

# CSE306 Software Quality in Practice

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# EXP reminders

EXP 1 - due Friday October 11 by 5:00 PM.

No on-going assignment during week of break.

EXP 2 - assigned on October 22.

# ROADMAP

## Tuesday Lecture

- process review
- interactive classroom exercise
  - put process into practice: develop code

## Lab

- individual lab exercise
  - put process into practice: develop code

## Thursday Lecture

- interactive classroom exercise - continued
  - put process into practice: develop code

## Lab

- individual lab exercise
  - put process into practice: develop code

# Things to focus on

Understand requirements

Use code repository

Opaque test first (TDD)

Transparent test implementation using coverage tool (gcov)

# Problem

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Probably not, but why?

We are in different time zones!

Buffalo is in UTC-5 and Uppsala is in UTC+1.

[https://en.wikipedia.org/wiki/Coordinated\\_Universal\\_Time](https://en.wikipedia.org/wiki/Coordinated_Universal_Time)

# Problem

Given two cities, determine the time difference between the two.

Example: What is the time difference between Buffalo and Seattle?

What do you need to know to answer this question?



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Example: What is the time difference between Buffalo and Seattle?

Buffalo is UTC-5.

Seattle is UTC-8. 7:00 PM in Buffalo = 4:00 PM in Seattle.

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# Problem

Given two cities, determine the time difference between the two.

Example: What is the time difference between Buffalo and Phoenix?

Buffalo is UTC-5.

Seattle is UTC-8. 7:00 PM in Buffalo = 4:00 PM in Seattle.

Phoenix is UTC-7. 7:00 PM in Buffalo = ??:?? in Phoenix.

What do you need to know to answer this question?

# Problem

Given two cities, determine the time difference between the two.

Example: What is the time difference between Buffalo and Phoenix?

Buffalo is UTC-5.

Seattle is UTC-8. 7:00 PM in Buffalo = 4:00 PM in Seattle.

Phoenix is UTC-7. 7:00 PM in Buffalo = 4:00 in Phoenix.

What do you need to know to answer this question?

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Example: What is the time difference between Buffalo and Phoenix?

Buffalo is UTC-5.

Seattle is UTC-8. 7:00 PM in Buffalo = 4:00 PM in Seattle.

Phoenix is UTC-7. 7:00 PM in Buffalo = 4:00 in Phoenix.

That's a typo, right?

What do you need to know?

h?

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Example: What is the time difference between Buffalo and Phoenix?

Buffalo is UTC-5.

Seattle is UTC-8. 7:00 PM in Buffalo = 4:00 PM in Seattle.

Phoenix is UTC-7. 7:00 PM in Buffalo = 4:00 in Phoenix.

What do you notice?

Nope. Phoenix does not observe daylight savings time.

# Problem

Getting back to our original question:

My sister lives in Uppsala, Sweden. I want to call to wish her Happy Halloween. I finish dinner at 7:00 PM. Should I call her?

What is the time difference between Buffalo and Uppsala?

Buffalo is UTC-5. Uppsala is UTC+1. Both observe daylight saving time.

If it is 7:00 PM in Buffalo, is it midnight in Uppsala.

What do you need to know to answer this question?

# Problem

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My sister lives in Uppsala, Sweden. I want to call to wish her Happy Halloween. I finish dinner at 7:00 PM. Should I call her?

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That's a typo, right?

What do you need

question?

- Buffalo:

- DST started March 10, 2024

- DST ends November 3, 2024

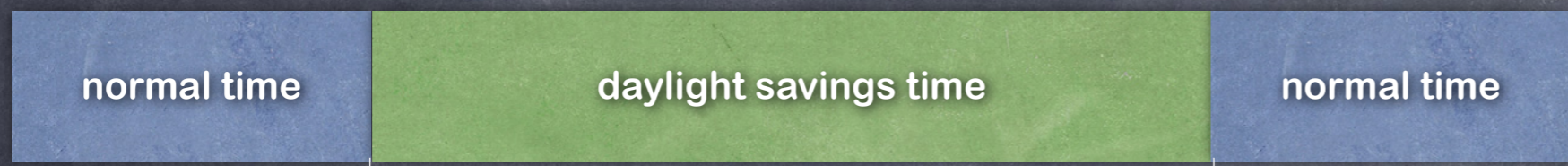
- Uppsala

- DST started March 31, 2024

- DST ends October 27, 2024



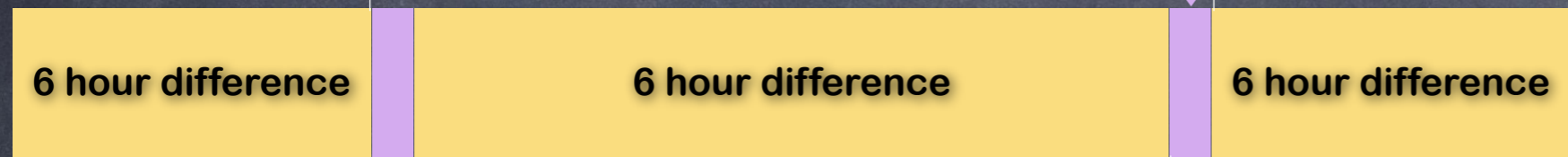
Buffalo



March 10

5 hour difference

November 3



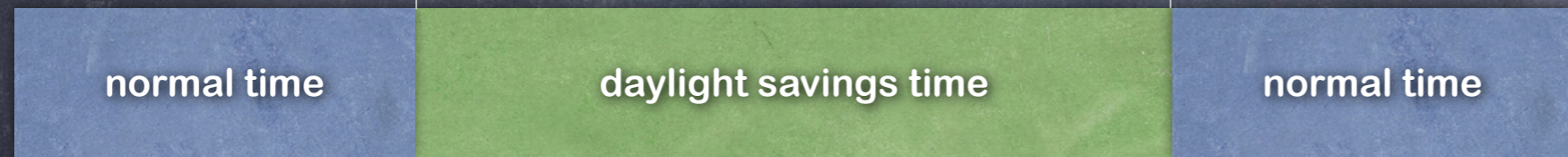
5 hour difference

March 31

October 27

Halloween (October 31)

Uppsala



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What is the time difference between Buffalo and Uppsala?

Buffalo is UTC-5. Uppsala is UTC+1. Both observe daylight saving time.

If it is 7:00 PM in Buffalo, is it midnight in Uppsala.

Switch to daylight time happens on different dates.

What do you need

question?

# Understand requirements

Compute the time difference between two locations A and B on a given date/time at A.

Resources:

<https://www.timeanddate.com/worldclock/sweden/uppsala>

<https://www.worldtimezone.com/daylight.html>

<https://www.worldtimezone.com>

Assume there is a lookup table with the following information for a given location (such as A and B):

timezone offset from UTC

whether daylight saving (summer) time (DST) is observed

start date/time of DST

end date/time of DST

# Use Code Repository

How do we start?

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Accept this assignment (link on schedule page):

[https://classroom.github.com/a/Po6JDe4\\_](https://classroom.github.com/a/Po6JDe4_)

Work in small groups (size 2-4, either those around you or your regular teammates - it doesn't matter).

In local copy, create a new branch to add a 'time' feature, and check out that branch. Merge back to 'main' when you're done.

# Go!

How do we start?

Some work already done in repo so you can hit the ground running.

Apply process, record your process/progress in git.

Let's see what you come up with.