**Design and implementation of a new lightweight chaos-based cryptosystem to secure IoT communications.**

Roll: 1807021 Date: 10/09/2023

**Recap:** Previously I read about the stable and unstable fixed points.

**My Work:** This week I’m learning more about chaos theory in online courses.

* Stable points are called attractors and unstable points are called repellers.
* All focus will be on stable fixed points.
* Another form of equations exist that are called logistic equations. This is a simple model of population growth, an iterated function.

r is growth factor. For r>1, population will become infinity, for r=1 population will not change and for 0<r<1 population will decrease.

* Population can become infinity which is to be handled in this eqution.
* Modifying above equation we get,

Here A = Annihilation population.

If P<<A, then f(p) = rP

* By dividing both side with A and simplifying we get,

This is standard form of the equation which is a parabola.

**Future Plan:** Study more details about the mathematics and mechanisms of chaos theory.