assingment no 1	Descriptive Statistics
Question no 1	Understanding Central Tendency (Easy)
	A bakery tracks the daily sales of muffins (in dozens) over a week: [10, 12, 11, 15, 14, 13, 12]. What is the most representative value of their weekly sales, and why?
ANSWER -:	**The most represent value in week sales is 12**
	the mode is 12
WHY?	The mode means is the most frequential / repesntative value its called mode
	as per the given data, in weekly sales in a (dozens). and in which the representative valuse is **12**

QUESTION 2		Mean in Real Life (Easy)					
	A teacher records the marks of her students in a short quiz: [12, 15, 14, 16, 18, 20, 19]						
	What is the mean score, and what does it tell us about the class's performance?						
ANSWER	Your first steap is find the mean		[12,15,14,16,18,20,19]				
	THE SUM OF ALL VALUES DIVIDED BY THE TOTAL NUMBERS OFVALUS						
		marks					
		12					
		15					
		14					
		16					
		18					
		20	**mean = sum of all observation /number of observation**				
		19					
	SUM	114		**THE MEAN IS 16.28571429**			
		114/7					
	MEAN	**16.28571429**					
The mean score of about 16.3 represents the average performance of the class.							
The average is influenced by both lower scores (12, 14) and higher scores (18, 19, 20), giving a balanced view of class performance.							

	Q3: Mode in Real Life (Easy)					
QUESTION 3	A store records the shoe sizes sold in one day: [7, 8, 9, 8, 8, 10, 7, 9]					
	What is the mode, and why is this information useful for the store manager ?					
ANSWER	7					
	8					
	9					
	8		MODE = 8			
	8					
	10					
	7					
	9					
MODE	**8**					
question	what is the mode ?					
answer	The valuse is that appears maximum numbers of time					
	in given numerical data					
	WheneverThe store manager seen this data that time he understand thing which product size mostly sold .					

Medium Level

Median in Real Life (Medium)

QUESTION 4

A car dealer notes the prices of used cars: [$8,000, $9,500, $10,200, $11,000, $50,000].

Why is the median a better measure than the mean in this case? Calculate the median.

[$8,000, $9,500, $10,200, $11,000, $50,000]

ANSWER	**price**
	8,000
	9,500
	10,200
	11,000
	50,000
MEDIAN=	**10200**

THE ANSWER IS
median is =$10,200

In the given data i seen in which the using outliers ,so that outliers effect when calculate the mean not properly analysis the data .

Outliers effected valuse when caluculate the mean ,

	Dispersion Introduction (Medium)				
QUESTION 5	A student times how long it takes to finish a puzzle each day: [25, 30, 27, 35, 40]				
	What does the range tell us about the variation in the student's puzzle-solving time?				
ANSWER	**formula = maximum - minimum**				
	[25,30,27,35,40]				
	max =40	min=25			
	40-27= 15				
students puzzle solving time =15					
The range of 15 minutes shows the difference between the fastest and slowest puzzle-solving times.					
Some days the student solves the puzzle much faster, while on other days it takes considerably longer					

	: Range in Action (Medium)					
QUESTION 6	A farmer records the weekly weight of harvested apples (kg): [100, 105, 98, 110, 120]					
	Find the range. How can this help the farmer in planning his packaging?					
ANSWER	**RANGE** = Maxx- mini		**110-98**			
		12				
The range shows variability in weeakly harvest weight						
the range of 22kg means the harvest can change from week to week						
plan flexible packaging quantities						
avoid under packaging						

	Variance for Decision-Making (Medium)
QUESTION 7	Two delivery companies track delivery delays (in minutes).
	Company A: variance = 6
	Company B: variance = 15
	Which company is more consistent, and why?
ANSWER	Variance measure how spread out the data from the mean
	a lower variance means delivery delay
	company A has a veriance is 6 and company B Has a veriance 15
	6> 15 company **A** delivery delay less than company **B**

	Hard Level				
QUESTION 8	Standard Deviation in Context (Hard)				
	A finance student compares the daily price fluctuations of two cryptocurrencies.				
	Coin A: standard deviation = $30				
	Coin B: standard deviation = $120				
	Which coin is riskier to invest in, and why?				
ANSWER	standard deviation measure of volatility				
	how much price fluctuate around the average				
	A higher standard deviation means	larger and more frequant price swing			
	coin A has a standard deviation of $ 30, and coin B has $120				
	$120>$30 coin B price much be volatile , its riskier for investors compapre to coin A				

: Combining Measures (Hard)

QUESTION 9 A family records their monthly electricity usage (in kWh): [400, 420, 390, 450, 410].

Find the mean and standard deviation. What do these values together tell you about the family's energy use pattern?

ANSWER

	Electricity in (kwh)
	400
	420
	390
	450
	410
mean	**414**
standard deviation	**20.59126028**

The mean (414 kWh) represents the family's typical monthly electricity use

The standard deviation (~21 kWh) shows that monthly usage usually varies by about 20–21 kWh from the average

the standard deviation is relatively small compared to the mean.

Practical Application (Hard

QUESTION 10 A basketball player's points in 8 games are recorded: [15, 18, 20, 22, 25, 17, 19, 21]

Find the mean, median, mode, range, and standard deviation. What insights can these measures provide about the player's scoring performance?

first calculate the median the data is arranged assending to desending order

ANSWER	**POINTS**
	15
	18
	20
	22
	25
	17
	19
	21
mean	**19.6**

POINTS	asending to desending
15	15
18	17
20	18
22	19
25	20
17	21
19	22
21	25
Median =	**19.5**

19+20/2=19.5

POINTS	
15	**No mode in this data**
18	
20	
22	
25	
17	
19	
21	
mode = no mode	

POINTS
15
18
20
22
25
17
19
21
10

RANGE = MAX- MIN =25-15=10

POINTS
15
18
20
22
25
17
19
21
3.11

Range	**Standard deviation**

MEAN	(~19.6) shows the player typically scores around 20 points per game.
MEDIAN	(19.5) being close to the mean indicates a balanced and consistent scoring pattern.
MODE	No mode suggests the player doesn't rely on scoring the same exact number each game.
RANGE	The range (10 points) shows moderate variation between lowest and highest scores.

STANDARD DEVIATION	The standard deviation (~3.1) indicates that most games fall within about ±3 points of the average, showing good consistency			