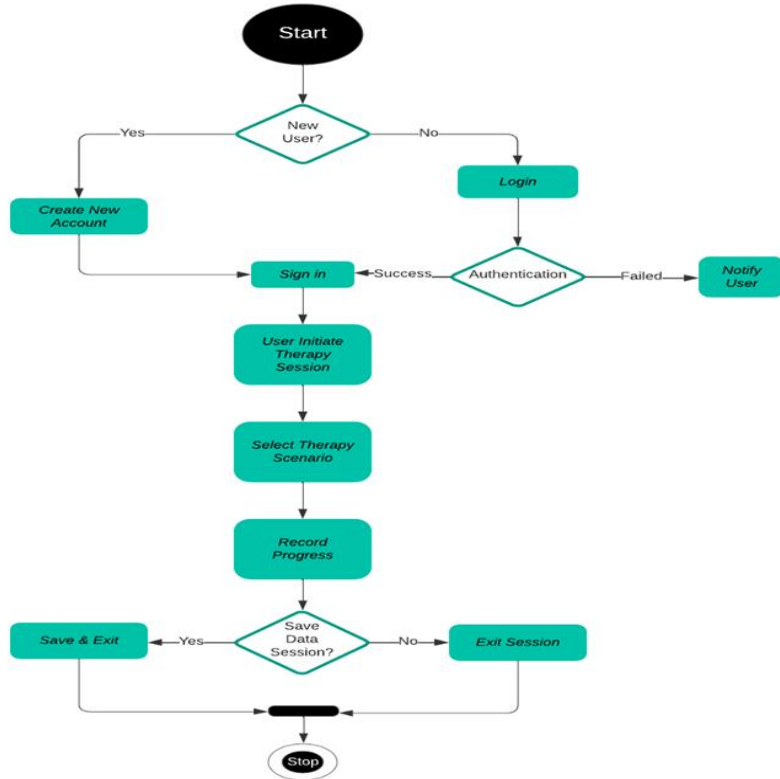
Therapist Monitors Patients' Progress



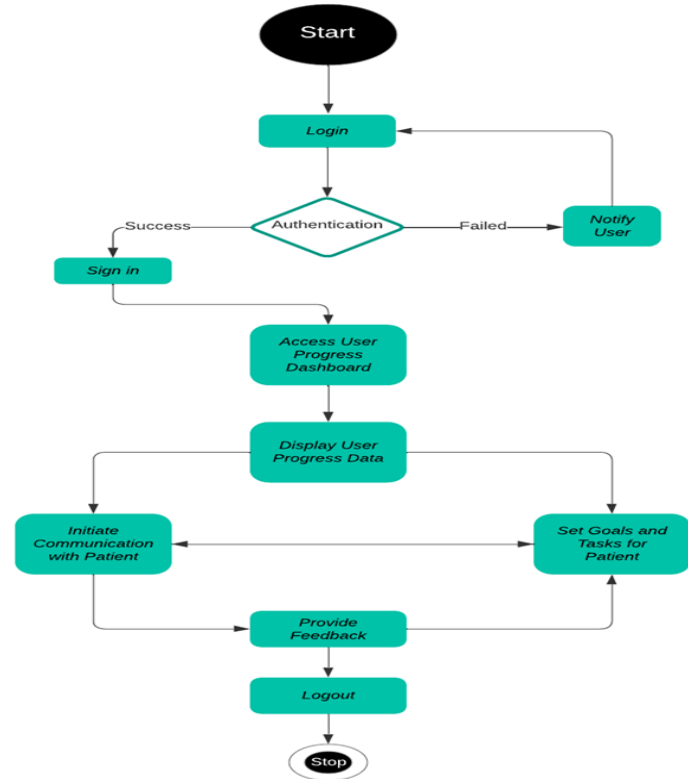
Use Case Name:	Therapist Monitors Patients' Progress
Primary Actor	Therapist
Stakeholder	User
Brief Description	Mental health professional monitors and supports a user within the MindVR application.
Trigger	Therapist logs into the MindVR professional interface and selects a user to monitor.
Normal Flow of Events	<ol style="list-style-type: none">1. Therapist logs into the application2. Therapist accesses the user's therapy progress data for monitoring and assessment.3. Therapist provides feedback and guidance based on the user's progress and interactions.4. Therapist sets specific therapy goals for the user to work towards.5. Therapist initiates real-time communication with the user for immediate support.6. Therapist concludes the session and ensures data privacy.
Exception Flow	If the therapist encounters issues with accessing user data, the system provides troubleshooting options and alerts system administrators.

ACTIVITY DIAGRAM

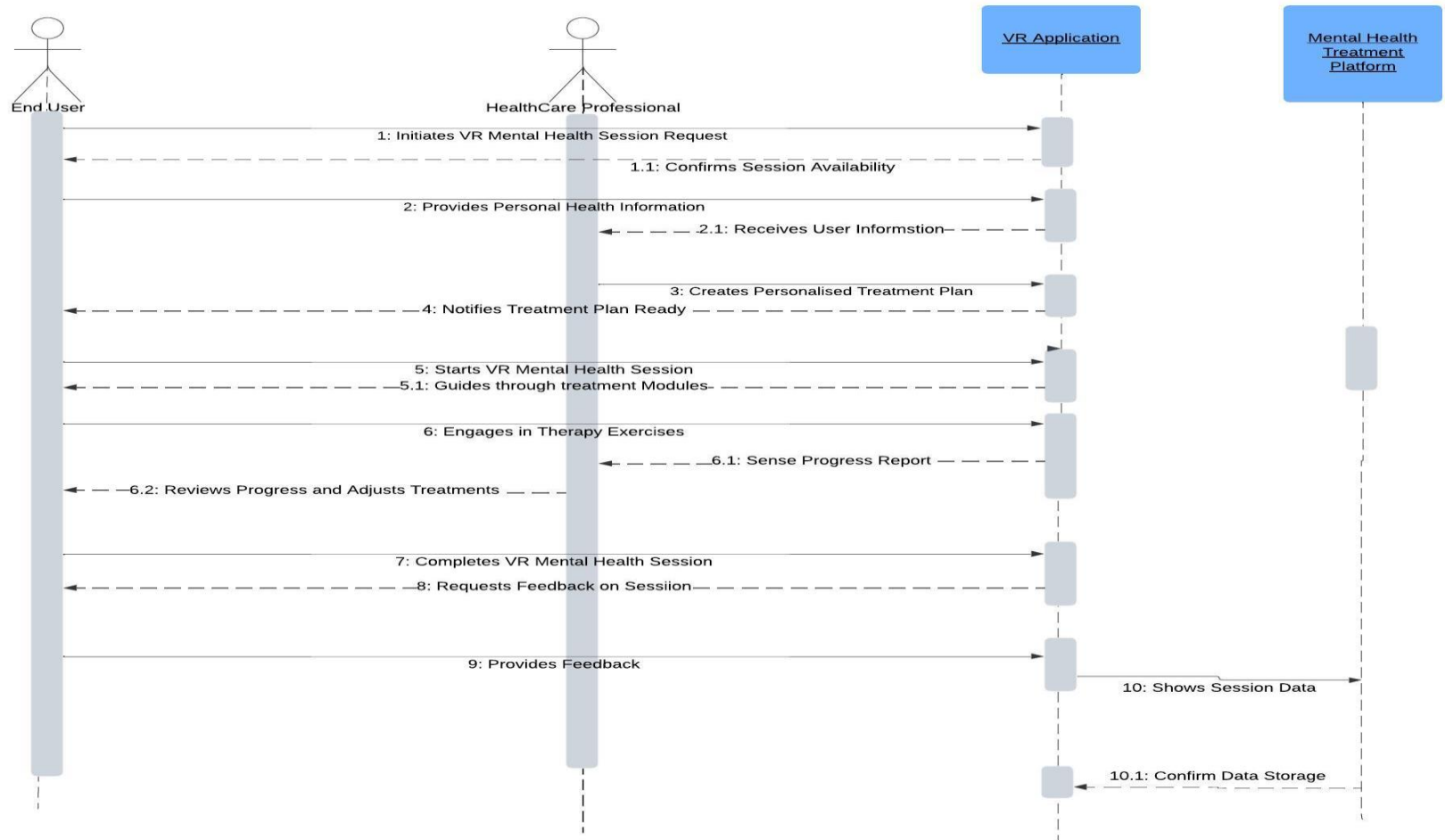
Logical flow of user engaging in a therapy



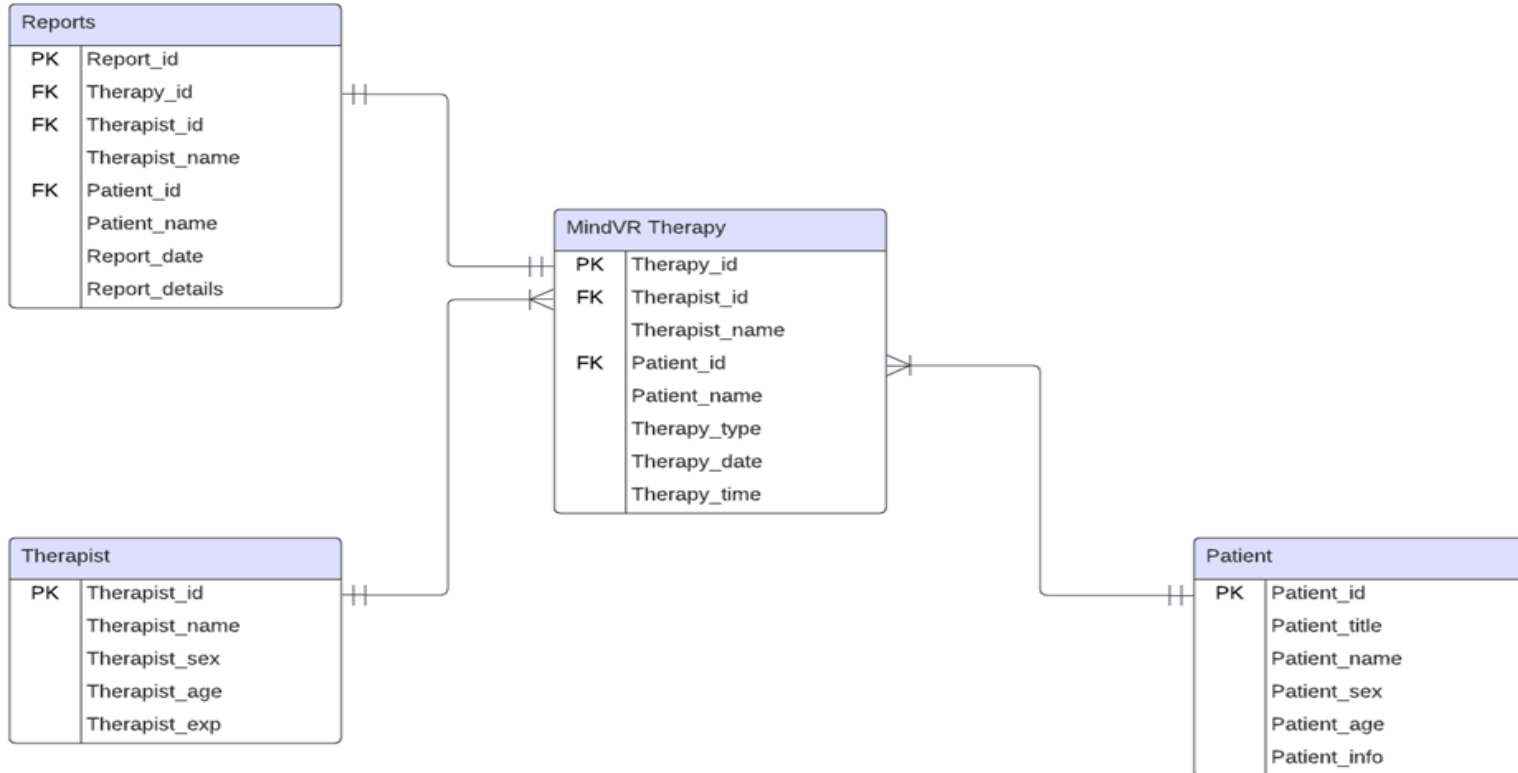
Logical flow of therapist monitors patients' progress



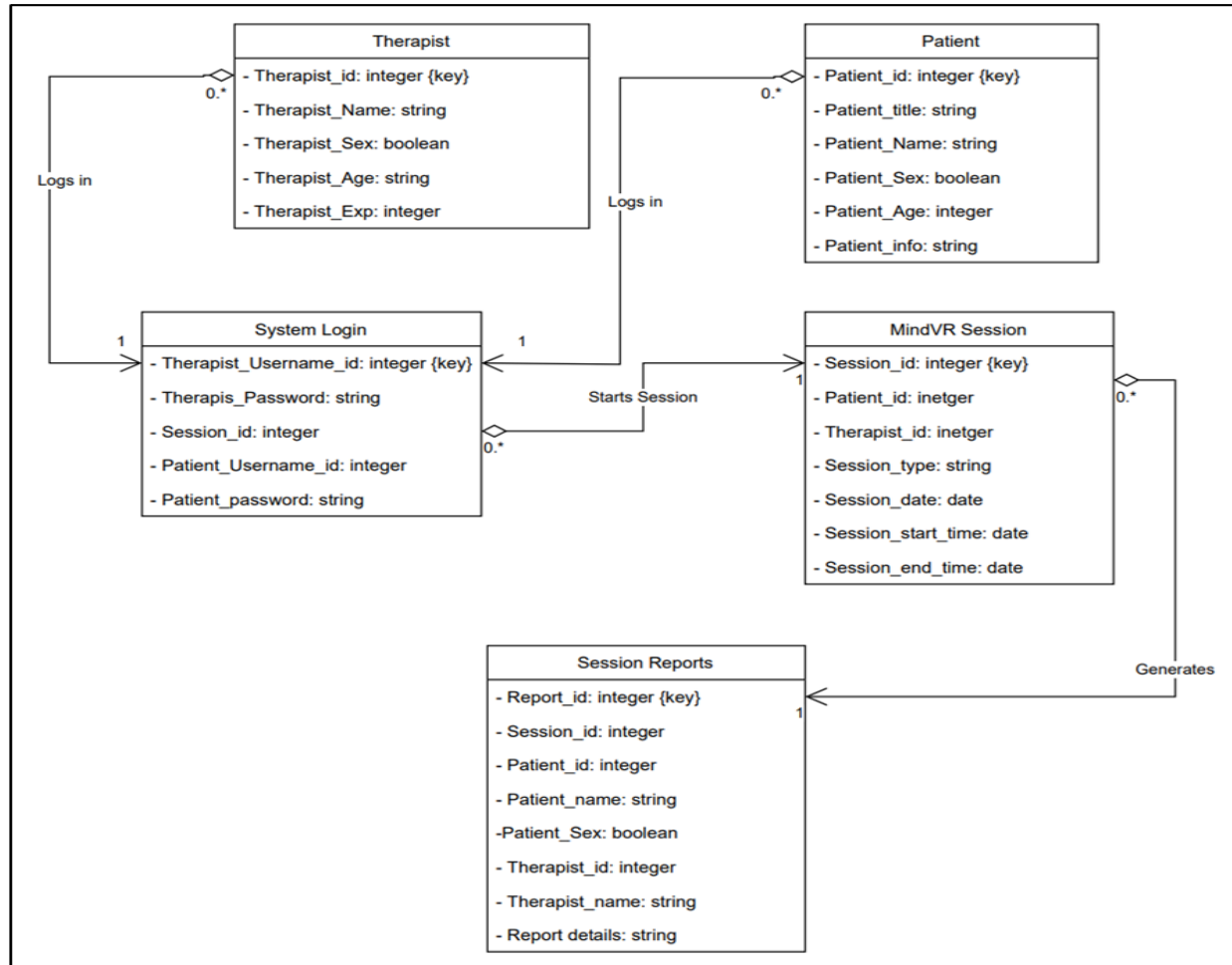
SEQUENCE DIAGRAM




DATABASE DESIGN



CLASS DIAGRAM



CONCLUSION

- MindVR's primary focus is on making mental health care more accessible, effective, cost-efficient, and free from the stigma associated with conventional methods.
 - MindVR envisions a significant positive impact on users' lives. The ambitious goal includes a 20% reduction in mental health challenges within the first month, a 15% decrease in associated costs, and an overall increase in acceptance among end users, mental health professionals, and VR enthusiasts.
 - What sets MindVR apart is its user-centric approach. Tailored VR scenarios are designed to cater to specific mental health challenges. By offering personalized therapeutic experiences, MindVR empowers users to actively manage their mental health journey.
 - In conclusion, MindVR stands as a groundbreaking initiative, poised to revolutionize mental health therapy. By combining accessibility, personalization, and effectiveness, MindVR is set to offer transformative solutions for individuals seeking improved mental health support.
- 

REFERENCE

- Agile Project Management: Highsmith, J. (2001). "Agile Project Management: Creating Innovative Products." Explore the principles of Agile Project Management, emphasizing flexibility and collaboration.
- Virtual Reality Therapy in Mental Health: Rizzo, A. S., & Shilling, R. (2017). "Clinical Virtual Reality tools to advance the prevention, assessment, and treatment of PTSD."
- Freeman, D., Reeve, S., Robinson, A., Ehlers, A., Clark, D., Spanlang, B., & Slater, M. (2017). "Virtual reality in the assessment, understanding, and treatment of mental health disorders."
- Slater, M., & Sanchez-Vives, M. V. (2016). "Enhancing Our Lives with Immersive Virtual Reality."





Thank You