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Report on QR Code Scanner Extension

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The following report provides an overview of my extension developed for my QR code scanner. The extension includes additional functionality consisting of handling barcode detection, then making an API calls to retrieve product names. This report will discuss the code implementation, identified problems, and improvements made.

To improve barcode detection speed, my extension incorporates an image cropping method due to the fact that I've already written a barcode detection script. By adding a padding value to the bounding box coordinates, the image is extended to provide more room for the barcode to be scanned incase of computing errors. This approach allows the QR code scanner to capture the entire barcode, reducing the chances of missing information.

One issue I encountered during barcode detection was the inability to read barcodes from images with excessive shine. This problem could arise due to glare or reflections, making it difficult for the scanner to accurately interpret the barcode. To address this issue, additional image processing techniques such some edge detection or thresholding. However I was running short on time so I decided to have a failsafe try except to throw a message when the image is unreadable.

The extension also integrates an API to retrieve product information based on the barcode number. In order to prevent excessive API calls during debugging and testing, I implemented a spoof method. When the debug mode is enabled, the API call is replaced with a simulated response, returning a placeholder value ("SPLOOF RETURN"). This approach reduces the usage of API resources while testing the extension's functionality.

my extension incorporates a logging method to capture relevant information during execution. The logging feature is activated when the debug mode is enabled, providing detailed insights into the process. This enables developers to track the flow of execution, identify potential issues, and monitor the results of barcode detection and API calls.

The extension to the QR code scanner demonstrates valuable enhancements for barcode detection, error handling, API integration, and debugging. However, challenges with barcode recognition in images with excessive shine were encountered. Suggestions for improvement include exploring alternative barcode detection approaches and applying image preprocessing techniques. These enhancements will enhance the extension's overall performance and accuracy, ensuring a better user experience.