Feature Overview:

- This feature is intended to integrate weight measurements that are taken by BodyTrace (BT) weigh scales into LYS (https://www.bodytrace.com/)
- Each BT weigh scale unit has a unique IMEI code that must be pre-registered with LYS in order for weight measurements from that unit to be automatically sent to LYS.
- Each time a user of a BT weigh scale weighs himself, the weigh scale automatically sends the weight measurement to the BT server to be stored.
- If the IMEI for a new weight measurement received by the BT server matches one on the list of IMEIs that BT knows are registered with LYS, that weight measurement is automatically pushed by the BT server to LYS as an https POST request sent to the following urls:
    - (test LYS server): https://68.71.46.81/~lysteps/act_files/act_bodyTrace_JSON_decode.php
    - (live LYS server): https://www.logyoursteps.ca/act_files/act_bodyTrace_JSON_decode.php
    - Documented in "BodyTrace BT004 API" pdf file
- LYS needs to receive this weight measurement and save it into the LYS DB (details below)
- Some changes to the exported .csv report and to the LYS UI may also be needed (details below)
- You'll need to test this feature using Postman by sending simulated POST messages with the JSON format defined below to the above decode url on the LYS test server (since I have the only BodyTrace weigh scale unit that can be used for non-simulated testing). Once you're satisfied that everything is working fine using Postman data, I can test using the real weight scale

Incoming message format:

- Messages from BT will have the following JSON format:

```
{
   "imei": "864507037593357",
   "ts": 1538412911320,
   "batteryVoltage": 5954,
   "signalStrength": 33,
   "values": {
      "unit": 1,
      "tare": 0,
      "weight": 79700
   },
   "rssi": 98,
   "deviceId": 86450703759335
}, …
```

  This JSON structure is potentially repeated multiple times within each POST message received from BT depending on how many separate weight measurements are being sent to LYS as part of the current data push from BT (ie. there could be several weight measurements with different timestamps "ts" or with different IMEI values "imei")
- Parameters that will need to be parsed are:
    - "imei": the unique IMEI code for the BT weigh scale unit sending this data
    - "ts": the unix timestamp formatted date/time that this measurement was recorded by the BT weight scale.
    - "values"/"weight": this is the measured weight, always in grams.
    - "values"/"tare": this is the weight in grams measured by the scale when nobody is standing on it ("should" always be zero but can't be guaranteed)
    - Values associated with all other names in the above JSON block can be ignored

DB changes:

- Incoming weight measurement data will be stored into the existing tbl_health_data_log, which will need the following added field:
    - New: add strIMEI field as a string of 15 characters
- Create a new tbl_join_users_BT_IMEI table with the following fields:
    - intJoinID: auto-incremented table index
    - intUserID: the LYS userid from tbl_users/intUserID that is assigned a BT weigh scale with the following IMEI
    - strIMEI: the 15-character IMEI code

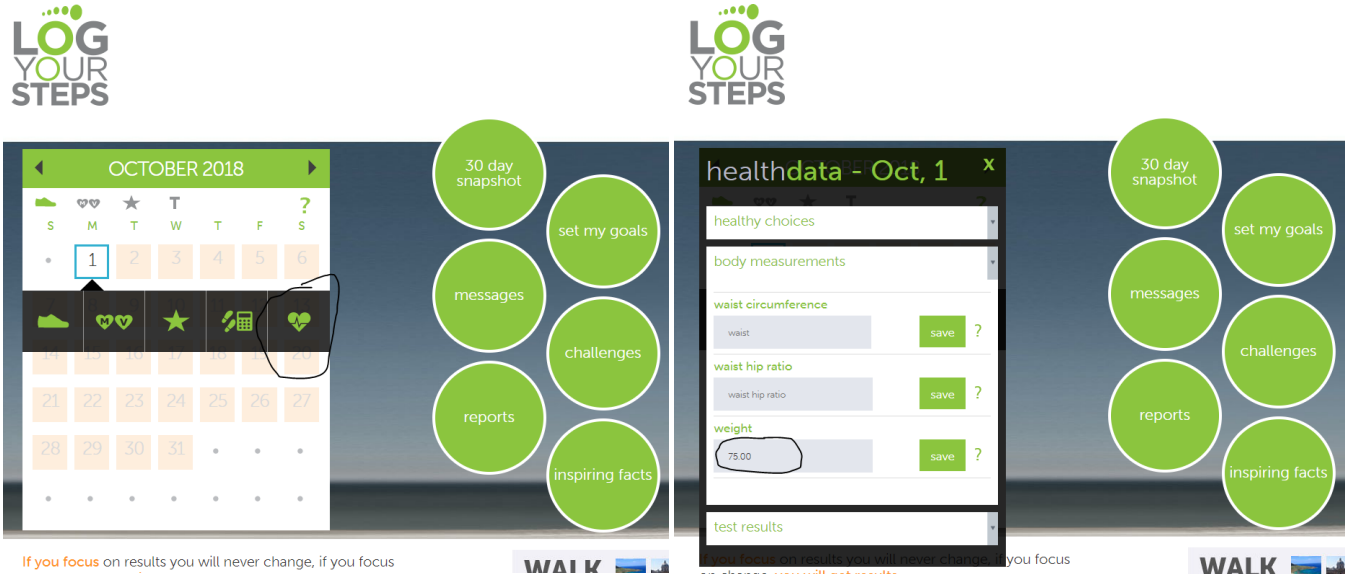
  This table will need to be datafilled by a LYS system administrator which is outside the scope of this feature.
  For feature testing using Postman you should add 1 entry to tbl_join_users_BT_IMEI where intUserID=14419 and strIMEI=864507037593357

act_bodyTrace_JSON_decode.php flow:

- Accept the incoming POST from BT
- Loop over all received JSON blocks:
    - If the value of “imei” is in tbl_join_users_BT_IMEI, then save data in this JSON block into tbl_health_data_log:
        - dtHDL_dateEntered field: this is just the current datetime when this data is being stored into the db
        - intHealthDataID field: always save the integer 4
        - intUserID field: should be assigned the value taken from tbl_join_users_BT_IMEI/intUserID where tbl_join_users_BT_IMEI/strIMEI matches the value of “imei” received in the POST message
        - “imei”: save this value as string into new tbl_health_data_log/strIMEI field
        - “ts”: convert this value to datetime format and save into tbl_health_data_log/dtHDL_dateOfRecord field
        - Within “values” in this JSON block, calculate ((“weight” minus “tare”) divided by 1,000) and save the result into the tbl_health_data_log/intHDL_value field
- No response needs to be sent back to BT

Calendar interface:

- Please double check that the weight value displayed in the image below shows the correct weight taken from tbl_health_data_log for this user / the selected date, formatted as xx.yy. Note: there could be multiple weight measurements on any given date, taken at different times throughout the day. The “correct” weight that should be displayed in this window is the most recent value on the selected date (ie. the last measurement stored in the table for that date).



Exported csv reports:

- Please also double-check that the same “correct” weight value showing in the calendar is exported to the personal csv report for user 14419 (tbl_users/intUserId=14419) and to the csv report that can be exported by the admin user (tbl_users/intUserId=14340) for the client that user 14419 is linked to.