PROJECT PLAN

Team IT1B

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1. BACKGROUND INFORMATION

The organization carrying out the project: Silent Storytellers

1.1 Overview of Silent Storytellers

Silent Storytellers is an organization that consists of 7 group members. We are a group of IT members that specialize in carrying out various difficult tasks. We want to contribute to society and try to make this world a bit better. We are here to work hard and make changes for future generations. We hope our project will help deaf people, and we will raise more awareness of the problems they face.

1.2 Overview of the Project

This project holds deep significance for us as a team because we are using technology to create positive change. Through this initiative, we aim to show the world the often-overlooked experiences of deaf individuals and those who have lost their hearing over time. These individuals are real heroes who face lots of challenges every day that many of us rarely consider.

While public awareness about deafness has improved, there remains a substantial gap in **true understanding and empathy**.

Our project seeks to bridge this gap through the creation of an immersive **Virtual Reality (VR)** experience — a tool that doesn't just explain these challenges but allows users to **feel them firsthand**. By placing people in the shoes of a deaf individual, we hope to create a powerful moment of realization and connection. VR gives us the unique ability to replicate real-life scenarios.

Once we complete this project, each of us will have valuable new knowledge and hands-on experience. From developing in Virtual Reality (VR) to working with real stories from the deaf community, this project has pushed us to learn, adapt, and grow in ways we never imagined.

The idea for Deafinity was entirely our own, and we planned every detail — from concept and design to development and user testing. Despite none of us having prior experience in creating a VR game, we have to embrace the challenge. Along the way,

we will gain skills in coding, 3D design, storytelling, team collaboration, and inclusive user experience design.

Most importantly, we will learn how to use technology as a tool for empathy and awareness. We are not just building a product — we are developing ourselves as future professionals and people who want to make a difference.

1.3 Importance of the Project

The importance of this project to our team stems from a shared desire to promote empathy, inclusivity, and social change. As students, creators, and future professionals, we recognize the power of technology as a tool for education and transformation. By simulating real-life environments such as schools, workplaces, and public spaces, which are full of danger for those who cannot hear, each marked by communication challenges and sensory limitations, we hope to build a bridge between the hearing and non-hearing communities.

This project not only allows us to use our skills in design, coding, and media production, but it also challenges us to think critically about accessibility, representation, and the role we play in shaping a more understanding society. It is an opportunity to create something meaningful that can make a difference, raise awareness, and leave a lasting impact. In addition, we are taking this project seriously, and we have been provided with the opportunity to get in touch with a sign language interpreter and his clients to spend time with and listen to their stories, which will definitely help us to succeed.

2. PROJECT RESULTS

2.1 Purpose of the Project

The purpose of the Silent Storytellers project is to create a powerful, immersive Virtual Reality (VR) experience that allows users to understand and empathize with the everyday challenges faced by deaf individuals. This initiative aims to raise awareness and inspire change by giving voice to the issues of the deaf community face. Through innovative technology, storytelling, and collaboration with the sign language interpreter and deaf individuals, Silent Storytellers is committed to making a meaningful impact while developing practical skills in design, coding, and team collaboration.

2.2 Smart Objectives

- **Specific:**
  Develop a Virtual Reality (VR) experience that simulates the daily challenges faced by deaf individuals, aiming to educate users and promote empathy.
- **Measurable:**
  Create and complete a few VR environments (e.g., school, workplace, public space) and gather feedback from at least 5 deaf individuals and 10 users from the general public to evaluate the impact on awareness and understanding.
- **Achievable:**
  In a team of 7 IT students and some extra help from a sign language interpreter and real stories from the deaf community, the project is well-supported, and our team will do their best to deliver a high-quality product.
- **Relevant:**
  The project aligns with the organization’s mission to use technology for social good and raise awareness of deaf individuals’ challenges, contributing to society.
- **Time-bound:**
  The project will be completed within 8 weeks of the start date.

2.3 Sub-objectives

- **Creation:**
    - Design and develop a VR experience that accurately simulates real-world environments where deaf individuals face communication challenges.
    - Integrate true stories and insights gathered from the sign language interpreter and deaf community members.
    - Ensure high-quality 3D models, environments, and sound design to show the experience of issues the deaf face daily.

- **Functionality:**
    - Ensure the VR simulation runs smoothly across target platforms.
    - Include interactive scenarios (e.g., a dangerous situation in a busy street) that demonstrate specific obstacles faced by deaf people.
    - Implement user controls that allow easy navigation and scenario selection within the VR experience.

- **User Experience:**
    - Create an emotionally impactful interface that educates users while fostering empathy.
    - Collect user feedback to assess emotional impact and learning outcomes.
    - Collect user feedback to enhance game experience and fixing

2.4 Intended Results

The Silent Storytellers project aims to achieve the following intended results:

- **Increased Awareness and Empathy:**
  Users will gain a deeper understanding of the daily struggles and communication barriers faced by deaf individuals, fostering greater empathy and inclusivity.
- **Educational Impact:**
  The VR experience will serve as an educational tool for the general public to promote learning about accessibility and inclusion.
- **Social Impact:**
  By highlighting real stories and experiences from the deaf community, the project will contribute to encouraging people to open dialogues about the solutions of how to solve some of the problems deaf individuals face and make their lives at least a bit easier.
- **Skill Development:**
  Team members will strengthen their technical, creative, and collaborative skills in areas such as virtual reality design and coding.
- **Community Engagement:**
  The project will build meaningful connections between the team and the deaf community through direct engagement with the interpreter and deaf individuals.
- **Functional VR Prototype:**
  A fully operational VR application that can be presented, tested, and potentially distributed or used for awareness campaigns and educational programs.

3. PROJECT ACTIVITIES

This chapter will outline the specific activities that will be carried out to achieve the project objectives. These activities are organized into phases across the 8-week project timeline.

3.1 Kick-off phase (Week 1)

- Meet with all team members to decide on project roles and responsibilities
- Brainstorm ideas and directions to determine project goals and target group
- Set up communication channels (Discord, Teams, WhatsApp)
- Create project management in Jira
- Set up version control repositories on GitHub
- Decide on end products based on the chosen ideas (bring experience of the world of those with hearing loss or difficulty)

3.2 Website Development and Documentation Phase (Week 1-2)

- Develop corporate design and branding elements (logo, color pallet, typography)
- Design website and start developing on chosen design
- Task distributions among team for each document
- Finalizing project plan for Initial Poll
- Schedule meeting with sign language interpreters to discuss collaboration

3.3 Research and Planning phase (Week 2-3)

- Present Initial Poll to project teachers for approval
- Meet up with sign language interpreter to connect with the deaf community
- Conduct interviews with deaf individuals to gather stories
- Finalizing website development
- Begin creating VR experiences designed concepts
- Draft storyboard for different scenarios
- Draft initial technical specifications for Technical Design
- Team meeting to go through progress and decisions

3.4 Game Design phase (Week 3-5)

- Create detailed game design and storyboard
- Learn and practice with Blender and Unreal Engine
- Design sound manipulation for VR experience
- Design and create 3D models and environments
- Implement first prototype scenarios
- Team meeting weekly to go through progress and decisions
- Prepare for Intermediate Poll presentation (week 5)

3.5 Development phase (Week 4-6)

- Continuing with VR experience development
- Implement sound design for VR experience
- Develop user interactions with VR environments
- Conduct testing on early prototypes
- Present progress at Intermediate Poll (week 5)
- Team meeting to discuss Intermediate Poll feedbacks and progress
- Update on required documentation

3.6 Testing phase (Week 5-7)

- Conduct testing on VR experience prototypes
- Organize testing sessions with deaf individuals and sign language interpreter
- Organize testing with representatives from target group
- Document and implement feedback for improvement
- Begin Technical Advisory report
- Prepare for final presentation
- Team meeting to go through progress and required updates

3.7 Finalization phase (Week 7-8)

- Complete all VR experience development
- Conduct final testing
- Finalize Technical Advisory report
- Organize demonstration for Final Poll
- Finalize all project documentation

Present final product at Final Poll (week 8)

During every phase, the team will maintain weekly SCRUM meetings to ensure efficiency and quality base on the standards outlined in Chapter 6.

4. PROJECT SCOPE AND CONDITIONS

This section describes the boundaries of the project, with the purpose of clearly defining the overall purpose of the product that is being developed. Therefore, mistakes can easily be prevented, and the focus is maintained on the correct aspects of the project.

4.1 Project overview

The duration of the project is a total of eight weeks, consisting in the development of a Virtual Reality environment which must accurately simulate the daily struggles that hearing-impaired individuals put up with, with the purpose of raising awareness and fostering empathy. The Virtual Reality environment would allow any user to experience what the world looks like through the lens of a deaf individual.

The target audience consists of the general public, as well as individuals such as students, educators, professionals in training etc.

4.2 Project objectives

- Raising awareness regarding the struggles faced by hearing-impaired individuals.
- Providing an immersive Virtual Reality experience for the general public as well as for the target audience.
- Promoting empathy with the purpose of fostering a better understanding of communication practices towards deaf individuals.

4.3 Scope definition

The scope of the project includes the creation of a realistic Virtual Reality environment outlining struggles experienced by the deaf in different situations (e.g. school, workplaces, public transport etc.) The application must make use of sound manipulation (e.g. muffled noises, absent sounds).

4.4 Out of scope

The project will not include:

- Medical accuracy beyond the purpose of storytelling.

5. INTERMEDIATE OUTCOMES

In this project, several intermediate outcomes will be produced as key milestones towards the final deliverables. These outcomes represent crucial steps in the development of the Virtual Reality experience that will help raise awareness about the challenges faced by deaf individuals. Each intermediate outcome serves as a building block, leading to the successful completion of the project.

5.1 Key Intermediate Outcomes

a) **Team Code and Version Control**
The team will establish version control protocols for all project files using a shared system (e.g., Git) to track changes and avoid code conflicts. This code will be regularly updated to ensure smooth integration between different team members' contributions.
- Expected Deadline: Week 2

b) **Project and Product Documentation**
Comprehensive documentation will be created to outline the scope of the project, deliverables, and technical specifications. This will include descriptions of the website and VR experience functionalities, user flows, and a development timeline.
- Expected Deadline: Week 3

c) **Corporate Design**
A Corporate Design will be developed to ensure consistent branding throughout the project. This will include a logo, color scheme, fonts, and general design elements applied across all project deliverables such as documents, presentations, and the website.
- Expected Deadline: Week 3

d) **Initial Project Plan and Poll**
The first formal checkpoint, the Initial Poll, will be held during Week 2, where the project group presents the project plan and the product vision to the project

teachers. The aim is to clarify the project's feasibility, priorities, resources, and timeframes. A GO or NO GO decision will be made based on the presentation's quality and clarity.

- Expected Deadline: Week 2

e) **Prototypes of Key Features (Wireframe and VR Scenario)**

At the midpoint of the project, a working prototype will be produced that includes a basic wireframe of the website and a VR scenario based on the collected stories. This will help validate the project's concept, demonstrate functionality, and allow for feedback from the team and stakeholders.

- Expected Deadline: Week 5

- To be discussed during the Intermediate Poll (Week 5)

f) **Progress Review and Adjustments**

During the Intermediate Poll in Week 5, the project group will review progress made from the Initial Poll and present insights on the project's trajectory. Adjustments will be made to functionalities, timelines, and expectations as needed. The team will also update any deliverables and align future goals.

- Expected Deadline: Week 5

g) **Technical Advisory Report**

This report will detail the product's technical functionalities and give advice on further development, such as potential improvements in software, hardware, and infrastructure. It will cover possible future extensions and provide insights into refining the product.

- Expected Deadline: Week 7

h) **Final Product Presentation and Student Assessment**

The culmination of the project will be the Final Poll in Week 8, during which the team will present the final product, including the fully implemented website and VR experience. This will be followed by the Student Assessment of team members' performance, which will be discussed as part of the final review.

- Expected Deadline: Week 8

5.2 Importance of Each Intermediate Outcome

Each intermediate outcome plays a critical role in ensuring the success of the project. By delivering these milestones:

- **Version Control and Team Code** ensure smooth collaboration among team members and keep track of progress and updates.
- **Project and Product Documentation** provides clear direction for the project's scope, goals, and technical details, making sure everyone is aligned.
- **Corporate Design** maintains a professional and consistent branding strategy across all project materials, helping communicate the project's identity.
- **Initial Project Plan and Poll** sets a clear project foundation and allows for early-stage evaluation and adjustments based on feedback.
- **Prototypes of Key Features** validate key functionalities of the product, ensuring that the VR scenarios and website design meet the project's vision and objectives.
- **Progress Review and Adjustments** during the Intermediate Poll allow the team to realign, ensuring that the project remains on track and that any necessary corrections are made.
- **Technical Advisory Report** provides valuable recommendations for further product development, helping ensure longevity and relevance.
- **Final Product Presentation and Student Assessment** finalize the project's outcome and serve as a reflective point for the team's overall performance.

5.3 Timeline and Milestones

These intermediate outcomes are aligned with the project's timeline, ensuring that progress is measured against clear milestones. By achieving these outcomes, the team will meet the objectives of the module, which include demonstrating practical skills, teamwork and the ability to create a functional, user-focused product.

- **Week 2:** Initial Poll, Team Code, and Documentation
- **Week 3:** Corporate Design and Initial Prototypes
- **Week 5:** Intermediate Poll, Prototypes, Progress Review
- **Week 7:** Technical Advisory Report
- **Week 8:** Final Poll, Product Presentation and Student Assessment

6. QUALITY CONTROL

This section outlines the quality control objectives, standards, and tools used by the project team to ensure that all deliverables meet or exceed client expectations and industry standards. The quality control process is essential for identifying and addressing issues early, ensuring that the project remains on track and meets all requirements.

6.1 Quality standards

Quality standards for the project are determined by designated **Quality Controllers** within the team. These standards include criteria for functionality, reliability, usability, and compliance with project requirements. Here is an overview of how quality standards are applied:

Review Process: Products developed by team members are submitted to Quality Controllers for review. This process includes:

- **Inspection for Defects or Issues:** The Quality Controllers conduct inspections and testing of each delivery to identify any potential issues, bugs, or defects.
- **Defect Resolution:** If any issues or defects are found, they correct the issue and review the issue and solution with the responsible team member. After the defects are resolved, the product undergoes additional testing.
- **Approval:** A product that is free from issues or has resolved all identified issues is considered to have passed quality control. Once approved, the delivery is cleared up for the next phase or final delivery to the client.

6.2 Desired quality

The end product needs to meet certain quality standards:

- It must fulfill all the requirements specified in the Requirements Analysis document and they must be up to standard with the client's expectations and industry standards.
- It must be ethically correct, and it must put the targeted group in a good light.
- There won't be any assumptions made about the targeted group's perspective, all game story scenarios will be first discussed with the targeted group and approved by them before implementing them into the game.
- There won't be any unnecessary files or folders added inside the project directory.
- Must be cross-platform (Meta Quest and Apple Vision Pro).
- It must be comprehensive and easy to understand.

6.3 Quality Assurance of Intermediate Results

There will be bi-weekly SCRUM meetings at which the progress and the quality of the product will be checked and discussed by all members of the group.

There will be checks made after completing a part of the project to ensure that they are up to the quality standards before moving on to the next delivery of the project, these checks will include making sure that the code is up to the coding conventions and easily understandable by the other group members and making sure that the quality standards mentioned in 6.1 will be upheld.

Before proceeding to the development stage all documents will be checked and made sure they are complete and include all the necessary specifications in order to plan the whole project.

6.4 Feedback implementation

Feedback Collection Methods:

- Structured feedback forms will be created and distributed to target groups during the testing phase
- Online surveys will be conducted with deaf community members and sign language interpreters
- User experience observation sessions will be conducted during VR testing

Feedback Analysis Process:

The collected feedback will be systematically analyzed using the following criteria:

- Usability: How intuitive and user-friendly is the VR experience?
- Accessibility: How well does the application serve deaf individuals' needs?
- Educational Impact: Does the experience effectively raise awareness and promote empathy?
- Technical Performance: Are there any technical issues affecting user experience?
- Feasibility: Can suggested improvements be realistically implemented within project constraints?

Quality Assurance of Feedback:

- Feedback will be validated through multiple sources when possible
- Implementation of changes will undergo the same quality control process as outlined in section 6.1
- Post-implementation testing will verify that changes achieve the intended improvements

This systematic approach ensures that user feedback directly contributes to creating a more effective and impactful VR experience for raising awareness about deaf community challenges.

6.5 Used programs

The project team utilizes several programs and tools to manage tasks, facilitate communication, control versions, and perform testing. Here's a list of key tools and their specific use cases:

Program	**Use case**
Jira	Task management
Git / GitHub	Version control
WhatsApp, Discord, Outlook	Communication tools
Microsoft Teams, OneDrive	File sharing
Visual Studio Code, Unreal Engine, Blender	Development
Microsoft Excel	Hour log
Other Microsoft Products	Miscellaneous tasks

7. PROJECT ORGANIZATION

This section describes the structure, roles and responsibilities of the people and how involved the team is in the project. It also ensures that everyone understands and is clear about their role within the project, and how their work is linked with the other members. It also helps the team to make the best use of the resources, ensures clear communication and minimizes potential challenges.

7.1 Team members

Project Manager:

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7.2 Roles and responsibilities

Project Manager

The project manager establishes the project's goals, deliverables, and limitations. They ensure that the deliverables meet the requirements before handing them over to the client or stakeholders.

Responsible for creating a detailed project schedule, setting the milestones and the deadlines.

Manages the scope, resources, risks, communication, quality assurance and finance.

Project Secretary

The responsibilities include keeping the documents organized, maintaining smooth operations, and facilitating communication.

Tracks the expenses of the project, schedules meetings with the team and updates on the progress.

Take detailed minutes during meetings, records key discussions and decisions. Also reminds team members of their assigned tasks and deadlines.

Project Team Members

The members carry out tasks assigned by the project manager, ensuring that the quality standards adhere to the guidelines.

They work efficiently with the other members, help each other, update the project manager and the team on the progress or any potential delays.

Accepting responsibility for the timeliness and quality over their own work.

Task Division per Team Member:

- Ai Nguyen (Project Manager): Website visual design, contact management, legal compliance requirements for website, documentation tracking and oversight
- Bence Mohr: Database architecture and infrastructure development, website hosting setup and management, back-end website development
- Kyan Jeuring: Lead website developer, technical architecture oversight, code integration and quality assurance
- Victoria Iaşcevschi (Project Secretary): Website design coordination, photography and visual content creation, "About Us" page design and development, community story collection
- Flavius Petrașciuc: "Stories" page development and implementation, front-end website support, user interface optimization
- David Corodeanu: "Home" and "About Us" pages development, front-end website development, responsive design implementation

Sara Kiani Nejad: Corporate brand book development, logo design and branding elements, visual identity creation

7.3 Working hours

Monday to Friday:

9 AM – 6 PM

Saturday and Sunday:

Not Available

7.4 Communication within the team

The team members have weekly SCRUM meetings in person during the assigned Atelier hours where they will give regular updates on their progress, improvements and time spent on their parts through the above-mentioned channels. The communication will be done through Microsoft Teams, Discord and WhatsApp.

It is also used as an archive for the team members, which the project secretary organizes and stores them safely in case any malfunction happens with the files.

8. PLANNING

Epics	Tasks	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
WEBSITE	Design								
	Realisation								
	Installation								
RESEARCH	Meetings								
	Interviews								
	Processing								
GAME	Design								
	Development								
	Testing								
DOCUMENTATION	Project plan								
	Technical design								
	Requirement analysis								
	Technical advisory report								

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9. COSTS AND BENEFITS

This chapter will outline the cost and benefits of this project.

9.1 Costs

The primary cost of this project is the time investment required from each team member. The project team consists of seven members, and each member is expected to contribute a minimum of 336 hours, resulting in a total time investment of:

$$Amount\ of\ team\ members \times Minimal\ hours\ per\ team\ member = Total\ invested\ hours$$

$$7 \times\ 336 =\ 2352$$

This time includes all aspects of the project including planning, development, testing, documentation, and final delivery.

Additional costs include the resources required to complete the project. These are primarily hardware and software tools, many of which are provided or freely available:

- Hardware
    - Apple Vision Pro (Provided by NHL Stenden)
    - Meta Quest (Owned by team members)
    - Laptops (Owned by team members)
    - Monitors (Provided by NHL Stenden)
- Software
    - Unreal Engine (Free)
    - Visual Studio Code (Free)
    - Blender (Optional | Free)
    - VR Software (Provided by NHL Stenden)
    - Other software (Free | Provided by NHL Stenden)

The budget suggested to the client is: 58.187€.

The estimated hours to finish this project are 336 hours / employee.

The expected costs might change in the process of realization of the project.

The costs of the project are:

Man-hours (required working time for 7 employees)	€ 42.336
Workspace (rent, energy, water, etc)	€ 1.000
Additional costs for employees	€ 800
Equipment	€ 6.500
Travel expenses	€ 1.812
Services (subscriptions, maintenance, etc)	€ 200
Materials (paper, pens, etc)	€ 150
Insurances	€ 100
Risk budget	€ 5.289
Summary	€ 58.187

9.2 Benefits

The main benefit of the project is the 12 ECTs for each team member when completing the project successfully.

Another benefit of the project is the acquired skills learned during the project. Such as VR development, 3D modeling, designing skills and problem solving.

The benefits also include the opportunity to work with technology used in the real world.

9.3 Conclusion

In conclusion, the project requires a significant time investment from the team, totaling 2352 hours, but involves minimal financial cost due to provided and free resources. The project offers valuable benefits, including 12 ECTS, hands-on experience with real-world technology, and the development of important technical and teamwork skills. Overall, the benefits greatly outweigh the costs, making the project a valuable learning experience.

10. RISKS ANALYSIS

This section outlines potential risks that could impact the project's development, along with strategies and how to prevent them.

Risk	Description	Impact	Likelihood	Prevention
Time Management	Team members may struggle to complete their 336 hours within the project timeline.	High	Medium	Create a detailed planning schedule, track hours daily, and hold regular team meetings.
Technical Challenges	Issues with VR development tools or integrating components may delay progress.	High	High	Allocate buffer time, encourage early testing, and consult teachers or online resources.
Hardware Availability	Limited access to shared equipment like the Apple Vision Pro may hinder development.	High	Low	Hardware will be provided by NHL Stenden
Team Coordination	Miscommunication or unclear roles can reduce productivity.	Medium	Medium	Define roles clearly, use project management tools, and maintain weekly meetings.

Scope creep	Adding new features outside of the original plan can delay delivery.	Medium	Low	Define scope clearly at the start and use change request procedures for additions.
Software / Development errors	Undetected errors may affect functionality or performance.	Medium	Medium	Conduct regular testing, code reviews, and work in iterative stages.
Loss of Data	Project files may be lost due to hardware failure or accidental deletion.	High	Low	Use version control such as Git and cloud storage for regular backups.
Lack of Skill or Knowledge	Team members may lack experience in VR development, 3D modeling, or specific tools.	High	Medium	Use online tutorials, peer support, and allocate time for learning during the project.

All risks will be reviewed during each team meeting to ensure early detection and effective management. The team will assess the status of each risk, evaluate if mitigation strategies are working, and identify any new risks that may arise. This ongoing process helps minimize disruptions and keeps the project on track.