University of Colombo School of Computing
SCS 2208 - Rapid Application Development
Lab Sheet 09 - Node.js + Express.js

1. Set up an Express.js server to serve images from a directory named "images." Display these images using HTML **'<img>'** tags in an HTML page.

   Hint: Use the **express.static** middleware to serve the "images" directory and create an HTML page with **'<img>'** tags pointing to the image URLs.

2. Enhance the previous exercise by creating a dynamic route that accepts an image filename as a parameter and displays that specific image.

   Hint: Use the route parameter to dynamically generate the image URL in the **<img>** tag.

3. Build a basic authentication middleware that checks for a specific API key in the request headers and allows access only if the key matches.

   Hint: Create a middleware function that accesses the **'Authorization'** header, compares it to the expected API key, and either grants access or sends an error response.

4. Implement a middleware function that logs the timestamp, HTTP method, and requested URL for each incoming request.

   Hint: Create a middleware function that uses '**console.log**' to print the **timestamp**, request method (**req.method**), and requested URL (**req.url**) for each incoming request.

5. Create an Express.js route **'/convert'** that accepts a query parameter **'celsius'** representing a temperature in Celsius.Convert the provided Celsius temperature to Fahrenheit and provide feedback on whether it's a "Freezing," "Cool," "Warm," or "Hot" temperature based on specific thresholds.You should implement error handling middleware to display if you give invalid input for celsius temperature.

   Hint: Use the formula '**(Celsius * 9/5) + 32'** to convert Celsius to Fahrenheit.

6. Create an Express.js route '**/calculate-discount'** that accepts query parameters **'price'** and **'discount'** representing the original price of a product and the discount percentage, respectively. Calculate the discounted price and respond with the discounted amount and the final price.You should implement error handling middleware to display if you give invalid input for original price and the discount.

   Hint: Use the following formula to calculate the discounted price.

   discountedPrice = originalPrice - (originalPrice * (discountPercentage / 100))