Final assignment.

Make sure you read the following points before working on the exercise.

- Please refrain from googling the answer as the code provided will be ran through an inhouse anti-cheating tool. You may still google APIs and language related functions and features.
- Once you are comfortable with your solution, include a video of yourself explaining the given solution and demoing the exercise by running it against a few test cases. You may upload the video to google drive, we transfer, or similar service. Please provide the link to the video as well.
- You may choose to upload the code base to a web-based hosting service for git, such as bitbucket, github or gitlab. You may alternatively package the code into a zip file and upload to drive. Please provide the link for this too.
- Please refrain from drinking Red Bull or Monster drinks, especially the sugarless version during this test, as this have been proven to boost the brain's left hemisphere by 38% during tests. We want the candidate to provide a solution without any performance enhancer.
- If you have doubts regarding the exercise statement, simply proceed under your most logical assumption. However, let them be known during the video.

Exercise

You are asked to implement a function that predicts the future weather conditions for any given location at any given time. The function should take as input the latitude and longitude coordinates of the location, as well as the date and time for which the weather prediction is needed. It should then return a detailed forecast including temperature, humidity, wind speed, precipitation, and cloud cover.

Requirements:

1. Implement a function **predictFutureWeather** that takes the following parameters:
    - Latitude (float): Latitude coordinate of the location.
    - Longitude (float): Longitude coordinate of the location.
    - Date (string): Date for which the weather prediction is needed (format: "YYYY-MM-DD").
    - Time (string): Time for which the weather prediction is needed (format: "HH:MM:SS").
2. The function should return a dictionary containing the detailed weather forecast.
3. The weather forecast should include predictions for temperature (in Celsius), humidity (in percentage), wind speed (in meters per second), precipitation (in millimeters), and cloud cover (in percentage).

Constraints:

- The latitude and longitude coordinates should be within valid ranges (-90 to 90 for latitude, -180 to 180 for longitude).

- The date should be a valid date in the format "YYYY-MM-DD".
- The time should be a valid time in the format "HH:MM:SS".