

qiSDK: Frames

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- Frame object is a 6D location associated to an object or a person.
- Moves over time, for example when a person moves.
- System-provided Frames
- Possibility to define custom Frames

qiSDK: Frames

- Benefits for user:
 - Consistent way of representing locations.
 - Use system-provided frames as much as possible.
 - No need to multiply or inverse transforms!

qiSDK: System-provided Frames

`Actuation.robotFrame` # the robot location

`Actuation.gazeFrame` # the robot gaze

`TouchSensor.frame` # a sensor location

`Mapping.mapFrame` # the origin of the current map, if any

`Human.headFrame` # location of a human head

qiSDK: Look at a Human

```
human = HumanAwareness.humansAround.value()[0]

head_frame = human.headFrame.value()

look_at = Actuation.makeLookAt(context, head_frame)

fut = look_at.run(_async=True)

# tracking human

fut.cancel()
```

qiSDK: Computing transforms

```
tf = robot_frame.computeTransform(map_frame)
```

qiSDK advanced: Building custom Frames

```
# Make a new frame, attached to its parent frame
attached_frame = Frame.makeAttachedFrame(tf)

# Make a new frame, free to be placed anywhere
free_frame = Mapping.makeFreeFrame()
```

qiSDK: Going back to a custom Frame

```
free_frame = Mapping.makeFreeFrame()  
  
free_frame.update(robot_frame, tf, qi.clockNow())  
  
# move the robot around  
  
go_to = Actuation.makeGoTo(context, free_frame.frame())  
  
go_to.run()
```


qiSDK: Looking at a custom Frame

```
attached = frame.makeAttachedFrame(tf)

look_at = Actuation.makeLookAt(context, attached.frame())

look_at.run()
```