AR-Institure Application Maintenance Guide

1. Introduction

This maintenance guide is intended for developers and IT professionals responsible for maintaining and updating the AR-Institure application. The application enhances the tour experience for teenagers visiting the Institute for Advanced Manufacturing in Karmiel, focusing on 3D printing technologies and material recycling.

2. System Requirements

2.1 Development Environment

- **Unity Version**: 2022.3.22f1
- **Version Control**: Unity Version Control (similar to Git)
- **Programming Language**: All scripts and code in the project are written in **C#**.

2.2 Target Platform

- **Operating System**: Android
- **Minimum API Level**: Android 8.0 "Oreo" (API level 26)
- **Device Orientation**: Landscape mode (optimized for tablets)

2.3 Minimum Hardware Requirements

- **Processor**: Quad-core 1.5 GHz or higher
- **RAM**: 4 GB or higher
- **Storage**: 2 GB of free space
- **Camera**: Rear-facing camera with autofocus
- **Display**: 7-inch or larger tablet screen with 1280x720 resolution or higher
- **Sensors**: Accelerometer and gyroscope

2.4 Required Unity Packages

- Vuforia Engine AR (version 10.25.4 or compatible)
- AR Foundation
- Google ARCore XR Plugin
- TextMeshPro
- Unity UI

3. Build Settings

- **Scripting Backend**: IL2CPP
- **API Compatibility Level**: .NET Standard 2.1
- **Target Architecture**: ARMv7 and ARM64

4. Installation Instructions

1. Ensure the target Android device meets the minimum requirements specified in section 2.3.
2. Enable "Install from Unknown Sources" in the Android device settings.
3. Transfer the APK file to the Android device.
4. Locate the APK file on the device and tap to install.
5. Follow the on-screen prompts to complete the installation.

5. Updating the Application

5.1 Preparing for an Update

1. Open the project in Unity 2022.3.22f1.
2. Sync the latest changes from the version control system.
3. Resolve any conflicts if they exist.

5.2 Making Changes

1. Implement the required changes or new features.
2. Update any affected documentation within the scripts.
3. Test the changes thoroughly in the Unity Editor.

5.3 Building the Update

1. Open Build Settings (File > Build Settings).
2. Ensure the correct scene order is maintained.
3. Click "Build" and choose a location for the new APK.

5.4 Deploying the Update

1. Test the new APK on a development device.
2. If successful, distribute the new APK to the target devices.
3. Uninstall the previous version before installing the update.

6. Maintenance Tasks

6.1 Regular Maintenance

1. Check for Unity and package updates monthly.
2. Test the application on new Android versions as they are released.
3. Review and optimize performance quarterly.
4. Update AR models and content as needed.

6.2 Troubleshooting

- **AR Tracking Issues**: Ensure the lighting conditions are adequate, and AR markers are not damaged.
- **Application Crashes**: Check the logcat for Android-specific errors.

- **Performance Issues**: Profile the application using Unity Profiler and optimize as necessary.

6.3 Data Management

1. Regularly back up the project, including all assets and scripts.
2. Maintain a changelog for all updates and modifications.

6.4 Inactive Screens

If certain scenes or games are not needed, the **unusedScreen** scene can be utilized. Move the scenes to **unusedScreen** within the Unity project to temporarily disable them. This feature ensures the application can run smoothly and allows for disabling certain screens as needed by the tour guide.

7. Extending the Application

7.1 Adding New AR Models

1. Create or obtain the new 3D model.
2. Import the model into the Unity project.
3. Set up the model in Vuforia Model Target Generator.
4. Add the new model target to the AR camera in the new scene.

7.2 Adding New Mini-Games

1. Create a new scene for the game.
2. Implement the game logic in a new script.
3. Design and implement the UI for the game.
4. Add the new game to the GameManager's flow.
5. Update any relevant UI scripts to include the new game option.

8. Email Service Information

The AR-Institute application includes a feature for users to take souvenir photos during the tour. These photos can be sent to the users' personal emails through the application.
A new email account has been created for this purpose:

- **Email**: arinstitureapp@gmail.com

The password for this account will be provided to relevant parties upon request. This email is solely for sending users their photos from the tour as a memento.

9. Contact Information

For any questions or issues regarding the maintenance of this application, please contact the developers:

- **Ido Saada**: idosaada1811@gmail.com | Phone: 0547911119
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10. Version History

- **Version 1.0**: Initial release