

Biomedical Wearable Technologies for Healthcare and Wellbeing

IMPACT

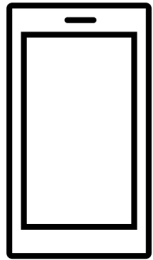
A.Y. 2023-2024

Giacomo Cappon



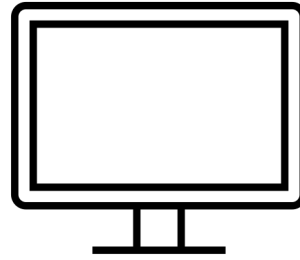


- IMPACT (Integrated Mobile Platform for Automated Clinical Trial) is a platform for the conduction of clinical trials aimed at collecting data and assess new treatments.
- IMPACT is composed of 3 main components:



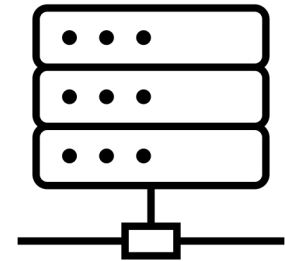
Mobile app

For patients, acquires data automatically from multiple wearable devices



Web interface

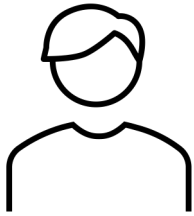
For clinicians, enables remote patient monitoring and to perform adjustments to trial-related settings



Backend

Exposes ad-hoc RESTful APIs to store and transfer data to a cloud server

The IMPACT roles



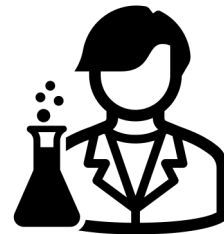
Patient

Generates and manages its data



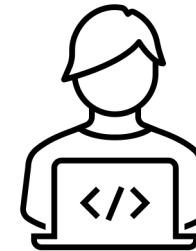
Clinician

Enrolls patients, reviews data of patients in its clinical center, edits clinical study settings



Researcher

Accesses all data in read-only mode



Superuser/Study Administrator/Data Administrator

They have God-like powers

The researcher role

- Each group will have access to the data using the researcher role



```
{  
  "username": "<YOUR_USERNAME>",  
  "access_expiration_date": "<YOUR_ACCESS_EXPIRATION_DATE>"  
}
```

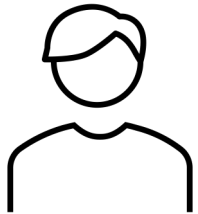
- Each researcher in IMPACT is characterized by a username and an access expiration date.
- The access expiration date defines the date until a specific researcher is allowed to access data stored in the IMPACT database. Two examples:

```
{  
  "username": "nmRTl0v7W8",  
  "access_expiration_date": "2024-09-30"  
}
```

```
{  
  "username": "nmRTl0v7W8",  
  "access_expiration_date": null  
}
```

The scenario

- Data are generated during an on-going single-arm single-center clinical trial involving healthy subjects wearing Fitbit smartwatches. The study involves:



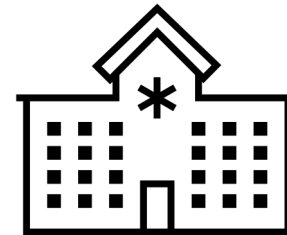
```
{  
  "username": "Jpefaq6m58",  
  "birth_year": 1994,  
  "display_name": "Luca",  
  "clinical_center": 1,  
  "to_be_deleted": false  
}
```



```
{  
  "username": "tP27LUo0ng",  
  "display_name": "Giacomo",  
  "clinical_center_id": 1  
}
```



```
{  
  "username": "<YOUR_USERNAME>",  
  "access_expiration_date": "<YOUR_ACCESS_EXPIRATION_DATE>"  
}
```



```
{  
  "id": 1,  
  "display_name": "Padova"  
}
```

The IMPACT backend

