Assignment 2

Write a Library for Small World Graphs

A *graph* is a set of nodes and edges between the nodes. A *path* between two nodes is an sequence of connected edges in the graph. The *length* of a path is the number of edges in the path.

The **distance** between two nodes is the **length of the shortest path between the nodes**.

The **diameter** of a graph is the **maximum distance between any two nodes**.

A graph is **small(x)** if **mean distance between any two nodes is less that x times the number of nodes**.

You must write an Ada library that defines a Graph Type, and contains functions for:

1. **distance** between tow nodes,
2. **diameter** of a graph and
3. **small(x)** a predicate over graphs, with parameter x of type fixed, that returns true if and only if the graph is small(x).

You need to submit:

Working Generic code this will be marked:

1. **30**% executable functions
2. **10**% Package structure + use of generics
3. **10**% Flow and Depends
4. **20**% Contracts (Pre,Post, ..) + proof
5. **10**% Testing (Proven code counts as tested)
6. **5**% Use of libraries

Report covering:

1. **5**% brief documentation of your library
2. **5**% justification for the quality of your code
3. **5**% know weakness of you code