Comparison of Fitbit and Garmin fitness trackers

1. Compare the frameworks offered by Fitbit and Garmin.
   * Which one of these would offer real-time streaming of sensor data?
   * Do the frameworks allow third-party authentication?
   * Are any of the frameworks/SDKs language-specific? If yes, what languages?
2. Compare the sensors and features available

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|  | Fitbit | Garmin |
| Realtime streaming of sensor data | No inbuilt solution exists as far as I’m aware. Data is synced with Fitbit servers every 15 minutes which is then available to view/download.  I’ve seen suggestions of using web sockets inside the sensor event listeners might do the trick to provide real time sensor data, but this hasn’t been documented well.  See this repo and video which might be helpful:  <https://github.com/billy1234/sensor-stream>  <https://www.youtube.com/watch?v=mtEyjWk91mU> | Yes, with Garmin Health Companion SDK. However, it costs money for a license to access this SDK and you will need to consult with Garmin to get access |
| 3rd party authentication | There is a python library which exists which allows you to authenticate yourself and download or query your available Fitbit data. A limit of 150 requests per hour limit applies, however.  <https://github.com/orcasgit/python-fitbit>  See the below tutorial for an example of the library being used:  <https://towardsdatascience.com/using-the-fitbit-web-api-with-python-f29f119621ea> | There is also another python library which allows you to request the device, activity, and health data from your Garmin Connect account.  <https://github.com/cyberjunky/python-garminconnect>  If you know the dates of when the activities occur, you can use [this tutorial](https://www.youtube.com/watch?v=PZJVXCAWuzs) instead to get the .FIT files directly off the device and then use the [FIT CSV Tool](https://developer.garmin.com/fit/fitcsvtool/) from Garmin to convert it into a CSV file |
| Programming languages | JavaScript, CSS, SVG | Monkey C:  <https://developer.garmin.com/connect-iq/monkey-c/> |
| Sensors available | * Accelerometer * Barometer * Gyroscope * Heart Rate * Orientation * Temperature * Ambient Light | * Accelerometer * Altitude * Cadence * Heading * Hear Rate * Magnetometer * Oxygen Saturation * Power * Pressure * Temperature |

References:

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* <https://developer.garmin.com/connect-iq/core-topics/sensors/>
* <https://dev.fitbit.com/build/guides/sensors/>
* <https://developer.garmin.com/health-sdk/overview/>
* <https://community.fitbit.com/t5/Web-API-Development/Too-many-request/td-p/1644362>