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Engineering Principles: Research, Design, and Build - Period 7

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Requirements Document for the Sunset and Sunrise Times API

1. **Project Scope**: This system will allow a user to check the sunrise and sunset times of a certain day at the location of their choice. Additionally, they will be able to view times of day, length of the day, moon phases, and celestial events. This application will utilize the API provided by https://sunrise-sunset.org/api.
2. **Functional Objectives**:
    a. *High Priority*
        - System will have access to specific cities/counties.
        - System will allow information beyond sunrise and sunset times to be viewed by the user prompting the system (system of yes or no responses).
        - System will be set in the right time zone to reflect accurate times.
        - System will show time with hours, minutes, and seconds.
            - 24-hour military time system available (system of yes or no responses).
        - System will have a calendar with all the sunrise and sunset times for the given location available.
    b. *Medium Priority*
        - System will have access to all cities/counties.
        - System will sync to the location of the device to show sunrise and sunset times of that specific location without the user having to manually enter any information (approve that system can use the user's location when opening API).
        - System will have a feature that gives possible cities/counties a user might have meant to input if the city/county information is unavailable (because of a misspelling, unknown location).
    c. *Low Priority*
        - System will allow the user to track which sunrises and sunsets they have viewed and at what location.
            - System will have to have users register/login for this feature.
        - System will be accessible on a web browser and on an app.

- System will allow users to view past sunsets pictures submitted by other users.
- System will allow an email to be sent to the user about times and events.

3. **Use Case Descriptions**

Use Case Name	Request sunrise and sunset times using city/county location.
Summary	The user will be able to enter a location as the mode of retrieval at which point a valid location can be entered resulting in the sunrise and sunset times for that location being retrieved and displayed. The user can also select a date and additional information to be retrieved and displayed.
Basic Flow	(1) User enters the API. (2) User is prompted to enter the city they wish to view the sunrise and sunset times for. (3) Application checks if the city entered is a valid input. (4) User is asked (through a series of yes or no questions) information they would like to see. Information options include: (a) Time of day (dawn–twilight–sunrise, morning, daytime, evening, sunset–twilight–dusk, night). (b) Moonrise, moonset, and moon phase. (c) Celestial events (meteor showers, eclipses, oppositions, conjunctions). (5) User is asked if they would like the time system to view the information to be the 24-hour military time system. If user answers no, the information will be presented in 12-hour clock format. (6) Application retrieves data and presents the information to the user.
Alternative Flows	**Step 1**: User is asked to register, login, or continue as a guest. - Having an account allows the user to keep track of the sunrises and sunsets they have viewed and save a collection of photos for a respective sunrise and sunset **Step 2**: User is asked if they want to share current location with the API in order for location information to be directly taken using the device's GPS. **Step 3**: If the location input is invalid, the user is prompted to try another location, change the spelling of the location, or choose the "Did you mean *location*?" prompt. **Step 4**: If the user enters another location, the additional information tools will not be reset unless the user closes the API. Users can navigate the API to view the calendar of sunrise and sunset times, photos submitted by other users, log of sunrises and sunsets they

	personally viewed, and a table of all available information.
Preconditions	The application is running.
Postconditions	The application returns to Step 2.
Business Rules	Location entered is stored in the API and returns a “Did you mean *location* ?” prompt if it is not available.