UNIVERSIDAD CÉSAR VALLEJO

**EVALUACIÓN ESTADÍSTICA DEL
PESO Y TAMAÑO DE
HUEVOS EN UNA GRANJA
AVÍCOLA**

ESTADÍSTICA APLICADA-AIT1

DOCENTE:

**OBREGÓN
DOMINGUEZ JESÚS**

INTEGRANTES:

Abanto Alvarez, Sarai Indira

Bardales Bautista, Noelia Lizbet

Gallo Senmache, Natalia

Rojas Abanto, Jenifer Lizeth

Guillermo Ramirez, Tracy

INTRODUCCIÓN:

EN ESTE INFORME, SE PRESENTA UN ESTUDIO QUE TIENE COMO OBJETIVO EVALUAR EL PORCENTAJE DE ÉXITO EN LA PUESTA DE HUEVOS Y EN LA TOMA DE DATOS LA CALIDAD DE LOS HUEVOS EN UNA GRANJA AVÍCOLA. LA EVALUACIÓN SE CENTRARA EN LA PRIMERA ETAPA EN LA PUESTA DE HUEVOS, Y SE CONTINUARÁ CON EL PESO Y EL TAMAÑO DE LOS HUEVOS, Y SE HA REALIZADO UTILIZANDO UN MUESTREO ALEATORIO SIMPLE, EL ESTUDIO SE APLICARÁ EN VARIOS GALPONES DE LA GRANJA.

UNIVERSIDAD CÉSAR VALLEJO

3 GALPONES

UNIVERSIDAD CÉSAR VALLEJO

FORMA DE LOS GALPONES

UNIVERSIDAD CÉSAR VALLEJO

DISTRIBUCIÓN

GALPÓN 02

INGRESO

LÍNEA 1 - PRIMER NIVEL

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LÍNEA 4 - PRIMER NIVEL

781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
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LÍNEA 5 - PRIMER NIVEL

961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020
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LÍNEA 7 - PRIMER NIVEL

1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060
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LÍNEA 1 - SEGUNDO NIVEL

121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
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LÍNEA 2 - SEGUNDO NIVEL

361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
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LÍNEA 3 - SEGUNDO NIVEL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
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LÍNEA 4 - SEGUNDO NIVEL

841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900
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LÍNEA 7 - SEGUNDO NIVEL

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DISTRIBUCIÓN GALPÓN 03

INGRESO																																																																																																																									
M I V E L 1	LÍNEA 1-PRIMER NIVEL <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td><td>101</td><td>102</td><td>103</td><td>104</td><td>105</td><td>106</td><td>107</td><td>108</td><td>109</td><td>110</td><td>111</td><td>112</td><td>113</td><td>114</td><td>115</td><td>116</td><td>117</td><td>118</td><td>119</td><td>120</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
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	LÍNEA 2-PRIMER NIVEL <table border="1"> <tr><td>241</td><td>242</td><td>243</td><td>244</td><td>245</td><td>246</td><td>247</td><td>248</td><td>249</td><td>250</td><td>251</td><td>252</td><td>253</td><td>254</td><td>255</td><td>256</td><td>257</td><td>258</td><td>259</td><td>260</td><td>261</td><td>262</td><td>263</td><td>264</td><td>265</td><td>266</td><td>267</td><td>268</td><td>269</td><td>270</td><td>271</td><td>272</td><td>273</td><td>274</td><td>275</td><td>276</td><td>277</td><td>278</td><td>279</td><td>280</td><td>281</td><td>282</td><td>283</td><td>284</td><td>285</td><td>286</td><td>287</td><td>288</td><td>289</td><td>290</td><td>291</td><td>292</td><td>293</td><td>294</td><td>295</td><td>296</td><td>297</td><td>298</td><td>299</td><td>300</td></tr> <tr><td>301</td><td>302</td><td>303</td><td>304</td><td>305</td><td>306</td><td>307</td><td>308</td><td>309</td><td>310</td><td>311</td><td>312</td><td>313</td><td>314</td><td>315</td><td>316</td><td>317</td><td>318</td><td>319</td><td>320</td><td>321</td><td>322</td><td>323</td><td>324</td><td>325</td><td>326</td><td>327</td><td>328</td><td>329</td><td>330</td><td>331</td><td>332</td><td>333</td><td>334</td><td>335</td><td>336</td><td>337</td><td>338</td><td>339</td><td>340</td><td>341</td><td>342</td><td>343</td><td>344</td><td>345</td><td>346</td><td>347</td><td>348</td><td>349</td><td>350</td><td>351</td><td>352</td><td>353</td><td>354</td><td>355</td><td>356</td><td>357</td><td>358</td><td>359</td><td>360</td></tr> </table>	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
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LÍNEA 3-PRIMER NIVEL <table border="1"> <tr><td>401</td><td>402</td><td>403</td><td>404</td><td>405</td><td>406</td><td>407</td><td>408</td><td>409</td><td>410</td><td>411</td><td>412</td><td>413</td><td>414</td><td>415</td><td>416</td><td>417</td><td>418</td><td>419</td><td>420</td><td>421</td><td>422</td><td>423</td><td>424</td><td>425</td><td>426</td><td>427</td><td>428</td><td>429</td><td>430</td><td>431</td><td>432</td><td>433</td><td>434</td><td>435</td><td>436</td><td>437</td><td>438</td><td>439</td><td>440</td><td>441</td><td>442</td><td>443</td><td>444</td><td>445</td><td>446</td><td>447</td><td>448</td><td>449</td><td>450</td><td>451</td><td>452</td><td>453</td><td>454</td><td>455</td><td>456</td><td>457</td><td>458</td><td>459</td><td>460</td></tr> <tr><td>461</td><td>462</td><td>463</td><td>464</td><td>465</td><td>466</td><td>467</td><td>468</td><td>469</td><td>470</td><td>471</td><td>472</td><td>473</td><td>474</td><td>475</td><td>476</td><td>477</td><td>478</td><td>479</td><td>480</td><td>481</td><td>482</td><td>483</td><td>484</td><td>485</td><td>486</td><td>487</td><td>488</td><td>489</td><td>490</td><td>491</td><td>492</td><td>493</td><td>494</td><td>495</td><td>496</td><td>497</td><td>498</td><td>499</td><td>500</td><td>501</td><td>502</td><td>503</td><td>504</td><td>505</td><td>506</td><td>507</td><td>508</td><td>509</td><td>510</td><td>511</td><td>512</td><td>513</td><td>514</td><td>515</td><td>516</td><td>517</td><td>518</td><td>519</td><td>520</td></tr> </table>	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	
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1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814

UNIVERSIDAD CÉSAR VALLEJO

GRUPO 3

GRANJA AVICOLA "CAQUI"

GRANJA AVICOLA "CAQUI"

RESUMEN DE CANTIDADES				
Nº DE GALPONES	Nº DE LINEAS	Nº MODULOS	Nº JAULAS	Nº DE GALLINAS
3	16	224	3584	17920

GALPON 1					
1	Nº MODULOS POR LINEA	Nº JAULAS POR MODULO	Nº GALLINAS POR JAULA	Nº GALLINAS POR LINEA	
LINEA	1	15	16	5	1200
	2	15	16	5	1200
	3	7	16	5	560
TOTAL	37	592	2960	2960	

GALPON 2					
2	Nº MODULOS POR LINEA	Nº JAULAS POR MODULO	Nº GALLINAS POR JAULA	Nº GALLINAS POR LINEA	
LINEA	1	15	16	5	1200
	2	15	16	5	1200
	3	15	16	5	1200
	4	15	16	5	1200
	5	15	16	5	1200
	6	15	16	5	1200
	7	10	16	5	800
TOTAL	100	1600	8000	8000	

GALPON 3					
3	Nº MODULOS POR LINEA	Nº JAULAS POR MODULO	Nº GALLINAS POR JAULA	Nº GALLINAS POR LINEA	
LINEA	1	15	16	5	1200
	2	15	16	5	1200
	3	15	16	5	1200
	4	15	16	5	1200
	5	15	16	5	1200
	6	12	16	5	960
TOTAL	87	1392	6960	6960

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PRUEBA PILOTO

Durante la prueba piloto, estaremos recopilando datos de una muestra reducida de jaulas para evaluar la eficacia de nuestra metodología de recolección de datos. Queremos asegurarnos de que nuestros procedimientos sean precisos y eficientes, y esta fase piloto nos proporcionará información valiosa para lograrlo.

PRUEBA PILOTO:

UNIDADES DE	3584	Jaulas
% PRUEBA PILOTO	3%	0.03
N° DE MUESTRAS PARA PRUEBA PILOTO	108	Jaulas

PRUEBA PILOTO					
MARCA TEMPORAL	UNIDAD DE MUESTREO	N° DE GALLINAS	N° HUEVOS	PROPORCIO N	PORCENTAJE
Chepen, 08:07	1	5	3	3/5	60%
Chepen, 08:08	2	5	4	4/5	80%
Chepen, 08:09	3	5	5	1	100%
Chepen, 08:10	4	5	4	4/5	80%
Chepen, 08:11	5	5	4	4/5	80%
Chepen, 08:12	6	5	3	3/5	60%
Chepen, 08:13	7	5	1	1/5	20%
Chepen, 08:14	8	5	3	3/5	60%
Chepen, 08:15	9	5	3	3/5	60%
Chepen, 08:16	10	5	2	2/5	40%
Chepen, 08:17	11	5	1	1/5	20%
Chepen, 08:18	12	5	3	3/5	60%
Chepen, 08:19	13	5	3	3/5	60%
Chepen, 08:20	14	5	4	4/5	80%
Chepen, 08:21	15	5	3	3/5	60%
Chepen, 08:22	16	5	2	2/5	40%
Chepen, 08:23	17	5	3	3/5	60%
Chepen, 08:24	18	5	3	3/5	60%
Chepen, 08:25	19	5	4	4/5	80%
Chepen, 08:26	20	5	3	3/5	60%
Chepen, 08:27	21	5	3	3/5	60%
Chepen, 08:28	22	5	2	2/5	40%

La prueba piloto, una etapa crucial de nuestro estudio de evaluación de puesta de huevos en la granja avícola, se llevó a cabo con éxito para afinar nuestra metodología y determinar el tamaño de muestra óptimo necesario para el estudio completo.

EL OBJETIVO PRINCIPAL

El objetivo principal de esta fase era garantizar que nuestros procedimientos fueran precisos y eficientes antes de avanzar con la evaluación completa.

UNIVERSIDAD CÉSAR VALLEJO

TAMAÑO DE LA MUESTRA

VARIABLE	Cuantitativa
POBLACIÓN	Finita
UNIDAD DE MUESTRA	Jaula de gallinas
UNIDAD DE ANALISIS	Gallinas

N	POBLACION		3584
Z	NIVEL DE CONFIANZA	97%	2.17009038
E	ERROR	4%	0.04
P	% EXITO	67%	0.66851852
Q	% FRACASO	33%	0.33148148
S^2	DESVIACION ESTANDAR		0.92483148

NIVEL DE CONFIANZA		NIVEL DE SIGNIFICANCIA	Z
%	DECIMAL		
90%	0.9	0.1	1.644853627
91%	0.91	0.09	1.69539771
92%	0.92	0.08	1.750686071
93%	0.93	0.07	1.811910673
94%	0.94	0.06	1.880793608
95%	0.95	0.05	1.959963985
96%	0.96	0.04	2.053748911
97%	0.97	0.03	2.170090378
98%	0.98	0.02	2.326347874
99%	0.99	0.01	2.575829304

$$n = \frac{Z^2 S^2 N}{E^2 (N - 1) + Z^2 S^2}$$

FÓRMULA

n	1478.995962
---	-------------

MUESTREO ALEATORIO SIMPLE

TAMAÑO DE MUESTRA

El tamaño de muestra óptimo se establece en 1479, y este valor se basa en una combinación de factores, incluyendo el nivel de confianza requerida y considerando un porcentaje de error bajo, también las variabilidades observadas en la prueba piloto. Este número nos proporcionará una base sólida para evaluar la calidad de nuestros huevos en la granja avícola de manera confiable.

TOMA DE DATOS

COMO EQUIPO, NUESTRA LABOR EN LA TOMA DE DATOS IMPLICA RECOLECTAR INFORMACIÓN PRECISA SOBRE EL LARGO, ANCHO Y PESO DE LOS HUEVOS. ESTA RECOPILOACIÓN METICULOSA NOS PERMITE OBTENER DATOS PRECISOS Y RELEVANTES PARA NUESTRO ANÁLISIS Y TRABAJO CONJUNTO.

MATERIALES:

Balanza Gramera

Palitos de Chupete

Cinta Metrica

MODO DE MEDICIÓN:

DATA

STATISTICS

Importación de librerías

```
[1] import pandas as pd
```

Importación de datos

```
[2] data =pd.read_csv('/content/drive/MyDrive/ESTADISTICA-2023-II/ANALISIS DE DATA.csv', sep=';')
```

```
[3] from google.colab import drive  
drive.mount('/content/drive')
```

Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).

```
[4] data.head()
```

	LARGO	ANCHO	PESO_g
0	6.160	4.800	65.060
1	5.825	4.575	82.275
2	6.600	4.767	79.700
3	5.850	4.800	61.500
4	6.250	5.050	68.800

```
[5] data.tail()
```

	LARGO	ANCHO	PESO_g
1024	6.350	5.150	86.800
1025	5.300	4.600	80.600
1026	5.633	5.267	82.800
1027	6.225	5.400	75.125
1028	5.900	5.533	81.000

```
[6] data.info()
```

VISUALIZACION DE DATOS

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 1029 entries, 0 to 1028  
Data columns (total 3 columns):  
#   Column   Non-Null Count  Dtype  
---  ---      -  
0   LARGO    1029 non-null   float64  
1   ANCHO    1029 non-null   float64  
2   PESO_g   1029 non-null   float64  
dtypes: float64(3)  
memory usage: 24.2 KB
```

```
[7] import matplotlib.pyplot as plt
```

```
[8] data['PESO_g'].plot.box();  
plt.show()
```

```
[8] data['PESO_g'].plot.box();  
plt.show()
```

```
[9] data['LARGO'].plot.box();  
plt.show()
```

```
[10] data['ANCHO'].plot.box();  
plt.show()
```

```
[11] data['PESO_g'].plot.hist(color = 'orange', alpha = 0.6,  
                             rwidth=0.95,  
                             bins = 25);  
  
plt.show()
```

```
[12] import seaborn as sns
```

```
[13] from scipy import stats
```

```
[14] sns.set_style('ticks')
```

```
[15] sns.distplot(data['PESO_g'],  
                 fit= stats.norm,  
                 bins = 30,  
                 color= 'yellow',  
                 kde = False)
```

Bivariado

```
[ ] data.info()
```

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 1029 entries, 0 to 1028  
Data columns (total 3 columns):  
#   Column   Non-Null Count  Dtype    
---  ---      -  
0    LARGO    1029 non-null   float64  
1    ANCHO    1029 non-null   float64  
2    PESO_g   1029 non-null   float64  
dtypes: float64(3)  
memory usage: 24.2 KB
```

```
[ ] sns.jointplot(x = data['PESO_g'],  
                 y = data ['LARGO'])
```

```
[ ] g = sns.jointplot(x = data['PESO_g'],  
                    y = data ['LARGO'])  
sns.regplot(x = "PESO_g",  
            y = "LARGO",  
            data = data,  
            scatter = False, color = 'red',  
            ax= g.ax_joint)  
  
<Axes: xlabel='PESO_g', ylabel='LARGO'>
```

```
[ ] g = sns.jointplot(x = data['PESO_g'],  
                    y = data ['ANCHO'])  
sns.regplot(x = "PESO_g",  
            y = "ANCHO",  
            data = data,  
            scatter = False, color = 'red',  
            ax= g.ax_joint)  
  
<Axes: xlabel='PESO_g', ylabel='ANCHO'>
```

```
[ ] g = sns.jointplot(x = 'PESO_g',  
                    y = 'LARGO',  
                    data = data,  
                    kind = 'hex',  
                    cmap = 'hot')
```

```
[ ] g = sns.jointplot(x = 'PESO_g',  
                    y = 'ANCHO',  
                    data = data,  
                    kind = 'hex',  
                    cmap = 'hot')
```

```
[ ] g = sns.jointplot(x = 'PESO_g',  
                    y = 'ANCHO',  
                    data = data,  
                    kind = 'hex',  
                    cmap = 'hot')  
  
sns.regplot(x = "PESO_g",  
            y = "ANCHO",  
            data = data,  
            scatter = False, color = 'yellow',  
            ax= g.ax_joint)
```

<Axes: xlabel='PESO_g', ylabel='ANCHO'>

```
[ ] sns.set_theme(style = 'white')
g = sns.JointGrid(data = data,
                 x = 'PESO_g',
                 y = 'LARGO',
                 space = 0)
g.plot_joint(sns.kdeplot,
            fill = True,
            clip = ((30,130),(4,8)),
            thresh = 0,
            levels = 100,
            cmap = 'rocket')
g.plot_marginals(sns.histplot,
                color = '#03051A',
                alpha = 1,
                bins = 25)

<seaborn.axisgrid.JointGrid at 0x7e7ded8209d0>
```

```
[ ] sns.set_theme(style = 'white')
g = sns.JointGrid(data = data,
                 x = 'PESO_g',
                 y = 'ANCHO',
                 space = 0)
g.plot_joint(sns.kdeplot,
             fill = True,
             clip = ((30,130),(2,8)),
             thresh = 0,
             levels = 100,
             cmap = 'rocket')
g.plot_marginals(sns.histplot,
                 color = '#03051A',
                 alpha = 1,
                 bins = 25)

<seaborn.axisgrid.JointGrid at 0x7e7ded5eb790>
```

Correlacion

```
[ ] data.describe()
```

	LARGO	ANCHO	PESO_g
count	1029.000000	1029.000000	1029.000000
mean	6.215879	5.093720	72.494371
std	0.465681	0.448427	12.674910
min	4.500000	2.150000	34.800000
25%	5.933000	4.800000	64.300000
50%	6.220000	5.080000	73.100000
75%	6.500000	5.360000	80.860000
max	7.900000	7.720000	132.600000

```
[ ] import seaborn as sns
```

```
[ ] sns.set_theme(style = 'ticks')  
sns.pairplot(data, diag_kind='hist',  
            height=3,corner= True)
```

```
<seaborn.axisgrid.PairGrid at 0x7e7deced1c30>
```

```
<seaborn.axisgrid.PairGrid at 0x7e7deced1c30>
```

```
[ ] sns.jointplot(x = data['PESO_g'],  
                y = data['ANCHO'],  
                kind = 'hex',  
                color = '#d783fc')  
  
<seaborn.axisgrid.JointGrid at 0x7e7dece2f910>
```

```
[ ] sns.jointplot(x = data['PESO_g'],  
                 y = data[ 'LARGO'],  
                 kind = 'hex',  
                 color = '#d703fc')
```

```
<seaborn.axisgrid.JointGrid at 0x7e7dec6eada0>
```

```
[ ] import scipy as sp
```

```
[ ] import pylab as py
```

```
[ ] from scipy import stats
```

Evaluamos Normalidad

```
[ ] stats.probplot(data['PESO_g'],  
                  dist= 'norm',  
                  plot = py)  
  
py.show()
```

```
[ ] stats.probplot(data['ANCHO'],  
                  dist= 'norm',  
                  plot = py)  
  
py.show()
```

```
[ ] stats.probplot(data['LARGO'],  
                  dist= 'norm',  
                  plot = py)  
  
((array([-3.20582232, -2.94124055, -2.7936335 , ..., 2.7936335 ,  
         2.94124055, 3.20582232]),  
 array([4.5, 4.9, 5. , ..., 7.6, 7.7, 7.9])),  
 (0.4655571876671511, 6.2158785228377065, 0.997509680117907))
```

Prueba de evaluación de normalidad de Kolgomorov_Smirnov($n > 100$)

```
[ ] stats.kstest(data['PESO_g'],  
                stats.norm.cdf)
```

```
KstestResult(statistic=1.0, pvalue=0.0, statistic_location=34.8, statistic_sign=-1)
```

Prueba de correlacion de Pearson

```
[ ] res = sp.stats.pearsonr(data['ANCHO'],  
                             data['LARGO'])
```

```
[ ] res
```

```
PearsonRResult(statistic=0.31277681358322124, pvalue=8.66470931591048e-25)
```

Intervalo de confianza

```
[ ] import pandas as pd  
import numpy as np  
import seaborn as sns
```

```
[ ] data = pd.read_csv('/content/drive/MyDrive/ESTADISTICA-2023-II/ANALISIS DE DATA.csv',';')
```

```
<ipython-input-42-2827385825ed>:1: FutureWarning: In a future version of pandas all arguments of read_csv except for the argument 'filepath_or_buffer' will be keyword-only.  
data = pd.read_csv('/content/drive/MyDrive/ESTADISTICA-2023-II/ANALISIS DE DATA.csv',';')
```

```
[ ] data.head()
```

```
[ ]
```

	LARGO	ANCHO	PESO_g
0	6.160	4.800	65.060
1	5.825	4.575	82.275
2	6.600	4.767	79.700
3	5.850	4.800	61.500
4	6.250	5.050	68.800

```
[ ] import scipy.stats as st
```

Crear confidente interval

```
[ ] st.norm.interval(0.95,  
                    loc = np.mean(data['LARGO']),  
                    scale = st.sem(data['LARGO']))
```

```
(6.187425469018776, 6.244331576656637)
```

```
[ ] data.describe()
```

```
]

```

	LARGO	ANCHO	PESO_g
count	1029.000000	1029.000000	1029.000000
mean	6.215879	5.093720	72.494371
std	0.465681	0.448427	12.674910
min	4.500000	2.150000	34.800000
25%	5.933000	4.800000	64.300000
50%	6.220000	5.080000	73.100000
75%	6.500000	5.360000	80.860000
max	7.900000	7.720000	132.600000

Prueba t.student para la media

```
import matplotlib.pyplot as plt
```

```
[ ] sns.distplot(data['LARGO'],  
                 fit = st.norm,  
                 bins = 5,  
                 color = 'orange',  
                 kde = False)  
  
plt.show()
```

Prueba t para la media (hipotetica)

```
[ ] import numpy as np  
    from scipy import stats
```

```
[ ] mu = 0.90
```

```
[ ] t_stat, p_value = stats.ttest_1samp(data['LARGO'],  
                                       mu,  
                                       alternative='greater')
```

```
[ ] p_value
```

```
0.0
```

```
[ ] t_stat
```

```
366.1796908428861
```

Prueba t para medidas de 2 grupos independientes

```
[ ] import pandas as pd
    from scipy import stats
    import seaborn as sns
    import numpy as np
```

```
[ ] data2 = pd.read_csv('/content/drive/MyDrive/ESTADISTICA-2023-II/ANALISIS DE DATA.csv', ';')
```

```
<ipython-input-55-24fa6cbe4807>:1: FutureWarning: In a future version of pandas all arguments of read_csv
data2 = pd.read_csv('/content/drive/MyDrive/ESTADISTICA-2023-II/ANALISIS DE DATA.csv', ';')
```

```
[ ] data2.head()
```

	LARGO	ANCHO	PESO_g
0	6.160	4.800	65.060
1	5.825	4.575	82.275
2	6.600	4.767	79.700
3	5.850	4.800	61.500
4	6.250	5.050	68.800

```
[ ] data2.tail()
```

	LARGO	ANCHO	PESO_g
1024	6.350	5.150	86.800
1025	5.300	4.600	80.600
1026	5.633	5.267	82.800
1027	6.225	5.400	75.125
1028	5.900	5.533	81.000

```
[ ] sns.pairplot(data2, diag_kind= 'hist',  
                height = 2.5,  
                corner = True)
```

```
<seaborn.axisgrid.PairGrid at 0x7e7dec26d510>
```

```
import pandas as pd
import matplotlib.pyplot as plt

# Montar Google Drive para acceder al archivo Excel
from google.colab import drive
drive.mount('/content/drive')

# Ruta al archivo Excel en tu Google Drive
file_path = '/content/drive/MyDrive/subirdrivehuevos.xlsx'

# Cargar el archivo Excel en un DataFrame de Pandas
data = pd.read_excel(file_path)

# Función para clasificar los huevos según el peso
def clasificar_huevos(PESO):
    if PESO < 50:
        return 'Súper Chico'
    elif PESO >= 50 and PESO < 55.55:
        return 'Chico'
    elif PESO >= 55.55 and PESO < 62.5:
        return 'Mediano'
    elif PESO >= 62.5 and PESO < 68.88:
        return 'Grande'
    elif PESO >= 68.88 and PESO < 72.22:
        return 'Jumbo'
    else:
        return 'Super Jumbo'
```

NTP 011.2019 HUEVO DE GALLINA

TABLA 2 - Clasificación por peso

Tamaño	Peso
Súper Chico	< 50 g
Chico	50-55,55 g
Mediano	55,55-62,5 g
Grande	62,5-68,88 g
Jumbo	68,88-72,22 g
Súper Jumbo	≥ 72,22 g

```
# Aplicar la función para clasificar los huevos en una nueva columna
data['Categoria'] = data['PESO'].apply(clasificar_huevos)

# Contar la cantidad de huevos en cada categoría
conteo_huevos = data['Categoria'].value_counts()

# Crear un gráfico de barras para visualizar la cantidad de huevos por categoría
plt.figure(figsize=(8, 6))
bars = plt.bar(conteo_huevos.index, conteo_huevos.values, color=['skyblue', 'lightgreen', 'salmon', 'gold', 'magenta', 'coral'])
# Agregar etiquetas de texto con los conteos en cada barra
for bar, count in zip(bars, conteo_huevos.values):
    plt.text(bar.get_x() + bar.get_width() / 2, bar.get_height() - 0.2, str(count), ha='center', color='black', fontsize=10)
plt.title('Cantidad de Huevos por Clasificación de Peso')
plt.xlabel('Clasificación de Peso')
plt.ylabel('Cantidad de Huevos')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```

La estadística es la gramática de la ciencia

-Karl Pearson

**¡MUCHAS
GRACIAS!**