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Class : 2I
Absent No. : 23

MID-TERM EXAMINATION (UTS)

Mata Kuliah : Statistik Komputasi

Dosen : Muhammad Afif Hendawan, S.Kom., M.T.

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Waktu : 200 Menit

Sifat : Open Book

You will use Pokemon data which can be accessed by this [link](#). Your uploaded work must provide the justification of the calculation!

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Rule:

- You are allowed to use one of these tools, such: Google Spreadsheet, Microsoft Excel, Pandas Python
- You are prohibited to use these several tools: Analysis Toolpak Ms. Excel, SPSS, LISREL, JASP, etc.
- **BE CONFIDENT TO DO YOUR EXAM BY YOURSELF**

1. Complete your Pokemon data! Non-complete data of your Pokemon may affect to your score (50% point discount).
2. Calculate on "HP",
 - a. Determine the mean, variance, and its standard deviation. **(5 pts)**
 - b. Determine the Q1, Q2, and Q3. **(5 pts)**
 - c. Is there any *outliers*? Mention if any! **(5 pts)**
3. Based on your calculation at No. 2, make these several things:
 - a. Boxplot of "HP" **(10 pts)**
 - b. Histogram of "HP" with the *bins* is 100. **(10 pts)**
4. Based on mean and standard deviation from No. 2, determine
 - a. The *z-score* to Pokemon which has CP value up to 400 **(10 pts)**
 - b. Probability of Pokemon which has DEF more than 60 **(10 pts)**

Note:

- Use 3 decimal rounded for mean and standard deviation
 - Use 2 decimal no-rounded for z-score.
 - Use all decimal no-rounded for probability score
5. Determine,
 - a. Probability of "CAUGHT" and "FLEE". **(5 pts)**
 - b. By choosing Pokemon 10 times randomly, what is the probability of 3 electric Pokemons? **(20 pts)**
 - c. Use bar chart to represent the distribution of any Pokemons which are caught at Polinema using 10 point scale. **(20 poin)**

Catatan: Gunakan seluruh nilai desimal yang ada.

Answer :

1. Data Used

class	group	Pokemon	date_caught	location	type	status	attack	hp	def
TI 2I	A	Flaeron	15/03/2023	Univ Brawijaya	Fire	Caught	246	103	1
TI 2I	A	Ninetales	15/03/2023	Univ Brawijaya	Fire	Caught	169	121	1
TI 2I	A	Furfrou	15/03/2023	Univ Brawijaya	Normal	Caught	164	128	1
TI 2I	A	Throh	15/03/2023	Univ Brawijaya	Fighting	Caught	172	157	1
TI 2I	A	Heracross	15/03/2023	Univ Brawijaya	Bug/Fighting	Caught	234	105	1
TI 2I	A	Oddish	15/03/2023	Univ Brawijaya	Grass/Poison	Caught	131	12	1
TI 2I	A	Arbok	15/03/2023	Univ Brawijaya	Poison	Caught	167	108	1
TI 2I	A	Feraligatr	15/03/2023	Univ Brawijaya	Water	Caught	205	52	1
TI 2I	A	Lairon	15/03/2023	Univ Brawijaya	Steel/Rock	Caught	158	27	1
TI 2I	A	Chinchou	15/03/2023	Univ Brawijaya	Water/Electric	Caught	106	106	
TI 2I	A	Tranquill	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	144	47	1
TI 2I	A	Ledyba	15/03/2023	Univ Brawijaya	Bug/Flying	Caught	72	65	1
TI 2I	A	Masquerain	15/03/2023	Univ Brawijaya	Bug/Flying	Caught	192	121	1
TI 2I	A	Togedemaru	15/03/2023	Univ Brawijaya	Electric/Steel	Caught	190	120	1
TI 2I	A	Pidove	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	98	65	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	93	75	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	93	90	
TI 2I	A	Pidove	15/03/2023	Univ Brawijaya	Electric/Steel	Caught	98	40	
TI 2I	A	Tranquill	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	144	47	
TI 2I	A	Pikachu	15/03/2023	Univ Brawijaya	Electric	Caught	112	33	
TI 2I	A	Grubbin	15/03/2023	Univ Brawijaya	Bug	Caught	62	107	
TI 2I	A	Tynamo	15/03/2023	Univ Brawijaya	Electric	Caught	55	72	
TI 2I	A	Pidove	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	55	103	
TI 2I	A	Stufful	15/03/2023	Univ Brawijaya	Normal/Fighting	Caught	75	80	
TI 2I	A	Magikarp	15/03/2023	Univ Brawijaya	Water	Caught	10	44	
TI 2I	A	Masquearin	15/03/2023	Univ Brawijaya	Bug/Flying	Flee	60	70	
TI 2I	A	Karrablast	15/03/2023	Univ Brawijaya	Bug	Caught	50	68	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	32	53	
TI 2I	A	Yanma	15/03/2023	Univ Brawijaya	Bug/Flying	Caught	65	91	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	32	74	
TI 2I	A	Cyndaquil	15/03/2023	Univ Brawijaya	Fire	Caught	50	25	
TI 2I	A	Typhlosion	15/03/2023	Univ Brawijaya	Fire	Caught	109	82	
TI 2I	A	Grubbin	15/03/2023	Univ Brawijaya	Bug	Caught	89	55	
TI 2I	A	Vulpix	15/03/2023	Univ Brawijaya	Fire	Caught	60	50	
TI 2I	A	Lillipup	15/03/2023	Univ Brawijaya	Normal	Caught	93	25	

TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	50	87	
TI 2I	A	Doduo	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	75	87	
TI 2I	A	Aron	15/03/2023	Univ Brawijaya	Steel/Rock	Caught	109	100	
TI 2I	A	Tynamo	15/03/2023	Univ Brawijaya	Electric	Caught	80	72	
TI 2I	A	Grubbin	15/03/2023	Univ Brawijaya	Bug	Caught	98	107	
TI 2I	A	Ledyba	15/03/2023	Univ Brawijaya	Bug/Flying	Flee	20	40	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	50	52	
TI 2I	A	Caterpie	15/03/2023	Univ Brawijaya	Bug	Caught	55	53	
TI 2I	A	Sandshrew	15/03/2023	Univ Brawijaya	Ground	Caught	126	97	1
TI 2I	A	Lillipup	15/03/2023	Univ Brawijaya	Normal	Caught	93	29	
TI 2I	A	Doduo	15/03/2023	Univ Brawijaya	Normal/Flying	Caught	75	86	
TI 2I	A	Slugma	15/03/2023	Univ Brawijaya	Fire	Caught	118	79	
TI 2I	A	Surskit	15/03/2023	Univ Brawijaya	Bug/Water	Caught	50	49	
TI 2I	A	Aron	15/03/2023	Univ Brawijaya	Steel/Rock	Caught	121	29	1
TI 2I	B	Caterpie	14/03/2023	Sudimoro	Bug	Caught	55	34	
TI 2I	B	Shelmet	15/03/2023	Polinema	Bug	Caught	72	38	1
TI 2I	B	Clauncher	15/03/2023	Polinema	Water	Caught	108	40	1
TI 2I	B	Starly	15/03/2023	Polinema	Normal/Flying	Caught	101	12	
TI 2I	B	Ledyba	15/03/2023	Polinema	Bug/Flying	Caught	72	12	1
TI 2I	B	Patrat	15/03/2023	Polinema	Normal	Caught	98	57	
TI 2I	B	Caterpie	15/03/2023	Polinema	bug	Caught	55	42	
TI 2I	B	Starly	15/03/2023	Polinema	Normal/Flying	Caught	101	45	
TI 2I	B	Zubat	15/03/2023	Polinema	Poison/Flying	Caught	83	38	
TI 2I	B	Magikarp	15/03/2023	Polinema	Water	Caught	29	50	
TI 2I	B	Shroomish	15/03/2023	Polinema	Grass	Caught	74	35	1
TI 2I	B	Ledyba	15/03/2023	Polinema	Bug/Flying	Caught	72	55	1
TI 2I	B	Pidove	15/03/2023	Polinema	Normal/Flying	Caught	98	13	
TI 2I	B	Tynamo	15/03/2023	Polinema	Electric	Caught	105	55	
TI 2I	B	Lillipup	15/03/2023	Polinema	Normal	Caught	107	12	
TI 2I	B	Hoppip	15/03/2023	Polinema	Grass/Flying	Caught	67	38	
TI 2I	B	Caterpie	15/03/2023	Saxophone	Bug	Caught	55	28	
TI 2I	B	Cyndaquil	15/03/2023	Saxophone	Fire	Caught	116	45	
TI 2I	B	Starly	15/03/2023	Saxophone	Normal/Flying	Caught	101	43	
TI 2I	B	Tranquill	15/03/2023	Saxophone	Normal/Flying	Caught	144	56	1
TI 2I	B	Charmander	15/03/2023	Saxophone	Fire	Caught	116	12	
TI 2I	B	Burmy	15/03/2023	Saxophone	Bug	Caught	53	39	
TI 2I	B	Lillipup	15/03/2023	Saxophone	Grass	Caught	107	23	
TI 2I	B	Hoppip	15/03/2023	Saxophone	Grass/Flying	Caught	67	24	
TI 2I	B	Hoppip	16/03/2023	Dau	Grass/Flying	Caught	67	33	
TI 2I	B	Tynamo	16/03/2023	Dau	Electric	Caught	105	41	
TI 2I	B	Cyndaquil	16/03/2023	Dau	Fire	Caught	116	35	

TI 2I	B	Starly	16/03/2023	Dau	Normal/Flying	Caught	101	31	
TI 2I	B	Shroomish	16/03/2023	Dau	Grass	Caught	74	14	1
TI 2I	B	Castform	16/03/2023	Polinema	Normal	Caught	139	72	1
TI 2I	B	Weedle	16/03/2023	Polinema	Bug/Poison	Caught	63	48	
TI 2I	B	Solrock	16/03/2023	Polinema	Rock/Psychic	Caught	178	85	
TI 2I	B	Starly	16/03/2023	Polinema	Normal/Flying	Caught	101	66	
TI 2I	B	Purrloin	16/03/2023	Polinema	Dark	Caught	98	22	
TI 2I	B	Tynamo	16/03/2023	Polinema	Electric	Caught	105	41	
TI 2I	B	Lillipup	17/03/2023	Polinema	Normal	Caught	107	13	
TI 2I	B	Bunnelby	17/03/2023	Polinema	Normal	Caught	68	27	
TI 2I	B	Froakie	17/03/2023	Polinema	Water	Caught	122	20	
TI 2I	B	Weedle	17/03/2023	Polinema	Bug/Poison	Caught	63	53	
TI 2I	B	Pidove	17/03/2023	Polinema	Normal/Flying	Caught	98	57	
TI 2I	B	Pidove	17/03/2023	Polinema	Normal/Flying	Caught	98	60	
TI 2I	B	Ledyba	17/03/2023	Polinema	Bug/Flying	Caught	72	50	1
TI 2I	B	Stufful	17/03/2023	Polinema	Normal/Fighting	Caught	136	77	
TI 2I	B	Pidove	17/03/2023	Suhat	Normal/Flying	Caught	98	50	
TI 2I	B	Weedle	17/03/2023	Suhat	Bug/Poison	Caught	63	55	
TI 2I	B	Chinchou	17/03/2023	Suhat	Water/Electric	Caught	106	61	
TI 2I	B	Tranquill	17/03/2023	Suhat	Normal/Flying	Caught	144	36	1
TI 2I	B	Patrat	17/03/2023	Suhat	Normal	Caught	98	50	
TI 2I	B	Ledyba	17/03/2023	Suhat	Bug/Flying	Caught	72	33	1
TI 2I	B	Togedemaru	17/03/2023	Suhat	Electric/Steel	Caught	190	29	1
TI 2I	B	Sentret	17/03/2023	Suhat	Normal	Caught	79	25	
TI 2I	B	Sunkern	17/03/2023	Suhat	Grass	Caught	55	23	
TI 2I	B	Grubbin	17/03/2023	Suhat	Bug	Caught	115	47	
TI 2I	B	Sandslash	17/03/2023	Suhat	Ground	Caught	182	74	1
TI 2I	B	Tynamo	17/03/2023	Suhat	Electric	Caught	105	53	
TI 2I	B	Ekans	17/03/2023	Suhat	Poison	Flee	110	111	
TI 2I	B	Weedle	17/03/2023	Suhat	Bug/Poison	Flee	63	120	
TI 2I	C	Bulbasaur	18/03/2023	Polinema	Grass/Poison	Caught	49	12	
TI 2I	C	Caterpie	18/03/2023	Polinema	Bug	Caught	84	46	
TI 2I	C	pikachu	18/03/2023	Polinema	Electric	Caught	78	45	
TI 2I	C	diglett	18/03/2023	Polinema	Ground	Caught	96	23	
TI 2I	C	drownzee	18/03/2023	Univ Brawijaya	Psychic	Caught	37	69	1
TI 2I	C	Voltrob	18/03/2023	Univ Brawijaya	Electric	Caught	118	71	
TI 2I	C	Hitmonlee	19/03/2023	Univ Brawijaya	Fighting	Caught	105	45	1
TI 2I	C	Magikarp	19/03/2023	Univ Brawijaya	Water	Caught	68	10	
TI 2I	C	Eevee	19/03/2023	Univ Brawijaya	Normal	Caught	63	67	
TI 2I	C	Hoothoot	19/03/2023	Univ Brawijaya	Normal/Flying	Caught	46	76	
TI 2I	C	Starly	19/03/2023	Univ Malang	Electric	Caught	35	24	1

TI 2I	C	Nosepass	19/03/2023	Univ Malang	Grass/Flying	Caught	53	19	1
TI 2I	C	Hoppip	19/03/2023	Polinema	Normal	Caught	49	37	
TI 2I	C	Teddiursa	18/03/2023	Polinema	Normal	Caught	51	69	1
TI 2I	C	Slugma	18/03/2023	Polinema	Grace/Ice	Caught	74	45	1
TI 2I	C	Houndour	18/03/2023	Polinema	Normal	Caught	60	87	
TI 2I	C	Himontop	18/03/2023	Polinema	Water	Caught	89	78	
TI 2I	C	Nosepass	18/03/2023	Polinema	Normal	Caught	75	73	
TI 2I	C	Volbeat	18/03/2023	Polinema	Normal	Caught	39	62	
TI 2I	C	Castform	19/03/2023	Polinema	Dark	Caught	44	55	
TI 2I	C	Starly	19/03/2023	Univ Brawijaya	Fire	Caught	44	82	
TI 2I	C	Glameow	19/03/2023	Univ Brawijaya	Normal/Flying	Caught	92	62	
TI 2I	C	Bidoof	19/03/2023	Univ Brawijaya	Normal/Flying	Caught	111	86	
TI 2I	C	Buneary	19/03/2023	Univ Brawijaya	Rock	Caught	109	70	
TI 2I	C	Snower	19/03/2023	Univ Brawijaya	Ground	Caught	32	99	
TI 2I	C	Oshawott	19/03/2023	Univ Brawijaya	Dark	Caught	124	32	
TI 2I	C	Patrat	19/03/2023	Univ Brawijaya	Bug/Poison	Caught	47	48	
TI 2I	C	Lillipup	19/03/2023	Univ Brawijaya	Normal	Caught	80	31	1
TI 2I	C	Purrloin	19/03/2023	Univ Brawijaya	Grass/Poison	Caught	77	98	1
TI 2I	C	Pansear	19/03/2023	Univ Brawijaya	Grace/steel	Caught	74	69	
TI 2I	C	Pidove	19/03/2023	Univ Brawijaya	Bug	Caught	51	79	
TI 2I	C	Tranquill	19/03/2023	Univ Brawijaya	Ground/Electric	Caught	114	138	
TI 2I	C	Roggenrola	19/03/2023	Univ Brawijaya	Fire	Caught	46	23	
TI 2I	C	Drilbur	19/03/2023	Univ Brawijaya	Grass	Caught	120	77	
TI 2I	C	Purrloin	19/03/2023	Univ Brawijaya	Fire	Caught	52	61	1
TI 2I	C	Vanipeda	19/03/2023	Univ Brawijaya	Ground/Electric	Caught	104	22	
TI 2I	C	pikachu	19/03/2023	Barawijaya	Electric	Caught	57	77	
TI 2I	C	diglett	19/03/2023	Barawijaya	Ground	Caught	50	61	1
TI 2I	C	Drowzee	19/03/2023	Barawijaya	Psychic	Caught	49	22	
TI 2I	C	Voltrob	19/03/2023	Barawijaya	Electric	Caught	63	62	
TI 2I	C	Hitmonlee	19/03/2023	Barawijaya	Fighting	Caught	56	56	
TI 2I	D	Teddiursa	19/03/2023	Polinema	Normal	Caught	142	61	
TI 2I	D	Chinchou	18/03/2023	Polinema	Water/Electric	Caught	106	88	
TI 2I	D	Yungoos	18/03/2023	Polinema	Normal	Caught	122	53	
TI 2I	D	Weedle	18/03/2023	Polinema	Bug/Poison	Caught	122	44	
TI 2I	D	Froakie	18/03/2023	Polinema	Water	Caught	122	63	
TI 2I	D	Ekans	18/03/2023	Polinema	Poison	Caught	110	10	
TI 2I	D	Oddish	18/03/2023	Polinema	Grass/Poison	Caught	131	42	1
TI 2I	D	Stunky	18/03/2023	Polinema	Poison/Dark	Caught	121	29	
TI 2I	D	Gastly	18/03/2023	Polinema	Ghost/Poison	Caught	186	43	
TI 2I	D	Stufful	18/03/2023	Polinema	Normal/Fighting	Caught	136	17	
TI 2I	D	Duoduo	18/03/2023	Polinema	Normal/Flying	Caught	158	39	

TI 2I	D	Pidove	18/03/2023	Polinema	Normal/Flying	Caught	98	63	
TI 2I	D	Voltrob	18/03/2023	Polinema	Electric	Caught	109	61	1
TI 2I	D	Oddish	18/03/2023	Polinema	Grass/Poison	Caught	131	39	1
TI 2I	D	Purrloin	18/03/2023	Polinema	Dark	Caught	98	44	
TI 2I	D	Zubat	18/03/2023	Polinema	Poison/Flying	Caught	83	64	
TI 2I	D	Tympole	18/03/2023	Polinema	Water	Caught	98	42	
TI 2I	D	Chinchou	18/03/2023	Polinema	Water/Electric	Caught	106	47	
TI 2I	D	Froakie	18/03/2023	Polinema	Water	Caught	122	44	
TI 2I	D	Glameow	18/03/2023	Polinema	Normal	Caught	109	43	
TI 2I	D	Pansage	18/03/2023	Polinema	Grass	Caught	104	28	
TI 2I	D	Glameow	17/03/2023	Polinema	Normal	Caught	109	14	
TI 2I	D	Magikarp	17/03/2023	Polinema	Water	Caught	29	34	
TI 2I	D	Karrablast	17/03/2023	Polinema	Bug	Caught	137	36	
TI 2I	D	Aron	15/03/2023	Polinema	Steel/Rock	Caught	121	53	1
TI 2I	D	Starly	15/03/2023	Polinema	Normal/Flying	Caught	101	46	
TI 2I	D	Caterpie	15/03/2023	Polinema	Bug	Caught	55	50	
TI 2I	D	Surskit	15/03/2023	Polinema	Bug/Water	Caught	93	43	
TI 2I	D	Primeape	15/03/2023	Polinema	Fighting	Caught	207	47	1
TI 2I	D	Ledyba	15/03/2023	Polinema	Bug/Flying	Caught	72	34	1
TI 2I	D	Solrock	15/03/2023	Polinema	Rock/Psychic	Caught	178	69	1
TI 2I	D	Ekans	15/03/2023	Polinema	Poison	Caught	110	40	
TI 2I	D	Patrat	15/03/2023	Polinema	Normal	Caught	98	62	
TI 2I	D	Hoppip	14/03/2023	Polinema	Grass/Flying	Caught	67	23	
TI 2I	D	Teddiursa	14/03/2023	Polinema	Normal	Caught	142	53	
TI 2I	D	Bunnelby	14/03/2023	Polinema	Normal	Caught	68	37	
TI 2I	D	Vulpix	14/03/2023	Polinema	Fire	Caught	96	36	1
TI 2I	D	Foongus	14/03/2023	Polinema	Grass/Poison	Caught	97	61	
TI 2I	D	Zubat	14/03/2023	Polinema	Poison/Flying	Caught	83	49	
TI 2I	D	Drifblim	14/03/2023	Polinema	Ghost/Flying	Caught	180	30	1
TI 2I	D	Voltrob	14/03/2023	Polinema	Electric	Caught	109	21	1
TI 2I	D	Surskit	14/03/2023	Polinema	Bug/Water	Caught	93	20	
TI 2I	D	Staravia	14/03/2023	Polinema	Normal/Flying	Caught	142	15	
TI 2I	D	Houndour	14/03/2023	Polinema	Dark/Fire	Caught	152	12	
TI 2I	D	Mareanie	14/03/2023	Polinema	Poison/Water	Caught	98	47	1
TI 2I	D	Houndour	14/03/2023	Polinema	Dark/Fire	Caught	152	36	
TI 2I	D	Sentret	14/03/2023	Polinema	Normal	Caught	84	24	
TI 2I	D	Caterpie	14/03/2023	Polinema	Bug	Caught	55	29	
TI 2I	D	Eevee	14/03/2023	Polinema	Normal	Caught	104	13	1
TI 2I	D	Surskit	14/03/2023	Polinema	Bug/Water	Caught	93	42	
TI 2I	D	Bulbasaur	14/03/2023	Polinema	Grass/Poison	Caught	118	12	1
TI 2I	E	Charmander	15/03/2023	Polinema	Fire	Caught	43	28	

TI 2I	E	Tranquil	20/03/2023	Polinema	Normal / Fly	Caught	62	48	
TI 2I	E	Hitmontop	17/03/2023	Polinema	Fighter	Caught	71	65	
TI 2I	E	Starly	17/03/2023	Polinema	Normal / Fly	Caught	57	44	
TI 2I	E	Sewaddle	18/03/2023	Sulfat	Bug / leaf	Caught	16	58	
TI 2I	E	Flareon	17/03/2023	Sulfat	Fire	Caught	55	13	
TI 2I	E	Voltrob	17/03/2023	Sulfat	Electric	Caught	44	28	
TI 2I	E	Popplio	17/03/2023	Dau	Water	Caught	14	34	
TI 2I	E	Vulpix	17/03/2023	Dau	Fire	Caught	56	43	
TI 2I	E	Aaron	20/03/2023	Suhat	Steel/Rock	Caught	26	30	
TI 2I	E	Tranquill	17/03/2023	Suhat	Normal / Fly	Caught	68	30	
TI 2I	E	Bidoof	17/03/2023	Suhat	Normal	Caught	19	96	
TI 2I	E	Pidove	17/03/2023	Suhat	Normal / Fly	Caught	39	84	
TI 2I	E	Kricketot	17/03/2023	Suhat	Bug	Caught	93	13	
TI 2I	E	Lillipup	17/03/2023	Sulfat	Normal	Caught	52	74	
TI 2I	E	Kricketot	20/03/2023	Polinema	Bug	Caught	37	15	
TI 2I	E	Ekans	17/03/2023	Polinema	Poison	Caught	25	43	
TI 2I	E	Grubbin	17/03/2023	Dau	Bug	Caught	13	49	
TI 2I	E	Deerling	17/03/2023	Polinema	Normal / Grass	Caught	14	46	
TI 2I	E	Cuterpie	20/03/2023	Dau	Bug	Caught	13	72	
TI 2I	E	Cyndaquil	17/03/2023	Polinema	Fire	Caught	55	26	
TI 2I	E	Chinchou	18/03/2023	Polinema	Water / Electric	Caught	27	41	
TI 2I	E	Froakie	18/03/2023	Polinema	Water	Caught	94	17	
TI 2I	E	Deerling	17/03/2023	Dau	Normal / Grass	Caught	79	59	
TI 2I	E	Lillipup	20/03/2023	Suhat	Normal	Caught	15	70	
TI 2I	E	Lillipup	20/03/2023	Dau	Normal	Caught	15	34	
TI 2I	E	Patrat	20/03/2023	Polinema	Normal	Caught	74	24	
TI 2I	E	Oddish	17/03/2023	Polinema	Leaf / Poison	Caught	62	29	
TI 2I	E	Chikorita	20/03/2023	Sulfat	Leaf	Caught	17	29	
TI 2I	E	Mareanie	18/03/2023	Dau	Poison / Water	Caught	31	51	
TI 2I	E	Chinchou	18/03/2023	Sulfat	Water / Electric	Caught	74	92	
TI 2I	E	Pidove	18/03/2023	Dau	Normal / Fly	Caught	26	76	
TI 2I	E	Fletchling	18/03/2023	Suhat	Normal / Fly	Caught	13	24	
TI 2I	E	Oddish	17/03/2023	Suhat	Leaf / Poison	Caught	21	93	
TI 2I	E	Exeggcute	20/03/2023	Sulfat	Leaf / Psychic	Caught	39	27	
TI 2I	E	Corsola	17/03/2023	Sulfat	Water / Rock	Caught	38	22	
TI 2I	E	Sawk	18/03/2023	Sulfat	Fighter	Caught	74	88	
TI 2I	E	Doduo	20/03/2023	Suhat	Normal / Fly	Caught	43	60	
TI 2I	E	Popplio	20/03/2023	Suhat	Water	Caught	52	91	
TI 2I	E	Ekans	20/03/2023	Sulfat	Poison	Caught	93	15	
TI 2I	E	Ekans	17/03/2023	Sulfat	Poison	Flee	35	33	
TI 2I	E	Ekans	17/03/2023	Sulfat	Poison	Flee	66	50	

TI 2I	E	Oddish	17/03/2023	Polinema	Leaf / Poison	Flee	95	42	
TI 2I	E	Mareanie	18/03/2023	Polinema	Poison / Water	Flee	39	43	
TI 2I	E	Tentacool	18/03/2023		Poison / Water	Caught	171	13	
TI 2I	E	Lairon	20/03/2023		Steel/Rock	Caught	139	59	
TI 2I	E	Hitmontop	17/03/2023		Fighter	Caught	67	24	
TI 2I	F	Lairon	18/03/2023	Polinema	Steel/Rock	Caught	158	42	1
TI 2I	F	Pikachu	18/03/2023	Polinema	Electric	Caught	112	25	
TI 2I	F	Panpour	15/03/2023	Univ Brawijaya	Water	Caught	104	24	
TI 2I	F	Aron	15/03/2023	Univ Brawijaya	Steel/Rock	Caught	121	38	1
TI 2I	F	Zubat	15/03/2023	Rampal	Poison/Flying	Caught	83	50	
TI 2I	F	Froakie	15/03/2023	Rampal	Water	Caught	122	34	
TI 2I	F	Tepig	15/03/2023	Rampal	Fire	Caught	115	35	
TI 2I	F	Eevee	15/03/2023	Rampal	Normal	Caught	104	46	1
TI 2I	F	Elgyem	15/03/2023	Araya	Psychic	Caught	148	60	1
TI 2I	F	Snivy	15/03/2023	Araya	Grass	Caught	88	12	1
TI 2I	F	Wooper	15/03/2023	Araya	Water/Ground	Caught	75	14	
TI 2I	F	Bergmite	15/03/2023	Araya	Ice	Caught	117	32	1
TI 2I	F	Voltorb	15/03/2023	Araya	Electric	Caught	109	34	1
TI 2I	F	Karrablast	15/03/2023	Araya	Dark	Caught	137	24	
TI 2I	F	Ekans	15/03/2023	Sawojajar	Poison	Caught	110	33	
TI 2I	F	Drifblim	15/03/2023	Sawojajar	Ghost/Flying	Caught	180	119	1
TI 2I	F	Meowth	15/03/2023	Sawojajar	Normal	Caught	92	44	
TI 2I	F	Venonat	15/03/2023	Sawojajar	Bug/Poison	Caught	100	47	1
TI 2I	F	Venipede	15/03/2023	Sawojajar	Bug/Poison	Caught	83	31	
TI 2I	F	Clauncher	15/03/2023	Sawojajar	Water	Caught	108	29	1
TI 2I	F	Tympole	15/03/2023	Klojen	Water	Caught	98	30	
TI 2I	F	Dunsparce	15/03/2023	Klojen	Normal	Caught	131	60	1
TI 2I	F	Oshawott	15/03/2023	Klojen	Water	Caught	117	34	
TI 2I	F	Ferroseed	15/03/2023	Klojen	Grass/Steel	Caught	82	29	1
TI 2I	F	Blitzle	15/03/2023	Pakis	Electric	Caught	118	35	
TI 2I	F	Ralts	15/03/2023	Pakis	Psychic/Fairy	Caught	79	54	
TI 2I	F	Togedemaru	15/03/2023	Pakis	Electric/Steel	Caught	190	57	1
TI 2I	F	Lunatone	15/03/2023	Pakis	Rock/Psychic	Caught	178	19	1
TI 2I	F	Foongus	15/03/2023	Pakis	Grass/Poison	Caught	97	77	
TI 2I	F	Wimpod	15/03/2023	Pakis	Bug/Water	Caught	67	39	
TI 2I	F	Poliwag	15/03/2023	Batu	Water	Caught	101	34	
TI 2I	F	Pikachu	15/03/2023	Batu	Electric	Caught	112	47	
TI 2I	F	Vulpix	15/03/2023	Batu	Fire	Caught	96	11	1
TI 2I	F	Seel	15/03/2023	Batu	Water	Caught	85	54	1
TI 2I	F	Yungoos	15/03/2023	Batu	Normal	Caught	122	24	
TI 2I	F	Ekans	15/03/2023	Batu	Poison	Caught	110	10	

TI 2I	F	Squirtle	15/03/2023	Batu	Water	Caught	94	12	
TI 2I	F	Arbok	15/03/2023	Araya	Poison	Flee	205	65	
TI 2I	F	Ekans	15/03/2023	Araya	Poison	Flee	158	35	
TI 2I	F	Arbok	15/03/2023	Sawojajar	Poison	Flee	106	87	

2. A. Mean = $49,81404 = 49,814$

Variance = 736,6286

Standard Deviation = $27,1409 = 27,141$

B. Q1 = 29

Q2 = 45

Q3 = 65

IQR = 36

Upper Fence = 119

Lower Fence = -25

C. Based on the obtained data from point b, yes, there are some outliers, they are:

1. Ninetales (hp=121)

2. Furfrou (hp=128)

3. Throh (hp=157)

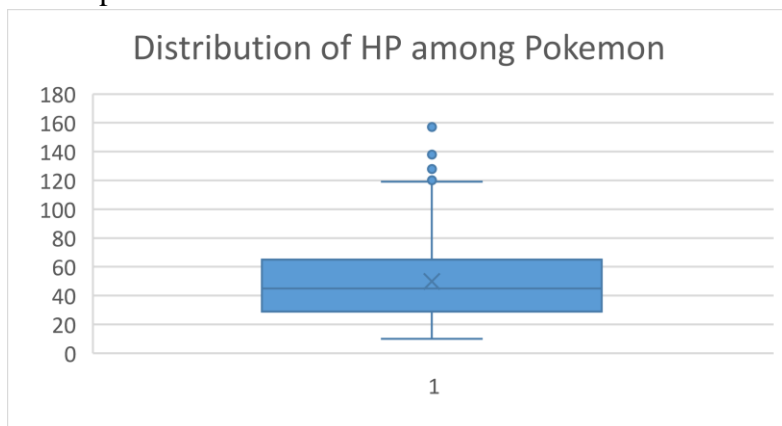
4. Masquerain
(hp=121)

5. Togedemaru
(hp=120)

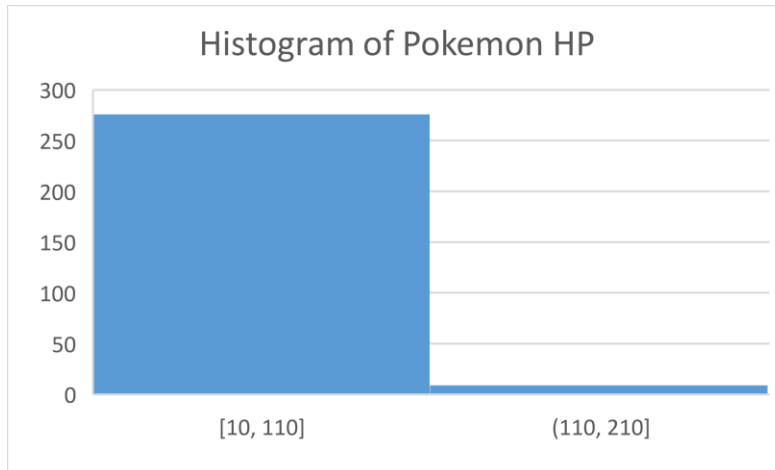
6. Weedle (hp=120)

7. Tranquill (hp=138)

3. A. Boxplot of HP



B. Histogram of HP



4. A. Z-score of Pokemon

Mean of cp = 228,4421

Standard Deviation of cp = 274,9121

Pokemon	def	cp	z-score
Flaeron	179	1648	FALSE
Ninetales	190	1461	FALSE
Furfrou	167	1403	FALSE
Throh	160	1288	FALSE
Heracross	179	1243	FALSE
Oddish	112	14	-0,780037103
Arbok	153	1204	FALSE
Feraligatr	188	287	0,213015169
Lairon	198	80	-0,539958532
Chinchou	97	485	FALSE
Tranquill	107	173	-0,201666
Ledyba	118	251	0,082063221
Masquerain	150	1533	FALSE
Togedemaru	145	1595	FALSE
Pidove	80	268	0,143901641
Surskit	87	382	0,558582809
Surskit	87	519	FALSE
Pidove	80	104	-0,452657233
Tranquill	97	173	-0,201666
Pikachu	96	111	-0,427194355
Grubbin	45	769	FALSE
Tynamo	40	423	FALSE
Pidove	50	586	FALSE

Stufful	50	378	0,544032592
Magikarp	8	92	-0,496307883
Masquearin	62	881	FALSE
Karrablast	45	376	0,536757484
Surskit	30	186	-0,154377796
Yanma	45	576	FALSE
Surskit	30	405	FALSE
Cyndaquil	60	59	-0,616347168
Typhlosion	85	775	FALSE
Grubbin	45	578	FALSE
Vulpix	65	309	0,293041359
Lillipup	45	574	FALSE
Surskit	60	468	FALSE
Doduo	50	871	FALSE
Aron	77	879	FALSE
Tynamo	66	423	FALSE
Grubbin	54	769	FALSE
Ledyba	30	544	FALSE
Surskit	60	199	-0,107089593
Caterpie	55	102	-0,459932341
Sandshrew	120	773	FALSE
Lillipup	45	57	-0,623622276
Doduo	50	874	FALSE
Slugma	71	445	FALSE
Surskit	60	170	-0,212578662
Aron	141	81	-0,536320978
Caterpie	55	43	-0,674548034
Shelmet	140	76	-0,554508748
Clauncher	117	131	-0,354443272
Starly	58	10	-0,794587319
Ledyba	118	10	-0,794587319
Patrat	73	189	-0,143465134
Caterpie	55	68	-0,583609181
Starly	58	124	-0,379906151
Zubat	73	85	-0,521770761
Magikarp	85	108	-0,438107017
Shroomish	110	54	-0,634534939
Ledyba	118	193	-0,128914918
Pidove	80	10	-0,794587319
Tynamo	78	268	0,143901641
Lillipup	86	12	-0,787312211

Hoppip	94	98	-0,474482558
Caterpie	55	25	-0,740024008
Cyndaquil	93	166	-0,227128879
Starly	58	113	-0,419919246
Tranquill	107	243	0,052962788
Charmander	93	12	-0,787312211
Burmy	83	71	-0,572696519
Lillipup	86	34	-0,707286021
Hoppip	94	35	-0,703648467
Hoppip	94	70	-0,576334073
Tynamo	78	137	-0,332617948
Cyndaquil	93	116	-0,409006584
Starly	58	65	-0,594521844
Shroomish	110	10	-0,794587319
Castform	139	393	0,598595904
Weedle	50	87	-0,514495653
Solrock	153	543	FALSE
Starly	58	268	0,143901641
Purrloin	73	28	-0,729111346
Tynamo	78	147	-0,296242407
Lillipup	86	12	-0,787312211
Bunnelby	72	33	-0,710923575
Froakie	84	37	-0,696373359
Weedle	50	108	-0,438107017
Pidove	80	170	-0,212578662
Pidove	80	205	-0,085264268
Ledyba	118	152	-0,278054636
Stufful	95	367	0,504019497
Pidove	80	155	-0,267141974
Weedle	50	105	-0,449019679
Chinchou	97	163	-0,238041541
Tranquill	107	96	-0,481757666
Patrat	73	167	-0,223491324
Ledyba	118	66	-0,590884289
Togedemaru	145	90	-0,503582991
Sentret	73	39	-0,68909825
Sunkern	55	21	-0,754574224
Grubbin	85	160	-0,248954203
Sandslash	175	541	FALSE
Tynamo	78	251	0,082063221
Ekans	97	230	0,005674584

Weedle	60	243	0,052962788
Bulbasaur	49	14	-0,780037103
Caterpie	79	60	-0,612709614
pikachu	87	189	-0,143465134
diglett	82	101	-0,463569896
drownzee	123	279	0,183914736
Voltrob	50	414	FALSE
Hitmonlee	109	390	0,587683242
Magikarp	85	10	-0,794587319
Eevee	48	288	0,216652723
Hoothoot	59	187	-0,150740242
Starly	101	36	-0,700010913
Nosepass	103	21	-0,754574224
Hoppip	99	82	-0,532683424
Teddiursa	110	204	-0,088901822
Slugma	115	153	-0,274417082
Houndour	98	487	FALSE
Himontop	43	394	0,602233458
Nosepass	42	325	0,351242225
Volbeat	30	268	0,143901641
Castform	90	221	-0,027063403
Starly	32	444	FALSE
Glameow	46	242	0,049325234
Bidoof	37	520	FALSE
Buneary	33	323	0,343967117
Snower	31	749	FALSE
Oshawott	41	77	-0,550871194
Patrat	90	185	-0,15801535
Lillipup	114	57	-0,623622276
Purrloin	103	420	FALSE
Pansear	77	365	0,496744389
Pidove	37	371	0,518569714
Tranquill	52	1030	FALSE
Roggenrola	67	38	-0,692735804
Drilbur	54	425	FALSE
Purrloin	111	314	0,31122913
Vanipeda	40	98	-0,474482558
pikachu	31	425	FALSE
diglett	112	314	0,31122913
Drowzee	57	98	-0,474482558
Voltrob	95	236	0,027499909

Hitmonlee	69	198	-0,110727147
Teddiursa	93	251	0,082063221
Chinchou	97	333	0,380342658
Yungoos	56	157	-0,259866866
Weedle	56	72	-0,569058965
Froakie	84	340	0,405805536
Ekans	97	11	-0,790949765
Oddish	112	190	-0,13982758
Stunky	90	45	-0,667272926
Gastly	67	289	0,220290277
Stufful	95	17	-0,769124441
Duoduo	83	217	-0,041613619
Pidove	80	217	-0,041613619
Voltrob	111	326	0,354879779
Oddish	112	153	-0,274417082
Purrloin	73	124	-0,379906151
Zubat	73	228	-0,001600524
Tympole	78	92	-0,496307883
Chinchou	97	104	-0,452657233
Froakie	84	173	-0,201666
Glameow	82	125	-0,376268597
Pansage	94	95	-0,48539522
Glameow	82	11	-0,790949765
Magikarp	85	40	-0,685460696
Karrablast	87	108	-0,438107017
Aron	141	251	0,082063221
Starly	58	141	-0,318067731
Caterpie	55	75	-0,558146302
Surskit	87	142	-0,314430177
Primeape	138	280	0,18755229
Ledyba	118	73	-0,565421411
Solrock	153	350	0,442181077
Ekans	97	164	-0,234403987
Patrat	73	231	0,009312139
Hoppip	94	29	-0,725473791
Teddiursa	93	203	-0,092539377
Bunnelby	72	62	-0,605434506
Vulpix	109	102	-0,459932341
Foongus	91	166	-0,227128879
Zubat	73	126	-0,372631043
Drifblim	102	31	-0,718198683

Voltrob	111	37	-0,696373359
Surskit	87	32	-0,714561129
Staravia	94	17	-0,769124441
Houndour	83	15	-0,776399549
Mareanie	110	141	-0,318067731
Houndour	83	115	-0,412644138
Sentret	79	39	-0,68909825
Caterpie	55	30	-0,721836237
Eevee	114	14	-0,780037103
Surskit	87	122	-0,387181259
Bulbasaur	111	14	-0,780037103
Charmander	14	12	-0,787312211
Tranquil	68	18	-0,765486887
Hitmontop	80	28	-0,729111346
Starly	69	29	-0,725473791
Sewaddle	24	34	-0,707286021
Flareon	29	39	-0,68909825
Voltrob	67	40	-0,685460696
Popplio	62	48	-0,656360263
Vulpix	46	51	-0,645447601
Aaron	73	52	-0,641810047
Tranquill	57	54	-0,634534939
Bidoof	55	66	-0,590884289
Pidove	16	71	-0,572696519
Kricketot	19	75	-0,558146302
Lillipup	12	77	-0,550871194
Kricketot	62	78	-0,54723364
Ekans	19	81	-0,536320978
Grubbin	17	95	-0,48539522
Deerling	27	111	-0,427194355
Cutterpie	57	115	-0,412644138
Cyndaquil	77	120	-0,394456368
Chinchou	92	135	-0,339893056
Froakie	22	140	-0,321705285
Deerling	19	144	-0,307155069
Lillipup	56	154	-0,270779528
Lillipup	72	163	-0,238041541
Patrat	97	177	-0,187115783
Oddish	29	213	-0,056163835
Chikorita	95	189	-0,143465134
Mareanie	67	195	-0,121639809

Chinchou	19	225	-0,012513186
Pidove	74	228	-0,001600524
Fletchling	97	231	0,009312139
Oddish	32	234	0,020224801
Exeggcute	77	254	0,092975883
Corsola	99	255	0,096613437
Sawk	14	270	0,151176749
Doduo	72	274	0,165726965
Popplio	33	278	0,180277182
Ekans	64	303	0,271216034
Ekans	93	255	0,096613437
Ekans	75	275	0,169364519
Oddish	25	156	-0,26350442
Mareanie	98	195	-0,121639809
Tentacool	39	342	0,413080645
Lairon	181	428	FALSE
Hitmontop	94	512	FALSE
Lairon	196	193	-0,128914918
Pikachu	96	64	-0,598159398
Panpour	94	38	-0,692735804
Aron	141	117	-0,40536903
Zubat	73	160	-0,248954203
Froakie	84	101	-0,463569896
Tepig	85	71	-0,572696519
Eevee	114	129	-0,361718381
Elgyem	100	334	0,383980212
Snivy	107	10	-0,794587319
Wooper	66	10	-0,794587319
Bergmite	120	80	-0,539958532
Voltorb	111	110	-0,430831909
Karrablast	87	48	-0,656360263
Ekans	90	109	-0,434469463
Drifblim	102	508	FALSE
Meowth	78	118	-0,401731476
Venonat	100	108	-0,438107017
Venipede	99	84	-0,525408315
Clauncher	117	66	-0,590884289
Tympole	76	50	-0,649085155
Dunsparce	128	172	-0,205303554
Oshawott	85	70	-0,576334073
Ferroseed	155	62	-0,605434506

Blitzle	64	89	-0,507220545
Ralts	59	177	-0,187115783
Togedemaru	145	370	0,51493216
Lunatone	153	30	-0,721836237
Foongus	91	289	0,220290277
Wimpod	74	114	-0,416281692
Poliwag	82	98	-0,474482558
Pikachu	96	211	-0,063438944
Vulpix	109	10	-0,794587319
Seel	121	136	-0,336255502
Yungoos	56	37	-0,696373359
Ekans	90	11	-0,790949765
Squirtle	121	12	-0,787312211
Arbok	23	43	-0,674548034
Ekans	87	56	-0,62725983
Arbok	43	23	-0,747299116

B. Number of Pokemons which has DEF > 60 = 200

Total Pokemon = 285

$P(X) = 200/285 = 0,701754$

5. A. Number of caught Pokemon = 274

Number of fleeing Pokemon = 11

Total Pokemon = 285

Probability of caught = 0,961404

Probability of flee = 0,038596

B. Number of caught Pokemon = 274

Number of electric Pokemon = 31

Probability of catching electric Pokemon = 0,108772

Probability of catching 3 electric Pokemon in 10 trials = 0,068969

C. Caught Pokemon in Polinema

Pokemon	Frequency
Shelmet	1
Clauncher	1
Starly	5
Ledyba	4
Patrat	3
Caterpie	4
Zubat	3
Magikarp	2

Shroomish	1
Pidove	4
Tynamo	2
Lillipup	2
Hoppip	3
Castform	2
Weedle	3
Solrock	2
Purrloin	2
Bunnelby	2
Froakie	4
Stufful	2
Bulbasaur	2
pikachu	2
diglett	1
Teddiursa	3
Slugma	1
Houndour	3
Himontop	1
Nosepass	1
Volbeat	1
Chinchou	3
Yungoos	1
Ekans	3
Oddish	3
Stunky	1
Gastly	1
Duoduo	1
Voltrob	2
Tympole	1
Glameow	2
Pansage	1
Karrablast	1
Aron	1
Surskit	3
Primeape	1
Vulpix	1
Foongus	1
Drifblim	1
Staravia	1
Mareanie	1

Sentret	1
Eevee	1
Charmander	1
Tranquil	1
Hitmontop	2
Kricketot	1
Deerling	1
Cyndaquil	1
Tentacool	1
Lairon	2

