**DAILY ASSESSMENT FORMAT**

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| **Date:** | **16-07-2020** | **Name:** | **Bhavith** |
| **Course:** | **Coursera** | **USN:** | **4AL17EC009** |
| **Topic:** | **Changing the reference frame** | **Semester & Section:** | **6th,A** |
| **Github Repository:** | **Bhavith-Online-Courses** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session**  **Screenshot (200)**  **Screenshot (201)** |
| **Report – Report can be typed or hand written for up to two pages.**   * **For example, say I have a bunch of 2D data points like this. Say they all, more or less, lie on a straight line. We can we can see that, these guys all more or less lie on a line that's going to be something like that. I could imagine rediscovering that data by mapping them onto that line and then saying how far they're along that line. So I can map this guy down onto the line and I could say the origin maps down there and I could then say this data point is that far along the line.** * **So he's that fall on the line and he's this far away from the line. So I've got two dimensions here.  How far I am along the line and how far I am from the line.** * **These guys they're all slightly different distances from the line. As a little bit of an argument in stats as to whether we do the distance that way vertically or that way as a projection for the distance from the line. But it's a theoretical argument, but notice that this distance from the line is effectively a measure of how noisy this data cloud is. If they are all tight on the line they'd all be very small distances** * **away and if they were all quite spread they'd be quite big distances away. So this distance from the line this is effect of the noise and that's information that isn't very useful to us. So we might want to collapse it.** * **Except that that noise dimension tells me how good this line fit is.** * **If the best fit line was all skewed, was all wrong I'd get a much bigger numbers for the noisiness, and if the best fit line was as good as possible I get the minimum possible number for the noisiness.** * **So that noise dimension contains information that's going to tell me how good my fit is. So when I'm doing data science it tells me how good my fit to my data is. The way I've defined** * **these two directions along the line and away from the line, they are orthogonal to each other.** |