

Holly Harmon  
CS 419  
Wolford  
OSUID: 932456676

### Assignment 3: Part 2

URL: <http://api-holly.appspot.com/>

#### URL Structure:

/user: Post allows for creation of new User entities. Requires a unique "name" value. Get request will return a list of all of the User entity keys.

/user/<id:[0-9]+>/:?: This resource with a Delete request will delete the indicated User entity along with all of its associated BikeEntry and RunEntry entities listed in bikes and runs.

/bike: Post request allows for BikeEntry entity creation. Must include a user key/id and a date. Get will display the keys for all BikeEntry entities.

/bike/<id:[0-9]+>/:?: Get request will return the information for the BikeEntry entity indicated by the id.

/run: Post request allows for RunEntry entity creation. Must include a user key/id and a date. Get will display the keys for all RunEntry entities.

/run/<id:[0-9]+>/:?: Get request will return the information for the RunEntry entity indicated by the id.

/user/<uid:[0-9]+>/:?>/bike/<bid:[0-9]+>/:?: A Put request will update the indicated bike entry with the provided data and a Delete request will delete the BikeEntry entity and remove reference to it from the User's bikes[] list.

/user/<uid:[0-9]+>/:?>/run/<bid:[0-9]+>/:?: A Put request will update the indicated run entry with the provided data and a Delete request will delete the RunEntry entity and remove reference to it from the User's runs[] list.

#### Schema Changes:

The biggest change I made to my schema was to have all of the bike and run entries entered into lists as properties, instead of having the User entity be a parent of the BikeEntry and RunEntry entities associated with it. This could have still been done, but the list/repeated properties in the User entities that were demonstrated in the lecture seemed like a more

efficient way to implement it. However, does arranging them the way I did mean that the users and their entries are not in their own entity groups?

#### After Finishing:

Now that I've finished the API, the first thing I would fix would be the ability to set "kilos" to False when it's already been set to True. It's an easy, but somewhat important fix. The other glaring omission I realized as I was writing up test calls was that the API allows for updates to BikeEntry and RunEntry entities, but not User entities. Once a User is created it can be deleted, but not edited/updated. I think the overall organization could use a little work as well. I included the PUT and DELETE functions for bike and run entries in the user.py section of the program and am wondering if it would have made more sense to include them in entry.py just to keep the user and entry aspects more separate.

I'm also concerned about the data retrieval efficiency because of the changes I made to the schema listed above. This will be something I'll need to look more into or bring up in class discussion, because I didn't think about entity groups and how they work with lists or how much of a difference that makes to overall speed/functionality.

## Tests & Results:

These are the curl calls I used to test my API. The ones highlighted in red are the only tests that came back with unexpected results. Any URL resources that were unexpected resulted in a 404 error. This isn't so much unexpected as something I took note of. I didn't know what kind of error those calls would give me, but after getting the resulting 404 it makes sense that they would result in that status. I reported or fixed the issues I did find. The only thing I couldn't quite figure out were the PUT calls that resulted in "Error 411 (Length Required)." I'll need to go back and figure out why that error happened and how to fix it or get around it.

**\*\*New User\*\***

```
curl --data "name=NewName" -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: no error
curl --data "name=NewName2&age=30" -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: no error
curl --data "name=NewName" -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: Return with no new user entity
curl --data "name=NewName&age=30" -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: User name already exists
```

**\*\*Display user\*\***

```
curl -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: list all user keys
curl -H "Accept: application/json" http://api-holly.appspot.com/user/known
Expected: user info
curl -H "Accept: application/json" http://api-holly.appspot.com/user/unkown
Expected: User not found error
curl -H "Accept: application/json" http://api-holly.appspot.com/user/nonsense
Expected: no such user or some system error
Result: 404 Not Found
    The resource could not be found.
```

**\*\*Delete User\*\***

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user
Expected: error: need user key/id
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/4878221707313152
Expected: no error
curl -H "Accept: application/json" http://api-holly.appspot.com/4878221707313152
Expected: User not found
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/4878221707313199
```

Expected: Error: User not found

**\*\*Put/update entry - Bike\*\***

**curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known**

Expected: no change to entry

Got: "Error 411 (Length Required)!!1" Not sure what this means...

**curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/unknown**

Expected: no entry error

Got: "Error 411 (Length Required)!!1" Not sure what this means...

**curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/known**

Expected: no user error

Got: "Error 411 (Length Required)!!1" Not sure what this means...

**curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/unknown**

Expected: no user error

Got: "Error 411 (Length Required)!!1" Not sure what this means...

**curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known**

Expected: date changed, no other changes

**curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/unknown**

Expected: no entry error

**curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/known**

Expected: no user error

**curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/unknown**

Expected: no user error

**curl -X PUT --data "bike\_type=newtype" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known**

Expected: bike\_type changed, no other changes

**curl -X PUT --data "distance=5" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known**

Expected: distance changed, no other changes

**curl -X PUT --data "distance=five" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known**

Expected: value error

```
curl -X PUT --data "time=500" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: time changed, no other changes

```
curl -X PUT --data "time=FiveHundred" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: value error

```
curl -X PUT --data "kilos=true" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: kilos changed, no other changes

```
curl -X PUT --data "kilos=blah" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: no changes

```
curl -X PUT --data "level=10" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

expected: level changed, no other changes

```
{"distance": 5, "level": 10, "kilos": true, "bike_type": "newtype", "key": 5169618595348480, "time": 500, "date": "01/01/2015"}
```

```
curl -X PUT --data "level=Ten" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: value error

```
curl -X PUT --data "date=02/02/2020&bike_type=Road&level=10&distance=2&time=20&kilos=false" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: level changed, no other changes

Result: Kilos still equals True. Realized I did not put in code to change kilos from True to False, only to change from default False to True.

```
{"distance": 2, "level": 10, "kilos": true, "bike_type": "Road", "key": 5169618595348480, "time": 20, "date": "02/02/2020"}
```

**\*\*Put/update entry - Run\*\***

```
curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: no change to entry

```
curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/unknown
```

Expected: no entry error

```
curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/known
```

Expected: no user error

```
curl -X PUT -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/unknown
```

Expected: no user error

```
curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: date changed, no other changes

```
curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: no change to entry

```
curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/unknown
```

Expected: no entry error

```
curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/known
```

Expected: no user error

```
curl -X PUT --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/unknown
```

Expected: no user error

```
curl -X PUT --data "path=newpath" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: path changed, no other changes

```
curl -X PUT --data "distance=5" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: distance changed, no other changes

```
curl -X PUT --data "distance=five" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: value error

```
curl -X PUT --data "time=500" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: time changed, no other changes

```
curl -X PUT --data "time=FiveHundred" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: value error

```
curl -X PUT --data "kilos=true" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: kilos changed, no other changes

```
curl -X PUT --data "kilos=blah" -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: no changes

```
curl -X PUT --data "date=02/02/2020&path=Trail&distance=2&time=20&kilos=false" -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: all changes made

Result: Kilos still equals True. Same error as earlier with Bike entries. Did not at code from changing Kilos from True to False, only False to True.

**\*\*Delete entry - Bike\*\***

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/known
```

Expected: no error

```
curl -H "Accept: application/json" http://api-holly.appspot.com/user/known
```

Expected: entry from above no longer in 'bikes'

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/known
```

Expected: no user

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/known/bike/unknown
```

Expected: no entry for user

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/bike/unknown
```

Expected: no user

**\*\*Delete entry - Run\*\***

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/known
```

Expected: no error

```
curl -H "Accept: application/json" http://api-holly.appspot.com/user/known
```

Expected: entry from above no longer in 'runs'

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/known
```

Expected: no user

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/known/run/unknown
```

Expected: no entry for user

```
curl -X DELETE -H "Accept: application/json" http://api-holly.appspot.com/user/unknown/run/unknown
```

Expected: no user

**\*\*New Bike\*\***

```
curl --data "date=01/01/2015&user=known" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: new entry, all blank accept date

```
curl --data "date=01/01/2015&user=unknown" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: User not found error

```
curl --data "date=01/01/2015" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: Invalid request, user id required

```
curl --data "user=known" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: no date error

Got: Debug warning, "BadValueError: Entity has uninitialized properties: date". Forgot return statement after date validation fails in entry.py. Fixed.

```
curl --data "date=01/01/2015&user=known&distance=2" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&distance=Two" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: value error

```
curl --data "date=01/01/2015&user=known&time=20" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&time=Twenty" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: value error

```
curl --data "date=01/01/2015&user=known&bike_type=newtype" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&level=20" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&level=Twenty" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: value error

```
curl --data "date=01/01/2015&user=known&kilos=True" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&kilos=true" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: New entry

```
curl --data "date=01/01/2015&user=known&kilos=blah" -H "Accept: application/json" http://api-holly.appspot.com/bike
```

Expected: kilos = false



```
curl --data "date=01/01/2015&user=known&kilos=True&distance=2&time=20&level=20&bike_type=Road" -H
"Accept: application/json" http://api-holly.appspot.com/bike
Expected: {"distance": 2, "level": 20, "kilos": true, "bike_type": "Road", "key":
4855880898052096, "time": 20, "date": "01/01/2015"}
```

**\*\*Entry info - Bike\*\***

```
curl -H "Accept: application/json" http://api-holly.appspot.com/bike/4855880898052096
Expected: entry info: {"distance": 2, "level": 20, "kilos": true, "bike_type": "Road", "key":
4855880898052096, "time": 20, "date": "01/01/2015"}
curl -H "Accept: application/json" http://api-holly.appspot.com/bike/unknown
Expected: no such entry
curl -H "Accept: application/json" http://api-holly.appspot.com/bike
Expected: all entry keys
curl -H "Accept: application/json" http://api-holly.appspot.com/bike/nonsense
Expected: error
Result: 404 Not Found, The resource could not be found.
```

**\*\*Entry info - Run\*\***

```
curl -H "Accept: application/json" http://api-holly.appspot.com/run/known
Expected: entry info: {"distance": 2, "kilos": true, "key": 5649050225344512, "time": 20, "date":
"01/01/2015", "path": "Trail"}
curl -H "Accept: application/json" http://api-holly.appspot.com/run/unknown
Expected: no such entry
curl -H "Accept: application/json" http://api-holly.appspot.com/run
Expected: all entry keys
curl -H "Accept: application/json" http://api-holly.appspot.com/run/nonsense
Expected: error
Result: 404 Not Found, The resource could not be found.
```

--END--