

ESc101 Laboratory Assignment

Thursday of Week of 13/09/04

September 14, 2004

1 Shortest Path

1.1 Problem

The floor plan of the first floor of an office building is shown in the figure. The circles denote the offices and line segments represent the hallway (passage). Distance between adjacent offices is one unit.

Design a program which takes two office numbers and determines the shortest distance between them.

In order to find the shortest distance, first find whether the two offices are in the same wing or in different wings. In the latter case break the problem into three parts: finding the distance from the first office to the corner office at the exit/entry point of the wing, distance to the the exit/entry point of the wing of the second office, distance to the second office.

Observe that symmetry in the numbering scheme can simplify this problem enormously.

NOTE: DO NOT USE LOOPS, ARRAYS, VECTORS.

