**APG3013F Assignment 1**

Assigned on: March 2017

Dr Sithole

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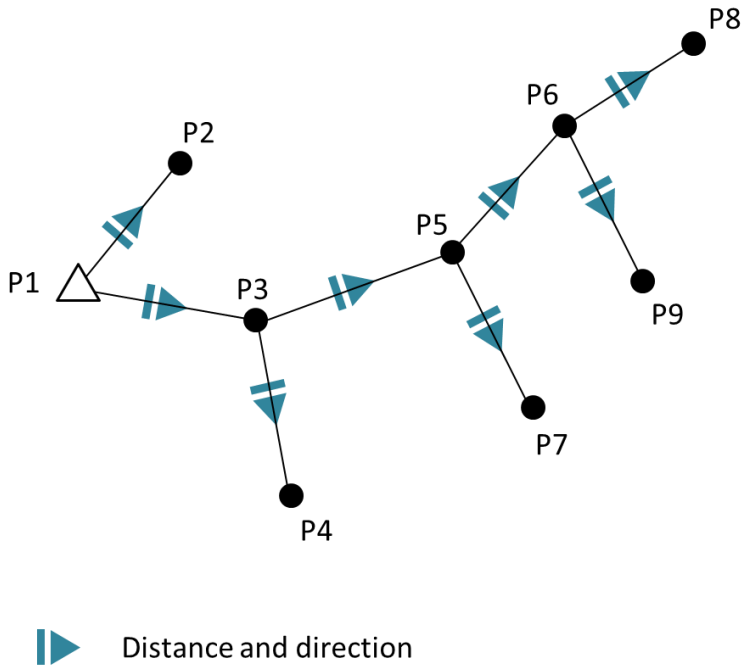


Figure 1 Sequential polars

Shown in figure 1 is a sample sequence of polars starting at known point P1.

1. Simulate data to represent a sequence of polars. The precision of the distances and direction observations are to be treated as known, i.e. you can assign them yourself.
2. Compute the coordinates of points P2, P3, P4, etc..
3. Generate a covariance matrix for the observations. Assume that the observations are uncorrelated
4. Write a program that will determine the covariance matrix of the points P2, P3, P4, etc.,
5. Compute and plot the error ellipse for each point

You are to submit a report containing:

1. An explanation of how you determined the covariance matrix of P2, P3, P4, etc.,
2. A presentation and analysis of the results from your program.
3. Your python code

Submissions: Zip all your files and place them in your vula drop box. The zip file should be named Assignment1_FirstName_Surname.zip