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| **Assignment Scientific Decision Making** | |
| **Part One: Set Up the Hypothesis Test** | |
| **Question:** | We were already using an existing technology and it was performing at an expected level. But, there were some challenges in the existing technology. The technology vendor was coming up with a new technology which was informed by vendor that it would solve the challenges. Now for me, I had to compare both technologies and answer that both perform the same or there is some deviation in performance related to each other. |
| Ho: | Both old and new technology have similar performance. |
| Ha: | Existing technology performance is superior to new technology. |
| Test Statistic | Mean1 -Mean2-Null/Standard Error |
| Error Mitigation | |  | | --- | | **Error Mitigation** | | **Error Type** | **Downside / risk of this error** | **Current parameters** | | Type I (false positive) | *Ho is that we have similar performance. Ha is that existing technology has superior performance. Risk is that we may conclude that existing technology has superior performance when both performance is same.* | (record your *alpha* here)  α = 0.05 | | Type II (false negative) | *Ho is that we have similar performance. Ha is that existing technology has superior performance. Risk is that even though we have superior performance we may conclude both are same* | Generating performancsamples equally for both the environments | |
| End of Part One | |
| Part Two – Test, Analyze and Conclude | |
| Ho: | Mu1-Mu2 = 0 |
| Ha: | Mu1-Mu2 > 0 |
| p-Value Calculated | 3.394E-06 |
| Were you able to reject the null? | Yes |
| What conclusion can you draw about the original question? | Existing technology performance is better than new technology |
| What unexpected information, if any, did hypothesis testing reveal about your original question? | None |