UNIVERSIDAD ANA G. MÉNDEZ
UAGM

TouriaVR:

"Connecting Worlds Through Interactive Tourism"

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Problem Definition

THE PROBLEM AT HAND REVOLVES AROUND THE ISSUES THAT DETER PEOPLE FROM TRAVELING.

Solution

We leverage Virtual Reality (VR) technology, comprising VR headsets and controllers, to immerse users in authentic, lifelike experiences that transport them to diverse destinations. Utilizing a combination of VR cameras for real-world capture and online resources for unrecorded locales, we offer interactive tours in our meticulously documented places.

These guided explorations grant users complete autonomy to direct their gaze as they please, aided by VR controllers for interaction with the virtual environment.

Our aim is to create a remarkably lifelike experience, particularly for those unable to physically visit these extraordinary destinations. Throughout the journey, a voice-over guide discusses historical and cultural moments, with language selection options available in the main menu, including Spanish and English.

State of Art: Research 1

Title:

- "The Use of 360-Degree Virtual Tours to Promote Mountain Walking Tourism."

Focus:

- Influence of 360-degree virtual mountain walking tours on real mountain walking intention.

Key Findings:

- Vividness of 360-degree videos positively influences presence, emotional involvement, flow state, and enjoyment.
- Supports the stimulus-organism-response (S-O-R) theory.
- Practical insights for destination marketers, virtual tour developers, and mountain park managers.

Limitations:

- Single tourist destination (Dinghu Mountain), limited emotional and psychological factors,

State of Art: Research 2

Title:

- "Does VR Tourism Enhance Users' Experience?"

Focus:

- VR tourism potential amid COVID-19 impact on traditional tourism.

Key Findings:

- Growth potential of VR tourism with enhanced accessibility and entertainment.
- Critiques traditional models like TAM for limited applicability to VR experiences.

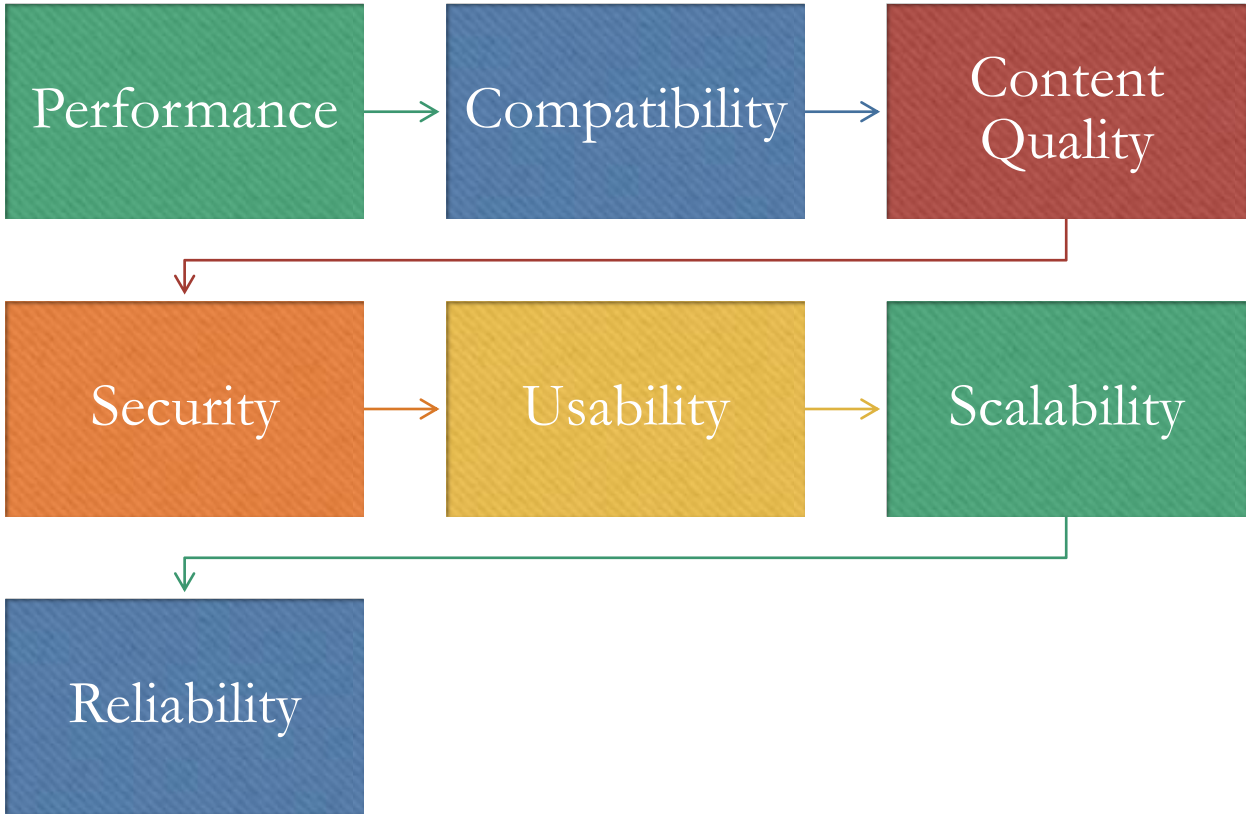
Practical implications:

- Focus on immersive flow experiences, information access, and interactivity.

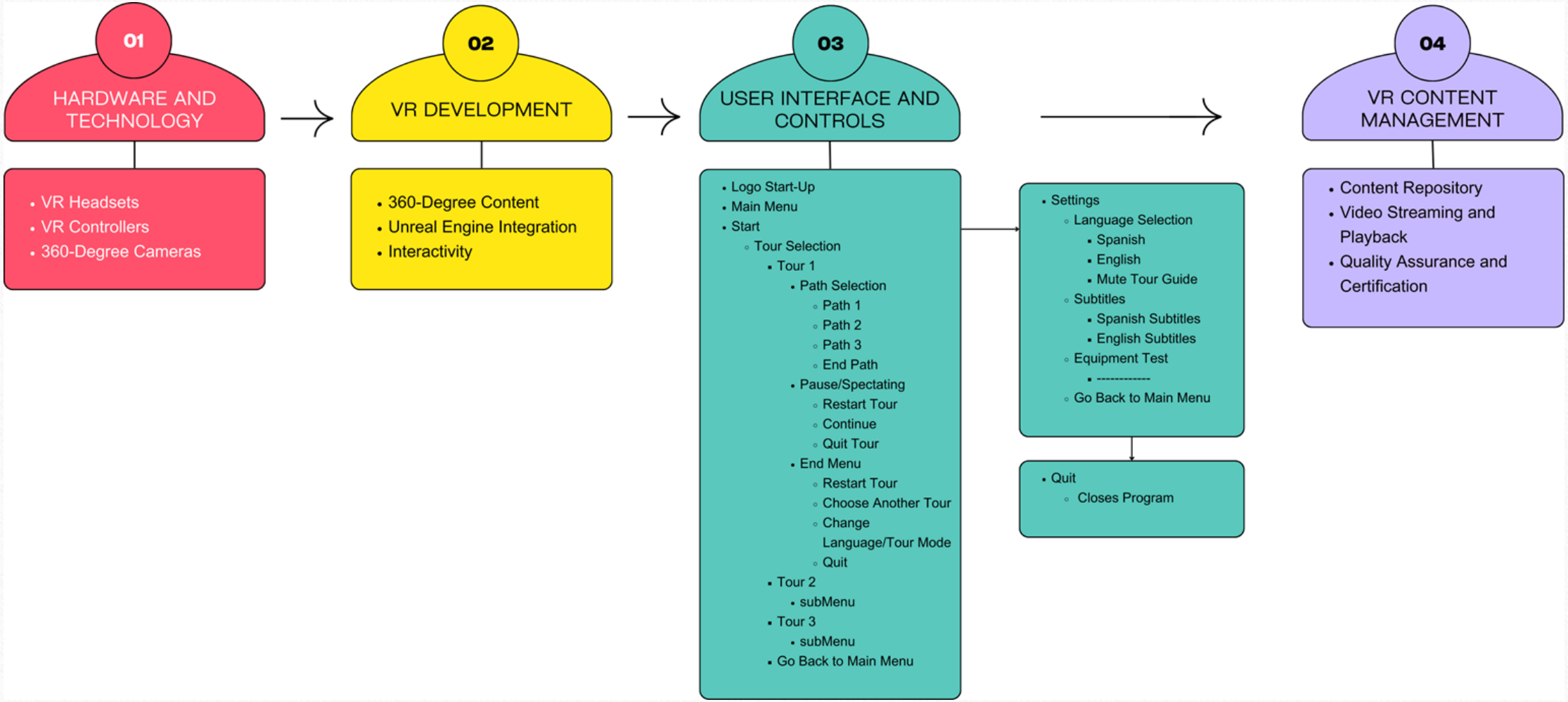
Functional Requirements:

- Startup Sequence
- Main Menu
- Tour Selection
- Voice-Over Guide
- Interactivity
- Spectating
- Tour Restart and Selection

Non-Functional Requirements:



Structural Diagram


01
HARDWARE AND TECHNOLOGY
• VR Headsets
• VR Controllers
• 360-Degree Cameras
02
VR DEVELOPMENT
• 360-Degree Content
• Unreal Engine Integration
• Interactivity
03
USER INTERFACE AND CONTROLS
• Logo Start-Up
• Main Menu
• Start
◦ Tour Selection
▪ Tour 1
▪ Path Selection
◦ Path 1
◦ Path 2
◦ Path 3
◦ End Path
▪ Pause/Spectating
◦ Restart Tour
◦ Continue
◦ Quit Tour
▪ End Menu
◦ Restart Tour
◦ Choose Another Tour
◦ Change Language/Tour Mode
◦ Quit
▪ Tour 2
▪ subMenu
▪ Tour 3
▪ subMenu
▪ Go Back to Main Menu
• Settings
◦ Language Selection
▪ Spanish
▪ English
▪ Mute Tour Guide
◦ Subtitles
▪ Spanish Subtitles
▪ English Subtitles
◦ Equipment Test
▪ ----------
◦ Go Back to Main Menu
• Quit
◦ Closes Program
04
VR CONTENT MANAGEMENT
• Content Repository
• Video Streaming and Playback
• Quality Assurance and Certification

Development Platform

Recommended Computer Hardware

OS	Windows 10 64-bit version 1909 revision .1350 or higher, or versions 2004 and 20H2 revision .789 or higher.
CPU	Quad-core Intel or AMD, 2.5 GHz or faster
Memory	8 GB RAM
GPU	DirectX 11 or 12 compatible graphics card
RHI Version	**DirectX 11:** Latest drivers **DirectX 12:** Latest drivers **Vulkan:** AMD (21.11.3+) and NVIDIA (496.76+)

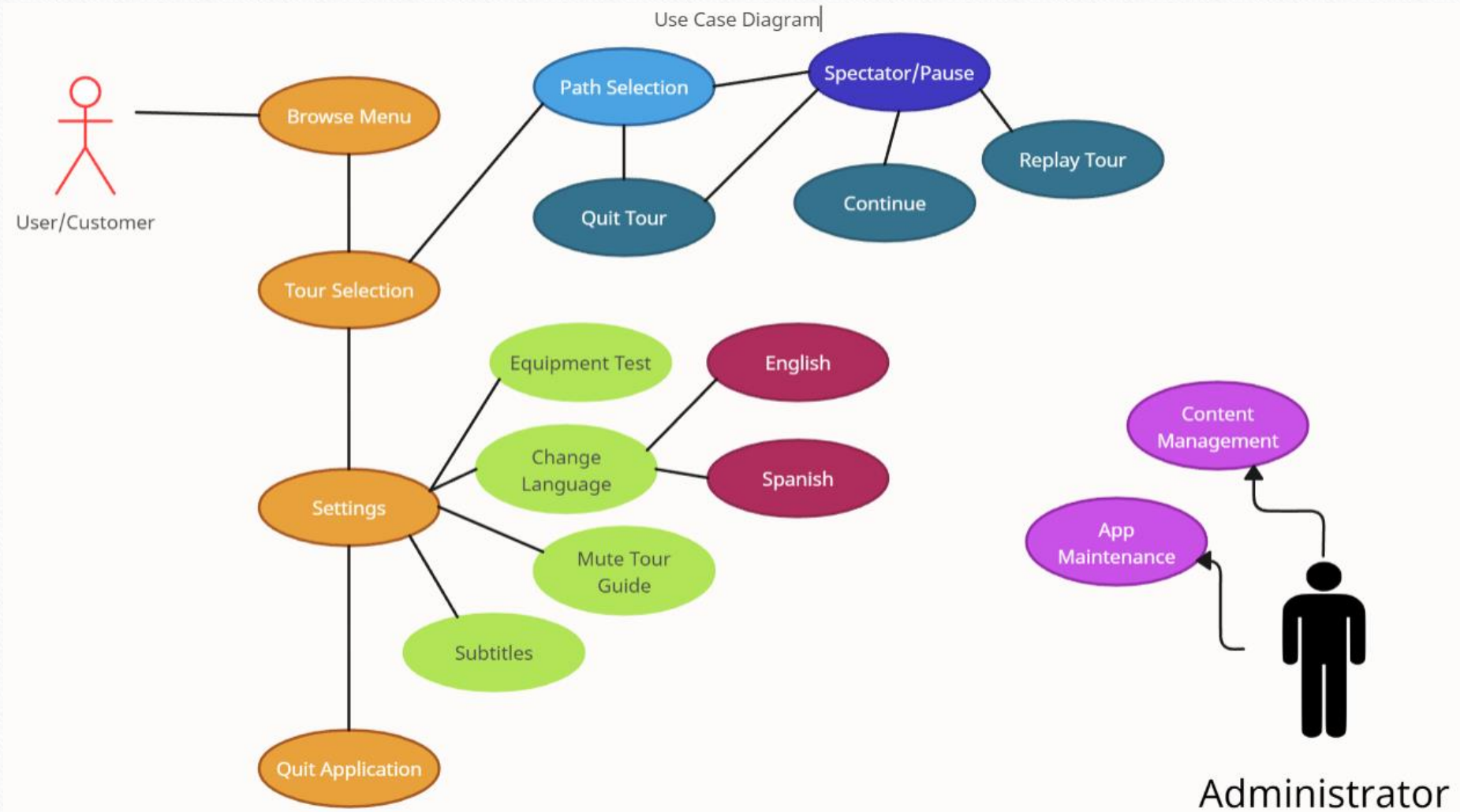
VR Hardware:

Cost Analysis

Product	Description	Cost
Insta360 ONE X2	Records environment in a 360-degree view.	$322.49
Oculus/Meta Quest 2	Platform for viewing and testing recordings.	$299.99
Tripod Dolly	Ease of movement for the tripod.	$30.00-$100.00
Tripod	Holds the camera in place for easy captures.	$20.00- $50.00
Protective Case	Safeguarding Camera during transport.	$10.00- $25.00

Spectator Menu Sketch:

Use Case Diagram


Use Case Diagram
User/Customer
Browse Menu
Path Selection
Spectator/Pause
Quit Tour
Continue
Replay Tour
Tour Selection
Equipment Test
English
Change Language
Spanish
Settings
Mute Tour Guide
Subtitles
Quit Application
Content Management
App Maintenance
Administrator

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Questions?