1. Linear and Angular velocities of the tool are computed according to the following equations:

A paper with writing on it

Description automatically generated

After implementation using MATLab, the results are as follows:

, with respect to frame {T}

, with respect to frame {0}

2. Jacobians matrix is computed according to the following equation:

A notebook with writing on it

Description automatically generated

After implementation using MATLab, the results are as follows:

3. Velocity inverse kinematics is computed according to the following equation:

A white lined paper with black lines

Description automatically generated

After implementation using MATLab, the results are as follows: