

CSC 249 – P1 Description Document

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Overview of Application

This client-server application can take two verbs/operations, which are *get_days_between* and *add_days*.

1. The *get_days_between* operation calculates and returns the number of dates between two dates that are given with the format and in the format of YYYY-MM-DD. The command takes two nouns/parameters, <date1> and <date2>.
2. The *add_days* operation calculates and returns the date that results from adding a given number of days to a given starting date in the format of YYYY-MM-DD. The command takes two nouns/parameters, <date> and <number of days>.

The server checks for invalid input from the client, which includes invalid operation, invalid date format/value, and invalid number of days.

Client → Server Message Format

1. For the *get_days_between* operation, the client must send a message to the server in 'get_days_between <date1> <date2>' format, where date1 and date2 are in the format of YYYY-MM-DD.
2. For the *add_days* operation, the client must send a message to the server in 'add_days <date> <number of days>' format, where the date is in the format of YYYY-MM-DD and the number of days is an integer.

Server → Client Message Format

1. When the client uses the *get_days_between* operation, the message from the server should be in the following format: "The number of days between <date1> and <date2> is <number of days>."
2. When the client uses the *add_days* operation, the message from the server should be in the following format: "The date after adding <number of days> days to <date> is <resulting date>."
3. When the number of words in the client's message is not 3, the server sends the following message to the client: "Invalid command format. Please use the format: <command> <arg1> <arg2>"
4. When the operation given by the client is invalid, the server sends the following message to the client: "Operation 'wrongCommand' is invalid. Possible operations are: 1. get_days_between; 2. add_days"
5. When the date argument given by the client is not in the format of YYYY-MM-DD, the server sends the following message to the client: "Invalid date format. Please use an existing date and format the date in YYYY-MM-DD."
6. When the number of days argument given by the client is not an integer, the server sends the following message: "Invalid number of days. Number of days should be an integer."

Example Output

1. *get_days_between* operation

Example Input >> *get_days_between* 2000-01-01 2000-02-01

Example Output >> Received reply from server: The number of days between 2000-01-01 and 2000-02-01 is 31 days.

2. *add_days* operation

Example Input >> *add_days* 2000-01-01 20

Example Output >> Received reply from server: The date after adding 20 days to 2000-01-01 is 2000-01-21.

Acknowledgments

The foundational server-client code was adapted from the code provided by Instructor Williams. Additionally, I utilized the Python datetime module for date calculations, referencing the official Python documentation (<https://docs.python.org/3/library/datetime.html>). For handling byte strings (e.g., b" ") and converting them to regular strings using encode and decode methods, I referred to an article from GeeksforGeeks website. (<https://www.geeksforgeeks.org/python-strings-decode-method/>).