

AUGMENTED REALITY DESIGN DOCUMENT

Project Title: Tiny Wheels, Big Story: Discover the real cars behind your favorite toy cars

1. Introduction

- What is the title of your AR project?

The title of the Augmented Reality project is called “Tiny Wheels, Big Story: Discover the real cars behind your favorite toy cars.”

- Why did you choose this topic or idea for your AR project?
Toy cars are objects that mainly kids and collectors are familiar with, but not everyone knows the real-world cars they represent or are inspired by. This project aims to bring those toy cars to life by displaying a video and description that tells their story.

- Are you planning to create an **Image-Based AR** or **Location-Based AR** experience? Why?

Image-Based AR is the best way to connect physical objects like toy cars with digital content. It's simple to implement, doesn't require special hardware, and allows users to just show their toy cars to the camera to trigger an immersive experience.

- What do you want users to learn or experience from your AR project?

Users will learn the history, model name, and specs of the car, and see the real-life version in action. It will make toys more educational and fun, especially for young or old audiences that are interested in cars.

2. Project Options

Students may choose **one** of the following AR types and provide details in their proposal:

- **Image-Based AR (Marker-Based):**

- **Images to be Augmented (Markers):**

- > Toy Car of a Toyota: Use the top view or side view of your popular toy car models. It will show a detailed description of the car on the right side and the video on the left side of the car.

- > Toy Car Cards (Like roleplaying cards for nissan r33 card and toyota yaris card): these colorful designs often contain the car's name and image, making it easy to use as recognizable markers. As the card gets scanned, the video will play where the picture is placed (having the borders of the video having a feathered opacity in order for it to blend in with the card). The description will be on the right side of the camera for the scanned card will be moved on the left and the description will have a black gradient so that the text would be seen clearer.

- > Car Posters eg (nissan): Printed car of a Nissan, there will be a specialized logo on the top of the print that will use as a marker for it to have the description on the side of as the camera gets panned on the left side and the description has a black gradient showing the description easier, the video will be on the top part of the description as there is no space on the left side as the poster is using most of the space.

- > Color coded cards to put the car in (lexus, honda): you place the car in the color coded card and those colors on the car as well as the car on the card are used as markers in order for the things to pop-up.

- > Side View of the Car (toy car of Nissan): It shows a different description as well as a different video and the side of the car is used as a different recognizable marker.

The car gets scanned and a different layout, as the marker is scanned, the video will be on top of the car and the description will be on the bottom of the physical car that's been scanned. The description will have a black gradient in order for the text to be seen better.

- **Digital Objects Augmented::**

-

- Printed car of a Nissan 2 : scrollable information about the ferrari
(Printed car of a Nissan, there will be a specialized logo on the top of the print that will use as a marker for it to work out)(

- > Short Video Clip (10-15 seconds): showing the real version of the car in motion (driving fast on a race track or cruising in the city)
 - > Overlay Description Text Box: Car name and model (example: Nissan GTR R35),
 - > Origin and features (example: “Japan-made sports car known for speed and precision”)
 - > Fun facts or Trivia
 - **Interactivity of Digital Objects:**
 - > Users change the view of the car (example: front view to back view), it will show a different description of the car and a different video on the side.
 - > Users can swipe down to read more information (scrollable description)
-

3. Target Audience

- **Who will use your AR project?**
 - > Kids or Adult who love toy cars
 - > Car enthusiasts and collectors
 - > Parents who want toys to be educational
- **What age group or type of users are you focusing on?**

>Primarily for ages 7 - 15, but also appealing to adult collectors

- **Why would this audience be interested in your AR experience?**

- > Kids are curious and love seeing things come to life.

- > Collectors enjoy learning more about the real cars behind their miniature models.

- > It makes the toy experience more interactive and informative

- **What devices will they likely use to access your AR app?**

- > Computer screens but can also be used in Smartphones as well (Android and IOS)

- > Most users will use the camera feature on the computer or via a mobile AR app.

4. Expected Outcomes (insert screenshot pegs)

- What will the final AR experience look like and how will it work?

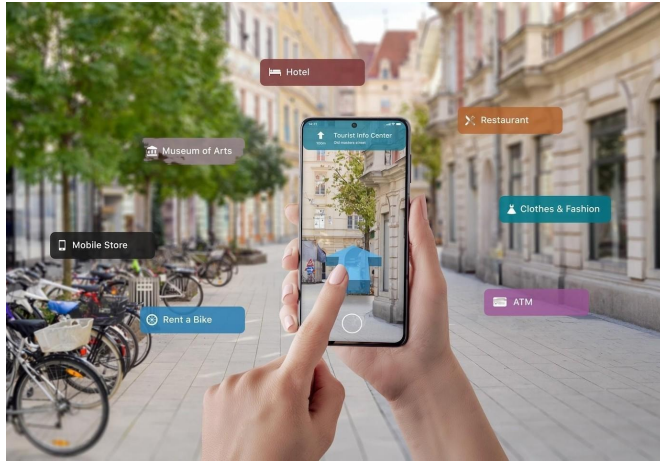
- > When a toy car or its card is scanned, a video plays above the toy showing the real car in action.

- > A semi-transparent text box appears with a brief description and the user can swipe the information for more information.

- What are the main features or interactions users will experience?

- > Scan toy or image -> Play Video + Show car facts
- > Swipe for more car information and turn the car around for different types of info
- How will your AR project help your audience learn or enjoy the content?
 - > Makes toys more engaging and educational
 - > Helps kids associate toys with real-life cars and intrigues adult collectors as well for more information about the toy car.
 - > Encourages learning through play.
- What materials or tools will you need to complete the project?
 - > Toy cars or images
 - > Phone Camera, or computer camera + AR development platform
 - > Edited video clips of the real cars
 - > Car model data and trivia for the descriptions
- How will you present or demonstrate your AR project to the class?
 - > Demo scanning a toy car using mobile device or the PC camera
 - > Show video, description popping up in real-time
 - > Explain the process marker creation, content used, tools, and audience





5. Project Deadline: August 18, 2025

Rubrics:

IMAGE-BASED AUGMENTED REALITY RUBRICS

CRITERIA	94 to 100 Excellent to Superior	89 to 93 Very Good to Good	71 to 88 Satisfactory to Pass	69 and below Fail	POINTS AWARDED
Accuracy of Image Tracking (20%)	Consistently accurate image recognition under various conditions; minimal errors	Mostly accurate, occasional errors in recognition	Recognizes images but with frequent errors	Poor image recognition, significant errors and inconsistencies	
Creativity of Digital Augmented Objects (20%)	Highly creative and original digital objects; excellent design and relevance	Good creativity and design; objects are relevant and well-made	Some creativity, but objects are somewhat generic or poorly designed	Lacks creativity; digital objects are unoriginal or poorly designed	
Creativity of Physical Images (20%)	Physical images are highly creative and enhance the AR experience	Good creativity in physical images; they complement the AR well	Some creativity in physical images, but they could be more engaging	Lacks creativity; physical images are plain and do not enhance the experience	
Interaction with Digital Augmented Objects (20%)	Interactions are intuitive, smooth, and enhance the user experience	Good interactions, mostly smooth and intuitive	Basic interactions; somewhat clunky or unintuitive	Poor interactions; difficult to use or understand	
Completeness of Requirements (20%)	All project requirements are fully met and exceed expectations	Most project requirements are met, with some minor omissions	Some project requirements are met, but several key elements are missing	Many project requirements are not met or are poorly addressed	