In this project, you will expand on the concepts you learned in Module 11 to create a website that shows your *collection* of books. You will start by adding the cover image for each book so that they are rendered on your website beside their corresponding book titles. Next, you will add more users along with their respective usernames and passwords. Building on what you learned in Module 11, you will also set their roles to either admin or reader. This will allow the users to perform different actions on the website based on their roles. Finally, you will define a *function* that only allows users with the admin role to add new books to your website.

Prior to beginning this project, be sure to review the submission instructions below to ensure that you collect the required screenshots as you progress through the project.

This project is worth a total of 100 points.

**To complete this project, follow these steps:**

1. Open a Terminal window on your machine and install the flask-restful and flask-jwt-extended *libraries* using the following commands:  
     
   pip install flask-restful  
   pip install flask-jwt-extended  
   Provide two screenshots. One screenshot should show that you successfully installed the flask-restful *library*. One screenshot should show that you successfully installed the flask-jwt-extended *library*.
2. Download and unzip the [Project 15.1](https://classroom.emeritus.org/courses/10605/files/3007326/download) folder on your machine. Provide a screenshot to show that you successfully opened the folder using VS Code.
3. In the app.py file, add two more books of your choice. Provide a screenshot to show that you successfully added two more books to thebooks *list*.
4. Inside the static folder, add the cover images for the books that you just added. Provide two screenshots, one for each new cover image, to show that you successfully uploaded and opened the new cover images using VS Code.
5. Inside the books.html file, add a line of html code to match each book cover to the book in thebooks *list*. Use the following template for this line of html code:  
     
   <img src="static/image{\*book\_id\_reference\*}.png" width = "50">  
   Once you are satisfied with your solution, provide a screenshot to show that you successfully added the correct html line of code in the books.html file.
6. Inside the app.py file, add two more users, one with the role of reader and one with the role of admin. Feel free to choose any username and password you would like to define these users. Provide a screenshot to show that you successfully added two new users, one with the role of admin and one with the role of reader, in the app.py file.
7. Write the admin\_required(fn) *function* to your app.py file. This *function* will follow the template below:  
     
   def admin\_required(fn):  
    @wraps(fn):  
    def wrappers(\*args, \*\*kwargs):  
    #add code below  
      
    return fn(\*args, \*\*kwargs):  
    return wrapper  
   This *function* should get the *claim* from the users defined in your code and allow the users to add books only if their role is set to admin. If a user’s role is not equal to admin, then the *function* should return the following exception:  
    return jsonify(msg = ‘Admins only!’), 403  
   Provide a screenshot to show that you correctly defined the admin\_required(fn) *function*.
8. Run and debug your code in VS Code. Provide a screenshot of your Terminal window to show that your code ran correctly and successfully connected to localhost:5000.
9. In your browser, navigate to localhost:5000/. Provide a screenshot of your browser window to show that you correctly opened the page localhost:5000/.
10. Log in using the admin username and password that you defined in your app.py file. Provide a screenshot to show that you successfully logged in as an admin. For example, you can use the Testuser account.
11. After logging in, navigate to the “Books” tab. Provide a screenshot to show that you can successfully see all the books defined in the app.py file along with their correct cover images.
12. Navigate to the “Add Books” tab. Provide a screenshot to show that you can add a book. Then, log out of the admin account.
13. Next, log in using the reader username and password that you defined in your app.py file. Provide a screenshot to show that you successfully logged in as a reader. For example, you can use the John account.
14. Navigate to the “Add Books” tab. Try to add a new book. You should receive an error message. Provide a screenshot of the error message to show that you can’t add a new book to your website using an account with only reader privileges.

**Submission Instructions:**

Your submission for this project should be a Word document that includes the following screenshots, each labelled for the step that the screenshot represents:

1. Provide two screenshots. One screenshot should show that you successfully installed the flask-restful *library*. One screenshot should show that you successfully installed the flask-jwt-extended *library*.
2. Provide a screenshot to show that you successfully opened the Project 15.1 folder using VS Code.
3. Provide a screenshot to show that you successfully added two more books to thebooks *list* in the app.py file.
4. Provide two screenshots, one for each new cover image, to show that you successfully uploaded and opened the new cover images in the static folder using VS Code.
5. Provide a screenshot to show that you successfully added the correct html line of code in the the books.html file.
6. Provide a screenshot to show that you successfully added two new users, one with the role of admin and one with the role of reader, in the app.py file.
7. Provide a screenshot to show that you correctly defined the admin\_required(fn) *function*.
8. Provide a screenshot of your Terminal window to show that your code ran correctly and successfully connected to localhost:5000.
9. Provide a screenshot of your browser window to show that you correctly opened the page localhost:5000/.
10. Provide a screenshot to show that you successfully logged in as an admin.
11. Provide a screenshot to show that you can successfully see all the books defined in the app.py file along with their correct cover images in the “Books” tab.
12. Provide a screenshot to show that you can add a book using the “Add Books” tab.
13. Provide a screenshot to show that you successfully logged in as a reader.
14. Provide a screenshot of the error message to show that you can’t add a new book to your website using an account with only reader privileges.