LABORATORY 1

We’ll work with 3 dictionaries:

Din :=

Keys = integers, corresponding to vertexes

Value = list of integers, of predecesors ( corresponding to income edges)

Dout :=

Keys = integers, corresponding to vertexes

Value = list of integers, of succesors

Dcosts :=

Keys = pair, corresponding to and edge

Value = float, corresponding to the cost of travel between x to y

**Operations:**

Read the nr of vertexes, then the nr of edges:

* We then generate in Din and Dout the nr of edges and assign them an empty list
* This operation is called \*add a vertex\*
* We will always perform it when we add a vertex; initially we add them as an isolated one.
* We have to check if the vertex does not exist when we add a new one, so therefor we perform an operation called is\_vertex to check if that vertex exists; if it does not exist we add them as an isolated one to the Din and Dout as an isolated vertex
* Add\_vertex(v) and is\_vertex(v)
* Then we continue reading the next line representing the edges.
* Add\_edge(u,v) – we add it only if it does not exist so far
* We check
  + U and v must be vertexes
  + Then we check if U is a predecessor to v
  + We check if v is a successor to U
  + If the vertexes exist and U isn’t a predecessor and v isn’t a successor then we add to the list at key U in Dout v and to the list at key V in Din U
  + We also add the tuple u,v with the cost in Dcost