AV & AR Guiding Question and Resource

ctive	Guiding Question	Guiding Resource
yn an App that augments y using interactive content. bing stone to learn AV dation amera ound (Play Audio)	**Camera** • How to capture video? • How do we ask user permission to use camera? • How to play a video inside the app? • What is AVFoundation? • What if we want to create our camera in app? • Why do we use AVFoundation not UIImagePickerController? • ..... **Sound** • How to play sound inside your app? • What the different between open camera and playing sound in creating input or output of media in AVFoundation? • How to convert text to spoken audio? • How to configure audio session in AVFoundation? • How to subscribe and respond to important audio session notifications? •	Camera and media capture • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture Apple Documentation about UIImagePickerController • https://developer.apple.com/documentation/uikit/uiimagepickercontroller Requesting Authorization for Media Capture • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture/requesting_authorization_for_media_capture_on_ios Setting Up a Capture Session • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture/setting_up_a_capture_session Choosing a Capture Device • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture/choosing_a_capture_device Saving Captured Photos • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture/capturing_still_and_live_photos/saving_captured_photos Capturing Video in Alternative Formats • https://developer.apple.com/documentation/avfoundation/cameras_and_media_capture/capturing_video_in_alternative_formats Speech Synthesis • https://developer.apple.com/documentation/avfoundation/speech_synthesis Responding to Audio Session Route Changes • https://developer.apple.com/documentation/avfoundation/avaudiosession/responding_to_audio_session_route_changes Handle Audio • https://developer.apple.com/documentation/avfoundation/audio_track_engineering • https://developer.apple.com/documentation/avfoundation/avaudioplayer
yn an App that augments y using interactive content. bing stone to learn AR in ral: oordinate system ane detection ject detection (2D/3D) sset management (play with sset) ource of none copyright asset ction (animate model) etect interaction	**ARKit Basics** • How to check device support? • How to request for user permission? • What is an ARSession? • What are the available AR Configurations? • What component can be used to render AR content? ARFrame. ARSCNView, ARSKView? • ..... **Coordinate System** • What is the coordinate system in ARKit look like? • ..... **Basic SceneKit** • How to add virtual 3D objects to the virtual environment? • What basic 3D shapes are available in SceneKit?	Support & User Permission • https://developer.apple.com/documentation/arkit/verifying_device_support_and_user_permission AR Session, Config & Views • https://developer.apple.com/documentation/arkit/choosing_which_camera_feed_to_augment • https://developer.apple.com/documentation/arkit/arsession • https://developer.apple.com/documentation/arkit/managing_session_lifecycle_and_tracking_quality Coordinate • https://developer.apple.com/documentation/arkit/understanding_world_tracking Tracking and Visualizing planes • https://developer.apple.com/documentation/arkit/tracking_and_visualizing_planes Saving and Loading World Data • https://developer.apple.com/documentation/arkit/saving_and_loading_world_data

- How to animate 3D shapes?
- How to position an object relative to another node?
- How to add custom 3D objects
- .....

Plane Detection
- How to detect horizontal and vertical planes?
- How to add 3D shapes to a plane?
- How to add 2D shapes to the plane?
- .....

Object Detection
- How to detect a Reference Image?
- How to scan a real object into a 3D model?
- How to import a scanned 3D model into an ARKit project?
- How to detect a Reference Object?
- How to respond to a detected image changing location?
- .....

Advanced
- How to create a persistent AR experience? ARWorldMap
- .....

AR Experience with Audio
- https://developer.apple.com/documentation/arkit/creating_an_immersive_ar_experience_with_audio

Adding Realistic Reflections to an AR Experience
- https://developer.apple.com/documentation/arkit/adding_realistic_reflections_to_an_ar_experience

Detecting Images in an AR Experience
- https://developer.apple.com/documentation/arkit/detecting_images_in_an_ar_experience

Tracking and Visualizing Faces
- https://developer.apple.com/documentation/arkit/tracking_and_visualizing_faces

Providing 3D Virtual Content with SceneKit
- https://developer.apple.com/documentation/arkit/arscnview/providing_3d_virtual_content_with_scenekit

Tracking & Altering Images
- https://developer.apple.com/documentation/arkit/tracking_and_altering_images

Scanning Real Object To Get 3D Model, Importing To Project, and Detecting The Reference Object
- https://developer.apple.com/documentation/arkit/scanning_and_detecting_3d_objects