Code Challenge Overview

This assignment should be a take-home test, and please try to time box this **3 hours or less.** You may or may not finish this - either is ok. If we move forward to final interviews, we'll pair on your solution together, reviewing/troubleshooting/trying new things.
- Testing is required.
- Error handling is required.
- In your readme, please tell us what you would do next if you spent more time on this.
- If a large part of your solution is framework, tell us where we can easily spot the code you've personally added.
- You may use any programming language in your submission.

Requirements

Given the included json file `dataset.json`. Write a program that reads the file and parses the shifts in the file.

Shifts are given the following fields:

Field	Description	Example
ShiftID	Shift ID is a unique numeric identifier for the shift. This is a 64-bit value.	123
EmployeeID	Employee ID is the numeric identifier of the employee who worked the shift. This is a 64-bit value.	456
StartTime	An RFC3339 formatted date time string indicating the start of the shift.	1985-04-12T23:20:50.52Z

EndTime	An RFC3339 formatted date time string indicating the end of the shift. This must be greater than the start time.	1985-04-13T07:19:14.03Z

Note: A week is defined as starting on midnight on Sunday in Central Time, and ends on the following Sunday at midnight.

Using the dataset provided, calculate the following:

- The total number of *regular* hours worked per employee in a given week. Regular hours are the number of hours worked *up to* 40 hours.
- The total number of *overtime* hours worked per employee in a given week. Overtime hours are the number of hours worked beyond 40 hours in a given week.
- If a shift crosses midnight of Sunday, it's calculations should be split between the two weeks.

You should also determine what shifts are "invalid" for a user. Invalid shifts are shifts for a single Employee that overlap with each other. For example; if you have two shifts, one begins at 8am and ends at 4pm and the other begins at 9am and ends at 5pm for the same employee. Both of these shifts would be considered invalid as they overlap.

Invalid shifts should not be included in an employee's totals

Your program should output a json in the following format:

```
[
  {
    "EmployeeID": 456,
    "StartOfWeek": "2021-08-22",
    "RegularHours": 20.56,
    "OvertimeHours": 0,
    "InvalidShifts": [
      123,
      234
    ]
  }
]
```

Field	Description

EmployeeID	The ID of the employee for this particular summary object.
StartOfWeek	The date that this week began on in the following format: "YYYY-MM-DD"
RegularHours	The total number of regular hours for this employee during this week excluding invalid shifts.
OvertimeHours	The total number of overtime hours for this employee during this week excluding invalid shifts.
InvalidShifts	An array of Shift IDs that overlap for this employee during this week.

Bonus

- Your program should be able to properly calculate the regular and overtime hours for a given employee for a week that transitions from CST to CDT or vice versa. Including shifts that cross midnight.

Submission Details

- Please complete this challenge within 2 days (48 hours) of receipt.
- The program should be available in a public GitHub or GitLab account with documentation on how to install and run it. You may also submit via codesandbox. Once completed, please let us know where you have chosen to submit.
- Challenges that use a code generator (ie. Code pilot, ChatGPT) to complete the challenge will not be accepted.

Feel free to reach out to the When I Work team with questions.