# QA Report of satellite.py

May 19, 2018
Code written by: Anant Joshi
QA performed by: Riya
Changes made:
_ In init instead of direct equating time, used setTime()
_ In setQ instead of [0:3], used [0:4] (as required by python)
_ Deleted getQi as it was not needed.
_ Instead of single get/set Mag, I declared get/set Mag p and Mag c because for b dot controller we need the derivative of magnetic field and so we need both current and previous magnetic fields.
_ Declared getW because a function setW was declared.

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**QA Requested by**: Riya Singh
**Date**: 20/09/2018
**Reviewer**: Ravit Anand
**Permanent links**: https://github.com/Student-Satellite-IITB/Advitiy-Control-Model/blob/f8d44f7ddac4695a63a2a30302147a8288ea18e8/satellite.py

**QA suggestions:**

1. Line 37, the function *setQ* sets the exact quaternion from body frame to inertial frame. Thus, the name of the function should reflect that i.e. name of the function could be *setQ_BI*. Also, change the comments accordingly to *"set exact quaternion from body frame to inertial frame".*
2. Line 44,47 Change the comments to explain which quaternion you are referring to.
3. Line 47 the variable name v_w doesn't look appropriate for quaternion, perhaps it should be v_q.
4. Line 51 the variable name v_q doesn't look appropriate for angular velocity, perhaps it should be v_w. Also, change the comments accordingly to "*set exact angular velocity of body with respect to orbit expressed in body frame*".
5. Line 55 Change comments accordingly.
6. Line 129 Add comments *"get exact angular velocity of body frame with respect to inertial frame expressed in body frame"*
7. Line 132 Add comments describing the function *fs.wBOb2wBIb* and notifying that v_w_IO_o will be imported from constants file.

**Implementation:**

1. Suggestion 1 – QBI means quaternion from inertial frame to body frame

2. All other suggestions have been implemented.