CAI2C09 CTAI

ALYAA' IMAN BINTE AMRAN

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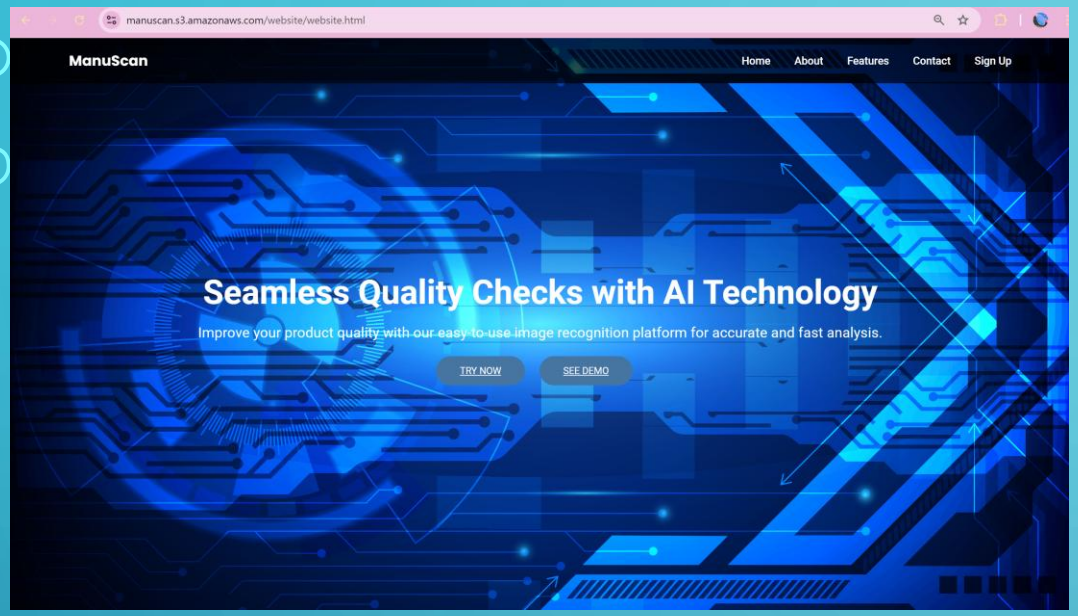
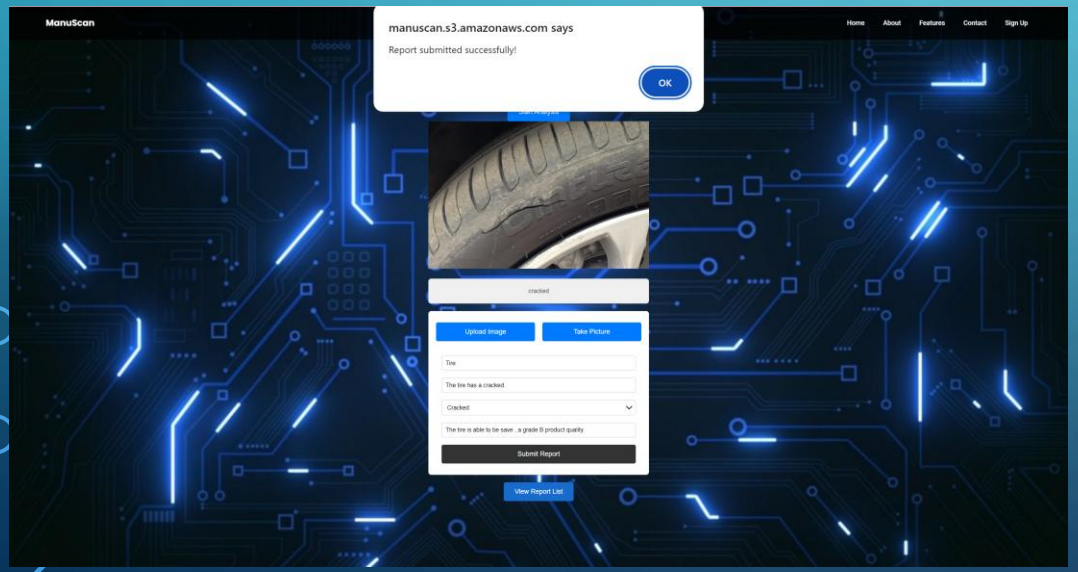
PC02

OVERVIEW OF WEBSITE





BREAKDOWN OF SERVICES USED

- **Amazon S3:** This service is used for hosting the static website and storing dataset images. The S3 bucket is configured for static website hosting, providing a public URL for access to the website.
- **AWS Rekognition:** Integrated for image analysis, specifically detecting defects in tire images. The service processes the images uploaded by users and returns analysis results, which are stored in the database.
- **AWS Lambda:** Several Lambda functions are used to handle backend processes. One function manages CRUD operations for product analysis reports, another processes images and interacts with AWS Rekognition, and a third manages notifications.
- **AWS RDS (Relational Database Service):** A MySQL database hosted on RDS is used to store product analysis reports. The database is secured using VPC security groups, ensuring restricted and secure access, and all database interactions are handled by Lambda functions.
- **AWS API Gateway:** This service is used to create RESTful APIs that connect the website frontend to the backend Lambda functions. It routes requests for image analysis, report creation, viewing, updating, and deletion.
- **AWS SNS (Simple Notification Service):** Used to send notifications when a defect is detected in a product. This service ensures that relevant stakeholders receive real-time alerts.
- **AWS Secrets Manager:** Manages and stores sensitive information securely, such as database credentials. Lambda functions access these secrets to connect to the RDS database securely.

CHALLENGES FACED

- One challenge I faced was being **unable to implement the initial additional services** I proposed, such as AWS SageMaker and Athena, due to certain restrictions.
  - I overcame this challenge by **integrating other services like SNS and Secrets Manager,** which made my website more versatile and secure.
- Another common challenge I encountered was **dealing with CORS errors** whenever I tested my Lambda functions.
  - I managed to overcome this issue by consistently deploying my stages and updating the CORS settings whenever changes were made.

POTENTIAL ENHANCEMENTS

- **Add Additional Services:** I would like to integrate more AWS services to enhance the functionality and scalability of the website.
- **Improve Website Design:** Focus on improving the website's design to make it more aesthetically pleasing and user-friendly.
- **Expand Dataset:** Increase the dataset for the AWS Rekognition model to improve accuracy and robustness.

VIDEO LINK

https://youtu.be/9FvRmOkTeyg