Authors:

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System requirements for running the app:

* Android phone with at least a version 8.1
* AR Core supported device, <https://developers.google.com/ar/discover/supported-devices>
* App needs access to camera.
* Tested with Samsung 9.

System requirements for building the app:

* Unity version 2019.4.14f1
* Gradle version >= 6.7 and Unity configured to use it
* Unity has Android development tools installed
* In unity package manager, AR Foundation, ARCore XR Plugin, ARKit Face Tracking and ARKit XR Plugin installed with version 4.0.8. TextMesh Pro also needed.

**Following sections contains spoilers**

Created by us:

* 3D models:
  + Gold
  + Added “Caesar” name to the Caesar Bust
  + End portal with the room
  + Cookie and the text inside the cookie
  + 3d Texts on Monarchs
  + Numbers
* Pictures:
  + Pictures of playing cards
  + Pictures of countries
  + The actual maze generated online and merged with the poker chip
  + Text on boarding passes
* Code base:
  + All script files are written by us
  + Shaders under Custom section are copies from the correct shaders with little additions made by us to make them work with the portal
* Sound:
  + Morse code generated online
* Texts:
  + Introduction
  + Texts about monarchs is taken from Wikipedia, with little modifications according to our needs.
  + Monarch room introduction
  + Hints
* Video
  + Video playing on face

Created by others:

* 3D models:
  + Plane
  + Caesar bust
* Sound effects:
  + Plane
  + Police
  + Cookie
  + Unlocking sound
* Pictures
  + Phone
  + Clock
  + Base of chicken picture
  + Lock
  + Background of Maze
  + Base of boarding passes
  + Pictures of monarchs
* Textures
  + Home screen background
  + Button texture

Overview of the system:

It is an AR Escape room. It uses image recognition to show 3D objects on the images. To have full experience of the game you also need some physical equipment like locks, deck of cards and world atlas.

Pictures and their function:

Cards and countries only work with specific deck and atlas.

* Clock – Shows timer on screen
* Phone – Plays morse code
* Chicken – Plays chicken sound
* Cookie – Shows a cookie, when cookie is visible, click on it and it will show a quote. When clicked the first time, plays a sound effect
* Lock – Shows an overlay with buttons, when right directions are entered, plays unlock sound effect.
* Maze – Shows a riddle text, after right directions have been entered to the lock
* ElizabethII – Shows “Name”
* Henry VII – Shows “Key”
* James VI – Shows “Is”
* William I – Shows “Cipher”
* Louis XIV – Shows Caesar’s Bust
* Jack of Spades – Shows a number
* Queen of Hearts – Shows a number
* King of Diamonds – Shows a number
* Countries in the following order:
  + Netherlands – Shows a plane and plays plane sound effect
  + Japan – Shows a plane and if plane sound effect not playing, plays it.
  + South Africa – Shows a plane and if plane sound effect not playing, plays it.
  + Morocco – Shows a portal with gold and time taken to complete, and if plane sound effect not playing, plays it. It should be possible to enter the portal, but it disappears sometimes.

Instructions:

Install the .apk file on the Android phone, which supports AR Core. Give camera permission to the app. Start playing, the instructions how to complete the game are in Walkthrough.pdf.