Number 26 Java Code Challenge

We would like to have a RESTful web service that stores some transactions (in memory is fine) and returns information about those transactions.
The transactions to be stored have a type and an amount. The service should support returning all transactions of a type. Also, transactions can be linked to each other (using a "parent_id") and we need to know the total amount involved for all transactions linked to a particular transaction.

1) Please complete it using Java and in 3 consecutive days.

2) Code does not need to be deployable

3) We prefer that you post code on Github or Bitbucket, so we can review the code.

4) Do not use SQL.

In general we are looking for a good implementation, code quality and how the implementation is tested. Some discussion about asymptotic behaviour would also be appreciated.

In detail the api spec looks like the following:

`PUT /transactionservice/transaction/$transaction_id`

Body:

```
{ "amount":double,"type":string,"parent_id":long }
```

where:

`transaction_id` is a long specifying a new transaction
`amount` is a double specifying the amount
`type` is a string specifying a type of the transaction.
`parent_id` is an optional long that may specify the parent transaction of this transaction.

`GET /transactionservice/transaction/$transaction_id`

Returns:

```
{ "amount":double,"type":string,"parent_id":long }
```

`GET /transactionservice/types/$type`

Returns:

```
[ long, long, .... ]
```

A json list of all transaction ids that share the same type `$type`.
`GET /transactionservice/sum/$transaction_id`

Returns

```
{ "sum", double }
```

A sum of all transactions that are transitively linked by their `parent_id` to `$transaction_id`.

Some simple examples would be:

```
PUT /transactionservice/transaction/10 { "amount": 5000, "type":
"cars" }

=> { "status": "ok" }

PUT /transactionservice/transaction/11
{ "amount": 10000, "type": "shopping", "parent_id": 10 }

=> { "status": "ok" }

GET /transactionservice/types/cars => [10]

GET /transactionservice/sum/10 => {"sum":15000}

GET /transactionservice/sum/11 => {"sum":10000}
```