Republic of the Philippines

**MARIKINA POLYTECHNIC COLLEGE**

Sta. Elena, Marikina City

Final Output

**ENGINEERING DATA ANALYSIS**

2nd Semester, A.Y. 2022 – 2023

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**HYPOTHESIS   
  
For Data 1**

* There is no significant difference on post and pretest scores of the ECE students who uses the upgraded instructional material. *(t-test)*\* Hypothesis unknown”  
   *There is no significant difference on post and pretest scores of the ECE students who uses the upgraded instructional material*  
  \* Hypothesis alternative”  
  *There are some significant similarities on post and pretest scores of the ECE students who uses the upgraded instructional material*  
    
  We used ***n= 75*** for the passing grades need to meet

|  |  |  |
| --- | --- | --- |
| **Student No.** | **Pretest Score** | **Posttest Score** |
| 1 | 80 | 95 |
| 2 | 87 | 90 |
| 3 | 84 | 86 |
| 4 | 86 | 87 |
| 5 | 88 | 92 |
| 6 | 85 | 90 |
| 7 | 85 | 94 |
| 8 | 89 | 90 |
| 9 | 90 | 86 |
| 10 | 83 | 87 |
| 11 | 81 | 95 |
| 12 | 83 | 87 |
| 13 | 80 | 95 |
| 14 | 80 | 93 |
| 15 | 89 | 88 |
| 16 | 85 | 95 |
| 17 | 81 | 87 |
| 18 | 80 | 93 |
| 19 | 82 | 86 |
| 20 | 84 | 94 |
| 21 | 82 | 92 |
| 22 | 84 | 94 |
| 23 | 82 | 95 |
| 24 | 87 | 87 |
| 25 | 85 | 86 |

|  |  |  |  |
| --- | --- | --- | --- |
| **t-Test: Two-Sample Assuming Unequal Variances** | | | |
|  | |  |  |
|  | | *80* | *95* |
| Mean | | 84.25 | 90.375 |
| Variance | | 8.978261 | 12.33152 |
| Observations | | 24 | 24 |
| Hypothesized Mean Difference | | 75 |  |
| df | | 45 |  |
| t Stat | | -86.0936 |  |
| P(T<=t) one-tail | | 6.88E-52 |  |
| t Critical one-tail | | 1.679427 |  |
| P(T<=t) two-tail | | 1.38E-51 |  |
| t Critical two-tail | | 2.014103 |  |
|  | |  |  |
|  |

**SUMMARY FOR DATA 1**We analyze the problem and given sample by our Professor in discord, after that we began to watch the video given by our professor, after a few minutes we began to communicate to each other how to answer this data, after that that we began to lunch the Ex-ell and download the data analysis, we used the two-sample assuming unequal variances , after a couple of seconds we got the answer , but before we lunch the Excel we first write it in paper and compute ourselves, even some are wrong we still got a few right answer.

**HYPOTHESIS   
  
  
For Data 2**

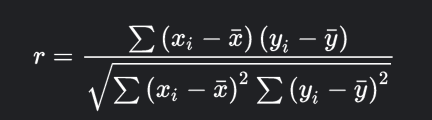
* There is no significant difference on growth of the mongo (*Mangifera indica*) with 0%, 25% and 50% volume of Filipino cultural sounds. *(ANOVA)***\* Hypothesis unknown”**  
   *There is no significant difference on growth of the mongo (Mangifera indica) with 0%, 25% and 50% volume of Filipino cultural sounds*\* **Hypothesis alternative”**There are some significant similarities on growth of the mongo (*Mangifera indica*) with 0%, 25% and 50% volume of Filipino cultural sounds

|  |  |  |
| --- | --- | --- |
| **Height (in INCHES)** | **Height (in INCHES)** | **Height (in INCHES)** |
| 10 | 9 | 10 |
| 9 | 8 | 10 |
| 9 | 6 | 10 |
| 6 | 10 | 12 |
| 9 | 8 | 10 |
| 8 | 8 | 9 |
| 6 | 9 | 9 |
| 7 | 7 | 9 |
| 10 | 9 | 10 |
| 10 | 6 | 12 |
| 9 | 6 | 12 |
| 7 | 9 | 12 |
| 5 | 7 | 11 |
| 9 | 6 | 9 |
| 10 | 10 | 10 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Anova: Single Factor** | |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **SUMMARY** | |  |  |  |  |  |
| ***Groups*** | ***Count*** | ***Sum*** | ***Average*** | ***Variance*** |  |  |
| **10** | **14** | **114** | **8.142857143** | **2.747252747** |  |  |
| **9** | **14** | **109** | **7.785714286** | **2.181318681** |  |  |
| **10** | **14** | **145** | **10.35714286** | **1.478021978** |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **ANOVA** |  |  |  |  |  |  |
| ***Source of Variation*** | ***SS*** | ***df*** | ***MS*** | ***F*** | *P-value* | *F crit* |
| **Between Groups** | **54.33333333** | **2** | **27.16666667** | **12.7212693** | 5.58333E-05 | 3.238096 |
| **Within Groups** | **83.28571429** | **39** | **2.135531136** |  |  |  |
|  |  |  |  |  |  |  |
| **Total** | **137.6190476** | **41** |  |  |  |  |
|  |  |  |  |  |  |  |
| **data 2** | |  |  |  |  |  |

**SUMMARY OF DATA 2**After we got the answer on data 1 we began to complete the data 2 , we analyze how to got the right Anova , We began to watch the video link given by our Professor, after a couple of minutes we began to lunch the Ex-el and try to use data analysis and began to click the range and choose the Anova-Single factor , second passes , we got the answer given by data analysis tool

**HYPOTHESIS   
  
For Data 3**

* *What is the level of correlation coefficient of the night sleeping span of a person and the number of hours he/she is exposed to their personal computer. (Correlation)***SUMMARY OF DATA 3**Me and my groupmate began to watch the last video link and slowly listen to our Professor lecturing how to and what are we going to do to have the right answer using the formula of correlation, After the video we began to write the given and the x,y,xy etc.. after that we used the formula   
  after that we began to compute, and we got the right answer , final we began to try the correlation in data analysis tool and we got the same answer.  
   **CORRELATION**  
    
    
    
  The **CORREL** and **PEARSON** worksheet functions both calculate the correlation coefficient between two measurement variables when measurements on each variable are observed for each of N subjects. (Any missing observation for any subject causes that subject to be ignored in the analysis.) The Correlation analysis tool is particularly useful when there are more than two measurement variables for each of N subjects. It provides an output table, a correlation matrix, that shows the value of **CORREL** (or **PEARSON**) applied to each possible pair of measurement variables.

The correlation coefficient, like the covariance, is a measure of the extent to which two measurement variables "vary together." Unlike the covariance, the correlation coefficient is scaled so that its value is independent of the units in which the two measurement variables are expressed. (For example, if the two measurement variables are weight and height, the value of the correlation coefficient is unchanged if weight is converted from pounds to kilograms.) The value of any correlation coefficient must be between -1 and +1 inclusive.

*https://support.microsoft.com/en-us/office/use-the-analysis-toolpak-to-perform-complex-data-analysis-6c67ccf0-f4a9-487c-8dec-bdb5a2cefab6?ns=excel&version=21&syslcid=1033&uilcid=1033&appver=zxl210&helpid=xladdin.chm1780&ui=en-us&rs=en-us&ad=us*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **n= 8** |  |  |  |
| x | y |  |  |  |
| Night Sleeping Span Time | No. of hrs exposed to personal computer | xy | x^2 | y^2 |
| 10 | 4 | 40 | 100 | 16 |
| 10 | 1 | 10 | 100 | 1 |
| 6 | 4 | 24 | 36 | 16 |
| 9 | 2 | 18 | 81 | 4 |
| 7 | 4 | 28 | 49 | 16 |
| 6 | 3 | 18 | 36 | 9 |
| 8 | 6 | 48 | 64 | 36 |
| 4 | 4 | 16 | 16 | 16 |
| 10 | 4 | 40 | 100 | 16 |
| 5 | 1 | 5 | 25 | 1 |
| 4 | 3 | 12 | 16 | 9 |
| 4 | 2 | 8 | 16 | 4 |
| 9 | 8 | 72 | 81 | 64 |
| 7 | 6 | 42 | 49 | 36 |
| 7 | 4 | 28 | 49 | 16 |
| 4 | 6 | 24 | 16 | 36 |
| 10 | 1 | 10 | 100 | 1 |
| 10 | 6 | 60 | 100 | 36 |
| 4 | 7 | 28 | 16 | 49 |
| 4 | 6 | 24 | 16 | 36 |
| 5 | 4 | 20 | 25 | 16 |
| 9 | 6 | 54 | 81 | 36 |
| 5 | 5 | 25 | 25 | 25 |
| 7 | 3 | 21 | 49 | 9 |
| 8 | 1 | 8 | 64 | 1 |
| 5 | 1 | 5 | 25 | 1 |
| 9 | 1 | 9 | 81 | 1 |
| 7 | 8 | 56 | 49 | 64 |
| 5 | 5 | 25 | 25 | 25 |
| 8 | 2 | 16 | 64 | 4 |
| 10 | 5 | 50 | 100 | 25 |
| 9 | 2 | 18 | 81 | 4 |
| 4 | 4 | 16 | 16 | 16 |
| 7 | 1 | 7 | 49 | 1 |
| 4 | 1 | 4 | 16 | 1 |
| 9 | 1 | 9 | 81 | 1 |
| 7 | 2 | 14 | 49 | 4 |
| 8 | 3 | 24 | 64 | 9 |
| 4 | 6 | 24 | 16 | 36 |
| 6 | 3 | 18 | 36 | 9 |
| 8 | 4 | 32 | 64 | 16 |
| 9 | 5 | 45 | 81 | 25 |
| 5 | 5 | 25 | 25 | 25 |
| 10 | 2 | 20 | 100 | 4 |
| 4 | 1 | 4 | 16 | 1 |
| 10 | 6 | 60 | 100 | 36 |
| 6 | 5 | 30 | 36 | 25 |
| 9 | 2 | 18 | 81 | 4 |
| 8 | 4 | 32 | 64 | 16 |
| 4 | 6 | 24 | 16 | 36 |
| 347 | 186 | 1268 | 2645 | 894 |

|  |  |  |
| --- | --- | --- |
|  | *10* | *4* |
| 10 | 1 |  |
| 4 | -0.110679654 | 1 |

**PHOTOS OF US DOING OUR FINAL OUTPUTS**