# How to Run the 'Cloud User Manager' Demos

## Prerequisites

1. This package uses Microsoft Cognitive Services for face detection and user recognition. These services are free of charge, if you don't exceed a certain limit (30000 requests per month, 20 per minute, as of now).
2. In order to use the Cognitive Services for face detection and user recognition, you need to subscribe for Face API. To get a subscription key, go to this page: https://www.microsoft.com/cognitive-services/en-us/face-api and press the big orange 'Get started for free'-button.
3. You will be requested to sign-in with your Microsoft account. This is the moment to sign-up for Microsoft account, if you don't have one already.
4. Request subscription keys for Face Preview and Emotion Preview (and any other free previews that may interest you, of course).
5. If you don't see the list of your current subscriptions yet, click 'My Account'-link, located in the top right corner of the browser window.
6. In the list of subscriptions, find 'Face Preview' and unhide one of its keys (it doesn't matter if primary or secondary one). The same way, unhide one of the 'Emotion Preview' subscription keys, as well.
7. Create an empty Unity project and import this package into it.

## Face & Emotion Detection Demo

1. Open Assets/DemoScenes/FaceDetectionDemo-scene.
2. Select the FaceController-game object in Hierarchy. Then copy & paste the Face-Preview subscription key from Prerequisites-p.6 above to the 'Face Subscription Key'-setting of the FaceManager-component.
3. If you need emotion detection too, copy & paste the Emotion-Preview subscription key from Prerequisites-p.6 above to the 'Emotion Subscription Key'-setting of the FaceManager-component. Otherwise disable the 'Recognize emotions'-setting of the FaceDetection-component.
4. You are all set up. Now run the scene.
5. The upper left part of the screen shows the output of your machine's web-camera, if there is any. Click on the camera image, to make a shot for face & emotion detection.
6. Alternatively, you can click on the lower left window, to select a jpeg-image for face & emotion analysis.
7. The selected picture or camera shot will be displayed on the lower left window, along with the detected faces on it. All detected faces will be outlined as rectangles with different colors.
8. Further information about the detected faces and emotions will be displayed in the same color on the right part of the screen. The information includes gender, age, smile- and emotional status for each detected face.

## User Recognition Demo

1. Open Assets/DemoScenes/UserRecognitionDemo-scene.
2. Select the FaceController-game object in Hierarchy. Then copy & paste the Face-Preview subscription key from Prerequisites-p.6 above to the 'Face Subscription Key'-setting of the FaceManager-component.
3. Emotion detection is not needed in this demo, so you can leave the 'Emotion Subscription Key'-setting of the FaceManager-component blank.
4. Look at UserGroupManager-component now. The 'User Group Id'-setting contains the group name that will be used for user recognition. This group will keep the users, their names, respective faces and data. By

default it is 'game-users', but you are free to change it, as to your own preference. This way you could keep several different groups of users – by using different group IDs. The group will be created, if not found.

5. You are set up now. Run the scene.
6. The screen will show the output of your machine's web-camera. Press the 'Space' (Jump)-key to make a camera shot for user recognition.
7. Alternatively, press 'Ctrl' (Fire1)-key to select a jpeg-image for user recognition.
8. The user recognition results will be displayed on the right part of the screen, along with the detected faces on the image. All detected faces will be outlined as rectangles with different colors.
9. The panel on the right part of the screen will show the recognized, as well as not-recognized users. The recognized users will be displayed as a list of user names in the same color as the respective face rectangles. The not recognized faces will be displayed under 'New user'-label, as a list of '<Color> Face'-buttons.
10. If you want to add any of the not-recognized users as a new user, click the respective '<Color> Face'-button, type the name of the user and then press the 'Add User'-button.
11. Press 'Space' or 'Ctrl'-key to return to the camera view again.

## Group Management App

1. Open Assets/GroupManagement/GroupManagement-scene. This scene is not a demo, but more a back-office application for group and user management. Keep in mind, you will not be able to see the user faces, because the face images cannot be downloaded from the cloud. You will see user names, IDs and face IDs.
2. Before you start, just like in the demos, select the FaceController-game object in Hierarchy. Then copy & paste the Face-Preview subscription key from Prerequisites-p.6 above to the 'Face Subscription Key'-setting of the FaceManager-component. Emotion detection is not needed in this app, so you can leave the 'Emotion Subscription Key'-setting of FaceManager-component blank.
3. Make sure that 'User Group Id'-setting of UserGroupManager-component contains the same group name that you used for user recognition, like for instance in the User-recognition demo above.
4. Now run the scene.
5. You will see the current list of users in the pre-configured group. You can refresh the list at any time by clicking on the 'Refresh' (circled arrow)-button, in the lower right corner of the window.
6. Click on any user in the list to see more information about him. You will see the user name, his ID and face ID (if any). This information gets created when the user adds his face as new user – see User Recognition Demo-p.9 above.
7. You can change the user name, add or modify the custom data for this user, or delete the user and all his data altogether. You will then return to the list of all users.

## How to Include Face & Emotion Detection in Your Own Unity Project

1. Copy the Assets/OxfordScripts-folder from this package to your project's Assets-folder.
2. Create an empty game object in your scene. Name it 'FaceController'.
3. Add FaceManager as component to the newly created FaceController-object.
4. Copy & paste the Face-Preview subscription key from Prerequisites-p.6 above to the 'Face Subscription Key'-setting of the FaceManager-component.
5. If you need emotion detection too, copy & paste the Emotion-Preview subscription key from Prerequisites-p.6 above to the 'Emotion Subscription Key'-setting of the FaceManager-component.
6. You can copy FaceDetection.cs from DemoScenes/Scripts-folder to a folder in your project and then use it as component in the scene. Don't forget to setup its image source.

7. Alternatively, you can use the public API-functions of the FaceManager-component in your scripts, just like the FaceDetection.cs-script in the demo does. You can use its source as an example.

## How to Include User Recognition in Your Own Unity Project

1. Copy the Assets/OxfordScripts-folder from this package to your project's Assets-folder.
2. Create an empty game object in your scene. Name it 'FaceController'.
3. Add FaceManager as component to the newly created FaceController-object.
4. Copy & paste the Face-Preview subscription key from Prerequisites-p.6 above to the 'Face Subscription Key'-setting of the FaceManager-component. Emotion detection is not needed here, so you can leave the 'Emotion Subscription Key'-setting of the FaceManager-component blank.
5. Add UserGroupManager as component to the FaceController-object. Set its 'User Group Id'-setting to the name of the user group you'd like to use.
6. You can copy UserRecognizer.cs from DemoScenes/Scripts-folder to a folder in your project and then use it as component in the scene. Don't forget to setup its image source.
7. Alternatively, you can use the public API-functions of the UserGroupManager-component in your scripts, just like the UserRecognizer.cs-script in the demo does. You can use its source as an example.

## More Information, Support and Feedback

Web: https://rfilkov.com/2016/05/02/cloud-user-manager/
E-mail: innovative.smart.systems@gmail.com
Facebook: https://www.facebook.com/issbgcom
Twitter: https://twitter.com/roumenf