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CS300: Elements of Software Engineering
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Exercise 6.9 (Textbook Pg. 184; Lecture Notes Pg. 15 and 16): Consider the Upload Service for photographs to be printed as shown in Figure 6.5. Suggest how this might be implemented and then design a RESTful interface for this service, explaining the function of each of the HTTP verbs. For each operation, identify its input and output.

A RESTful API is an application program interface (API) that uses HTTP requests to GET, PUT, POST and DELETE data and get responses to those requests. An API for a website is code that allows two software programs to communicate with each other.

POST: Create(The POST verb is to create new resources)
GET: Read(The HTTP GET method is used to read (or retrieve) a representation of a resource)
PUT: Update/Replace(PUT is most-often utilized for update capabilities)
PATCH: Update/Modify(PATCH is used for modify capabilities)
DELETE: Delete(It is used to delete a resource identified by a URI.)

1. To upload, print, or use any service, we must first register using the GET request, after which we will receive the Registration form.
2. Fill out the registration form and submit it, which will generate a POST request.
3. Now that we have an account, we must login in order to use the services. To do so, use a GET request to load the login page.
4. After filling out the form, it will POST the request, match the data in the database, and open our account page using a GET request.
5. Now we must use the POST operation to upload the photo.
6. If we uploaded the incorrect one, we must re-upload it using the PUT operation, leaving the name and all other information intact.
7. If we believe we have the correct one and are ready to print our photo, click the proceed button, which will open a payment page using a GET request after sending a POST request.
8. So, after filling out the payment information using the POST a request method, it will send a request to our browser, which will READ the request and display the final print to be completed.
9. On the same page, it will display the Dispatch status using a PATCH request.