

In Test.py file, there is a sample of json object with length of 10 accelerometer data. This data is the input of 'call_model' function. In this function, json object is converted to a dataframe, the time gap and time duplication have been checked firstly. If there is a time gap more than two minutes, the function returns two strings (('There is a time gap more than 2 minutes ...') , ('Drop...')).

After checking the constraints, the dataframe is chunked into 10 samples. For each chunk, the main function is called, in which the activity type is determined and also if there is a fall has been detected, it returns the falls timestamps, otherwise the 'No fall' will be returned.

The call model function returns two lists. One of them determines the activity types and the other one is for fall events.

Like this:

```
['Sit', 'Sit', 'Sit']  
[['No Fall'], ['No Fall'], ['No Fall']]
```

If fall events are detected, instead of 'No Fall', it returns their timestamps.

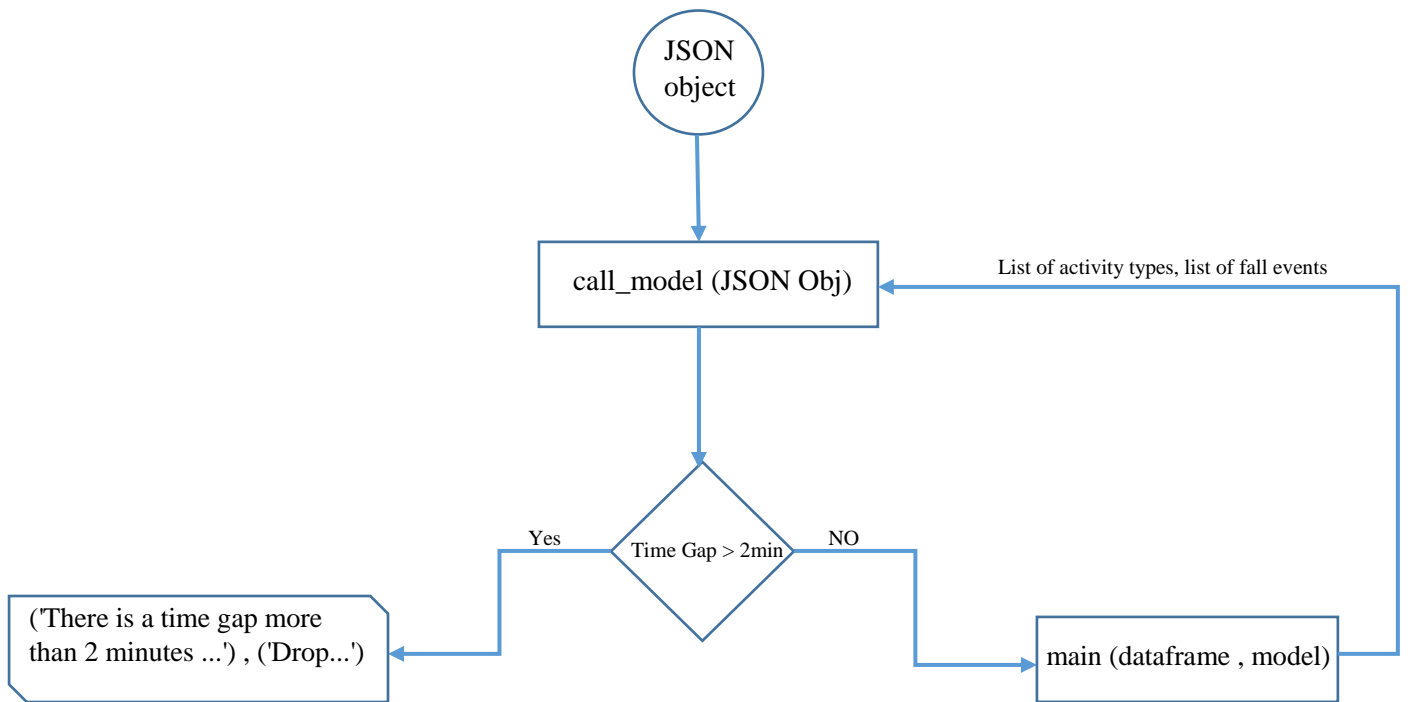
Also, if there is a time gap between the accelerometer data, it returns two strings as follows:

```
There is a time gap more than 2 minutes ...  
Drop...
```

Finally, there are a table and a flowchart to illustrate the functionalities.

* In HAR_Fall.py file (line 15), change the path of the 'HAR_CNN_10s.h5' file into proper directory.

Function name	Input values	Return values
call_model (in Test.py file)	Json object	Two lists (activity name, time stamps of fall event)
main (in HAR_Fall.py)	Dataframe , saved model(.h5 file)	Two lists (activity name, time stamps of fall event)



Example1 (Test.py):

Import the .py file as a module:

```
from HAR_Fall import call_model
```

Input data:

[illegible]

Call the function:

```
activity , fall = call_model(data)
print(activity)
print(fall)
```

Output:

```
['Walk']
[['16:35:00']]
```

Example2:

If the data has a time gap more than 2 minutes.

```
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:35:00\\'}\\'\\',  
, -102, 14], \\'_id\\': \\'6052e4dc605f500004ef6d3f\\', \\'app_date\\': \\'29/09/2021 16:39:00\\'}\\'\\',
```

The output:

```
to enable them in other operations, rebuild tensorflow with the appropriate compiler flags.
```

	data	_id	app_date	Gap
0	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
1	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
2	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
3	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
4	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
5	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
6	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
7	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	0.0
8	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:35:00	240.0
9	[61, 69, -1, 41, 0, -89, 0, 71, -1, 40, 0, -88...	6052e4dc605f500004ef6d3f	2021-09-29 16:39:00	NaN

There is a time gap more than 2 minutes ...
Drop...