REST API for Bitcoin Demo Account Trading

For my final project, I created a REST API that authenticates users with OAuth2 for demo trading Bitcoin accounts. Users' BTC and USD holdings are private without the appropriate OAuth access credentials, as demonstrated in the Postman tests.

This webapp has two entities, **Person** and **Trade**. Trades can be related with people by the "username" property in the Trade entity.

The price of Bitcoin is pulled from **Coindesk's API** (https://www.coindesk.com/api/) and used as the default rate for all trades. (The user can also specify their own trade rate in POST and PUT request bodies, if the Coindesk price isn't desired.)

Postman collection and testing note: I used localhost for testing since the assignment requirements didn't specify needing to deploy the webapp. The OAuth2 client I used, oauth2client, is somewhat buggy with Google App Engine, and I didn't want to run into unnecessary technical issues thru live deployment.

GET /

Gets the main site with sign-in button to retrieve user-specific OAuth token.

(Get yourself two separate tokens with two separate Google accounts if you want to setup the Postman collection variables 'user1' and 'user2' for testing)

People

GET/people
Returns all the "people" associated with a user.

GET/people/{{personID}}
Shows details for single person by ID

POST/people
Creates a new person.

Expected POST body fields:
{"username": "",
"email": "",
"btc_value": "",
"usd_value": ""
}
Username is required.
People's BTC and USD holding amount default to 0.0 unless provided in body at creation.

PUT/people/{{personID}}
Replace data of person by ID

DELETE/people/{{personID}}
Deletes a person and removes their username from any trade(s)

Trades

GET/trades
Returns all trades specific to a user

GET/trades/{{tradeID}}
Returns a specific trade for the user

POST/trades
Creates a new trade. Rate and timestamp default to Coindesk API values unless provided in POST body.

Expected POST body fields:
{"username": "User who made the trade",
"time_stamp": "Time trade was made",
"rate": "Floating-point BTC price in USD at time of trade",
"amount": "Floating-point amount of BTC bought or sold",
"buying": "Boolean that is TRUE if buying BTC with USD; FALSE if selling BTC for USD"
}
Buying defaults to True if not specified by the user, and amount defaults to 0.0

PUT/trades/{{tradeID}}
Replaces trade data. Will timestamp and rate default to live Coindesk data if data isn't provided.

DELETE/trades/{{tradeID}}
Removes a trade.