Code Challenge:

You are a senior member of a team that has been tasked with developing programmatic image storage and processing service called ProgImage.com.

Unlike other image storage services that have a web front-end and target end-users, ProgImage is designed as specialized image storage and processing engine to be used by other applications, and will (only) provide high-performance programmatic access via its API.

Apart from bulk image storage and retrieval, ProgImage provides a number of image processing and transformation capabilities such as compression, rotation, a variety of filters, thumbnail creation, and masking.

These capabilities are all delivered as a set of high-performance web services that can operate on images provided as data in a request, operate on a remote image via a URL, or on images that are already in the repository. All of the processing features should be able to operate in bulk, and at a significant scale.

Required

1. Build a simple service using TypeScript (or JavaScript) that can receive an uploaded image and return a unique identifier for the uploaded image that can be used subsequently to retrieve the image.
2. Extend the service so that different image formats can be returned by using a different image file type as an extension on the image request URL.
3. Write a series of automated tests that test the image upload, download and file format conversion capabilities.

Out of scope

1. The service should be functional but does not need to be production-ready.
2. You do not need to handle input validation and error cases.
3. Your service can run locally. It does not need to be deployed anywhere.

Questions we will ask

1. What technology choices did you select to implement the service? Why?
2. What would you want to add to your service before deploying and operating it in a production environment?
3. How would your service handle load at scale?
4. How would you extend the service to handle different image transformation types e.g. rotations, resizing?
5. What testing did (or would) you do, and why?
6. What would you have done if you had to do this in 1/3 of the time?