VUFORIA AUGMENTED REALITY WORKFLOW

Hardware Requirements:

iOS/Android Phone
Computer
Webcam

Software Requirements:

Unity (with Corresponding Vuforia Assets)
Developer SDKs for intended mobile export

Basic Working Principle:

Create and Upload a Target Image to Vuforia for Testing and Export from Unity for Mobile Use

Terminology:

Target: The target is the trigger to let Vuforia and Unity interact with the player. So far there are 4 physical forms of target which work with Vuforia:
- 2D image
- 3D object
- Cube
- Cylinder

For the purposes of this workflow, we will only use a 2D image.

Steps:

1. Create a Vuforia account.
https://developer.vuforia.com/

2. Create a License Key.
In the Vuforia Dev Portal under the Develop tab, there are two tabs near the top of the page:
License Manager
Target Manager
First, select the License Manager and click Get Development Key
Follow the instructions to get something that will look like this:

AWlVzpP/////AAAAGZpareVHUUsIv/GidYFZj8cEU43tA0TLHs2fcHvJF6K95wf
44W4t3M7ijdotQBKgLUAEoDXIeEXakX9h9jUW/8lx27GWJ03a5Jk0z1jv0CH
9xuiXqYcbDIkm63o0qQlninybXRaN3QeA9wIwy2KwNd3t/Jd/VhMl+DJMk1G
W1QZvfeZaNmtCbanzxwynjdM6kV+4m9B9kIgwIOBrNPo5GhPZvZYdyat2M
LmH1sCkXc6zqD3BCTJx44Ey/Ih5vm0z1baiJAYVZmpnZPhCQFW3YeCtZxu7
TzzDfecsdMjT8IOoYLyAyRLWaubG2IXo9ShtmqEOPmH4g+kMasJNJgV9RLXt
JEEwgsVVgHSQKGlF1dY2

Copy this License Key or keep it somewhere you can find it. We will need it later.

3. Create a Target Database.
Select Target Manager at the top of the page
Add a New Database and Upload as many target images as you would like to use following these specifications:

No transparency in the image, even png file formats should be completely opaque
24 bit RGB color
High contrast
Try to get high star ratings on the images you upload
Here is the link created by official Vuforia forum teaching you how to upgrade the rating of your image.
https://library.vuforia.com/articles/Solution/Optimizing-Target-Detection-and-Tracking-Stability.html
When your Database has all of your desired target images, select the Download Database Button in the upper right-hand corner.
Run this file with Unity open to add its contents to your assets

4. Set Up Vuforia in Unity.
Unity should now be open
Go to the GameObject Menu in the Toolbar and add an AR Camera from Vuforia
Delete the Main Camera Object from the Scene and select the AR Camera
Click the Open Vuforia Configuration Button
Paste the License Key from earlier into the App License Key Text Box
Under Databases uncheck all of the existing Vuforia Databases (unless you want to use them for some reason) and load and activate the database which you have just installed (the one you uploaded your targets to)

Go to File > Build Settings > Player Settings
Repeat the following steps for PC, Mac, & Linux, iOS, and Android:
Under XR Settings check the Virtual Reality supported box
Remove any existing Virtual Reality SDKs and add Vuforia
Under the Android Settings go to Other Settings and set the Device Filter to ARMv7 and Uncheck Android TV Compatibility

5. Place Target into the Scene
Go to the GameObject Menu in the Toolbar and select Image Target
Select the Image Target you created and in the Inspector under Image Target Behaviour (Script) Set the Database to the one you previously downloaded and set the image target to be the target you would like to test
Create a Cube and make it a child of the Target, center the cube on the target
Ensure that the AR Camera can see both the Target and its child cube
Run your program and hold up your target to the webcam
A cube should appear over the target if everything is working properly

6. Exporting
Android
Go to the File menu in the toolbar and then Build Settings
Select the Android option under the Platform menu and select Switch Platform
Then select Player Settings and under Other Settings in the Inspector menu change the project name to anything in the following format: com.companyname.projectname Be sure to keep the “com” as part of your name
Go back to the Build Settings menu and select Build to build the file to the downloads folder of your computer
Using a USB connection copy the created .apk file to the “downloads” folder of your Android device
Using the “My Files” app on your device run the .apk file from “downloads”