**Graphs**

Graph 1

A close up of a map

Description automatically generated

Graph 2

A close up of a map

Description automatically generated

Graph 3

A close up of a map

Description automatically generated

Graph 4

A close up of a map

Description automatically generated

**Animation observations**

1. Linear interpolations tend to be abrupt as seen in the above graphs.
2. Both Euler interpolations have abrupt and unnatural rotations as seen in the videos (00.35s - 00.45s).
3. But Bezier Euler is better that Linear Euler as the curves are smoother.
4. Quaternion interpolations tend to be better than their Euler counterparts. They don't have abrupt rotations and are closer to the input motions.
5. Bezier Quaternion is the best interpolation when compared with the input motion.

**Computation time comparison (Extra Credit)**

* For 135\_06-martialArts.amc and N=40, I compared the computation times for each interpolation as below:
  + Linear Euler: 0.022668s
  + Linear Quaternion: 0.138459s
  + Bezier Euler: 0.109906s
  + Bezier Quaternion: 0.331571s
* Quaternion interpolation are more expensive than their Linear counterparts. With Bezier Quaternions having the highest computational time.

**Conclusion**

1. Linear interpolations are quicker in computation but results in abrupt rotations which are unnatural and undesirable.
2. Quaternions are the better option when it comes to rotations and provide much smoother interpolations. Bezier Quaternions are expensive computationally but provide the closest result to the input motion.