**Methodology**

Implementing SDR representation in MAUI application is developed using .NET CORE 8.0 in Microsoft Visual studio 2022 and uses packages like OxyPlot.Core, SkiaSharp to generate the plot in MAUI application.

Microsoft's .NET MAUI (Multi-platform App UI) is a contemporary cross-platform framework that enables developers to build native mobile and desktop applications. It is an advanced version of Xamarin.Forms, offering a simplified and consolidated approach to building applications that can run seamlessly on various platforms such as Android, iOS, macOS, and Windows.

Hierarchical Temporal Memory (HTM)

In Hierarchical Temporal Memory (HTM), Sparse Distributed Representation (SDR) is used to represent data. SDRs are binary vectors with many dimensions, with each dimension corresponding to a specific feature or property of the input data. Only a small fraction of dimensions are active (set to 1) in any given SDR, while the rest are inactive (set to 0). This sparse activation property enables SDRs to encode complex patterns while maintaining low-dimensional representations efficiently.

Active Sparse Distributed Representation (SDR)

An active SDR is a specific instance of an SDR in which a subset of its dimensions is set to 1, and the remaining dimensions are set to 0. The activation pattern of an SDR represents the presence or absence of certain features or properties in the input data. The active dimensions in an SDR indicate which features or properties are currently present or relevant in the input.

Plotting Activity Method: