Task 2: Problem Statement

> *The app which you will develop in task 1, how will you showcase it into a safari browser in iOS without building it into an iOS app. Please find more detailed info below on what should be included in the proposed solution.*

Proposed Solution

AR capabilities of Safari browser: Safari can be used for AR content from v.12 and uses Quick Look to display USDZ files of virtual objects in 3D or AR on iPhone and iPad.

Current challenges of viewing Task 1 app on iOS Safari browser: So far only tracking (using jsartoolkit5) and registration is available on browsers. 3D elements may utilize a lot of CPU power and affect the battery. One other obvious challenge is network, a poor network may not deliver the desired experience to the user. Unlike Vuforia or other SDKs in Unity, we can only track square pictorial images/barcodes and not 3D objects or Face Tracking.

Benefits of using a browser instead of an app for AR: Building prototypes quickly of large scale projects is a great way to take advantage of AR despite its limited capabilities. It is a great tool for those with a web development background and it is a lightweight solution.

Implementation of any AR application through a web browser is best achieved through **webAR** or **Apple Quick Look**. **WebAR** uses **AR.js and three.js** to help build AR content that can be deployed on latest web browsers without having to install an app.

Development can be done through a browser using online editors such as **Glitch** or **Codepen**, Or simply through a HTML file and deploy it on a local server.

Desired version of AR.js needs to be imported, in our case we will have to import either **marker based tracking** or **image based tracking**.

Below is an example of importing the AR.js version which supports image tracking.

```
<script
src="https://raw.githack.com/AR-js-org/AR.js/master/aframe/build/aframe-ar-nft.js">

<script
src="https://raw.githack.com/AR-js-org/AR.js/master/three.js/build/ar.js">
```

Once the code is run on a server, we can open the webpage on our phone and then scan the marker to get started with viewing the content.

PS: I have not had an opportunity to test the same with an Apple device therefore my level of approach is rather novice.