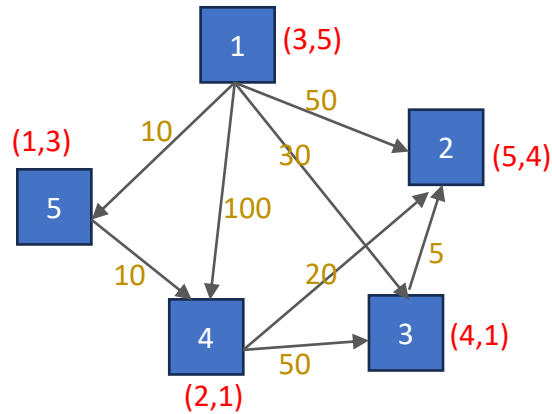


Example of the Output of A3

- Here is just an example used to show the format of the output of A3.
- Consider the following graph, the (x,y) coordinates of each vertex is labelled as pair of integers in red. The weight of each edge is shown in yellow.
- The starting point considered in the vertex 1 and the goal vertex is vertex 2.



Assume we use `lecturesample.txt` to store the data of graph, which is given below:

```
5      8
1      3      5
2      5      4
3      4      1
4      2      1
5      1      3
1      5      10
1      2      50
1      4      100
1      3      30
5      4      10
4      3      50
3      2      5
4      2      20
1      2
```

You could copy the above lines and store it in a txt file locally to test your program.

Then the output of the program should be

Please Enter the Filename: lecturesample.txt

=====

The number of vertexes in the graph: 5

The number of edges in the graph: 8

The start vertexes: 1

[The end vertexes: 2

=====

The Euclidean distance between the start and the goal vertexes: 2.23607

Shortest path: 1 -> 3 -> 2

The length of the shortest path: 35

Longest path: 1 -> 4 -> 3 -> 2

The length of the longest path: 155

=====