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HP 41 PROGRAM SUBMITTAL FORM
PROGRAMMFORMBLATT/DOCUMENTATION DU PROGRAMME/GENERALITÀ SUL PROGRAMMA

Program Title
Programmtitel / Titre du programme / Titolo del programma: HISTOGRAM

Category No. (Kategorie Nr. / Catégorie N° / Categoria N°): 301
Name (Rubrik / Rubrique / Nome della categoria): General statistics

No. of program lines
Anzahl Programmzeilen / Nombre de lignes de programme / N° di linee di programma: 169

No. of data registers
Anzahl des benötigten Datenspeicher / Nombre de registres de données / N° di registri utilizzati: 13+ n cells

Recommended HP 41 System configuration
Empfohlene System-Konfiguration / Configuration recommandée / Configurazione raccomandata
Port # 1: RAM
Port # 2:
Port # 3:
Port # 4:

This program requires the following programs as subroutines:
Dieses Programm benutzt folgende Programme als Unterprogramme: / Ce programme utilise les programmes suivants comme sous-programmes: / Questo programma usa i seguenti programmi come subroutines:

Program Name:
Programm: / Nom du programme: / Programma:

HP Applications ROM
HP Applikations ROM / ROM d'application HP / ROM di applicazione HP

Program Abstract
Kurzbeschreibung / Résumé / Breve descrizione del programma

Giving the range of storing and the cellwidth, this program constructs a histogram of entered data. After storing the data, each cell may be viewed by a number or x+ number of the stored data. Starsize may be defined. Mean, standarddeviation and n are calculated of all the accepted data. False data correction is possible.

Program Size: 046

Name
Name/Nom/Nome: Ed Nieuwenhuys

Address
Strasse/Adresse/Indirizzo: Langsom 39

Country (Land / Pays / Paese): Netherlands
Postal Code (Postleitzahl / Code postal / C.A.P.): 1066 GC
City (Ort / Localité / Città): Amsterdam

ACKNOWLEDGMENT AND AGREEMENT
Erklärung und Ermächtigung/Déclaration et Autorisation/Dichiarazione e Autorizzazione

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Date (Datum / Date / Data): 31-10-82
Signature (Unterschrift / Signature / Firma):

HEWLETT-PACKARD SA
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Geneva – Switzerland

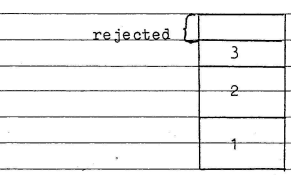
PROGRAM DESCRIPTION I

PROGRAMMBESCHREIBUNG I
DESCRIPTION DU PROGRAMME I
DESCRIZIONE DEL PROGRAMMA I

Application, Equations, Variables
Anwendung, Gleichungen, Veränderliche
Application, Equations, Variables
Applicazione, Equazioni, Variabili

A cell viewed like 0 - 10 means that the data from 0 till 10 are stored in this cell. 10 till 20 is stored in the next cell

When your x-min = 0, your x-max = 25 and the increment is 10, three cells are created. 25 will be rejected, 0 will be accepted.



Operating limits and Warnings
Grenzen und Einschränkungen
Limites et restrictions
Limiti operativi e avvertenze

This program has been verified only with respect to the numerical example given in Program Description II. User accepts and uses this program material AT HIS OWN RISK, in reliance solely upon his own inspection of the program material and without reliance upon any representation or description concerning the program material.
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Dieses Programm wurde lediglich anhand des in der Programmbeschreibung II enthaltenen Zahlenbeispiels überprüft. Der Benutzer erhält und benutzt das Programmmaterial auf eigenes Risiko hin; er hat es deshalb – gleichgültig, ob es bereits anderweitig präsentiert oder beschrieben wurde – selbst zu untersuchen.
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Le présent programme n'a été vérifié qu'en ce qui concerne l'exemple numérique indiqué dans la description du programme II. L'utilisateur accepte et utilise le présent programme À SES PROPRES RISQUES et doit se fier uniquement à sa propre inspection dudit programme sans se référer à toute autre déclaration et description.
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Questo programma è stato verificato soltanto per quanto concerne l'esempio numerico indicato nella Descrizione del Programma II. L'utilizzatore accetta e utilizzerà il presente programma A SUO INTERO RISCHIO, fidandosi unicamente della propria verifica del programma e non basandosi su altre dichiarazioni o descrizioni.
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PROGRAM DESCRIPTION II

PROGRAMMBESCHREIBUNG II
DESCRIPTION DU PROGRAMME II
DESCRIZIONE DEL PROGRAMMA II

Example
Beispiel
Exemple
Esempio

A histogram is constructed with the following data.

-25, -30, -55, 75, 13, 10, 12, 88, 65, 73, 12, -28, 13, 6, 1, 78, 53, 28, 36, 25, -3, 48, -13, 12, 21, -2, -10, 35, 25, 64, 112, 18, 3, 25.

We want to accept all data between -60 and 60, the increment (cellwidth) will be 10 and the * size will be two. So every two stored data will be represented by one star.

If you want to sort data, just make an increment of one. The data should not be in decimal and your SIZE must be large enough!

Sketch
Skizze
Croquis
Schizzo

PROGRAM DESCRIPTION III

PROGRAMMBESCHREIBUNG III
DESCRIPTION DU PROGRAMME III
DESCRIZIONE DEL PROGRAMMA III

Data Input Dateneingabe Données Dati	Keystrokes Tasten Touches Tasti	Result Resultat Résultat Risultato	Comments Kommentare Commentaires Commenti
	XEQ HIS (A")	X MIN?	
-60	R/S	X MAX?	
60	R/S	INCR?	
10	R/S	* SIZE?	If no * , only press R/S
2	R/S (SF 01)	12 CELLS	12 cells are made to store the data. When your SIZE was to small " SET SIZE 025" will be viewed
		↑OBS 1	
-25	R/S	↑OBS 2	
-30	R/S	↑OBS 3	
-55	R/S	↑OBS 4	
75	R/S	↑OBS 4	-75 is out of range
13	R/S	↑OBS 5	
10	R/S	a.s.o.	
		↑OBS 29	
35	R/S	↑OBS 30	This should have been 25
	C	↑OBS 29	The last input has been deleted
or a "↑-OBS, wrong input, R/S"			Press a "if to delete another value. ↑-OBS is asked than.
25	R/S	↑OBS 30	
	R/S (or "E")	MEAN= 9.2069	
	R/S	SDEV=24.0526	
	R/S	N=29	
	R/S	CELL -60--40	
		1:	
		....	Every two stored data gives
		CELL -30--20	one *
		3:*	
		a.s.o.	
		READY	If you want to see the results again without *: CF 01, "E".
			The results won't be viewed They are meant to be written down, press R/S after each result

PROGRAM LISTING

PROGRAMMAUFLISTUNG
LISTAGE DU PROGRAMME
LISTATO DI PROGRAMMA

Line Zeile Ligne Linea	Keystrokes Tastenfolge Touches Tasti	Comments Kommentar Commentaires Commenti	Line Zeile Ligne Linea	Key pressed Tastenfolge Touches Tasti	Comments Kommentar Commentaires Commenti
01	▵ LBL HIS		51	VIEW X	
	CLRG			RCL 08	
	▪ CF 01			X>Y?	
	Σ REG 00			GO TO 00 →	
05	X MIN?		55	RCL 09	
	PROMPT			RCL 07	
	STO 08			X≤Y?	
	X MAX?			GO TO 00 →	
	PROMPT			CLST	
10	STO 07		60	RCL 09	
	INCR?			Σ+	
	PROMPT			LBL 06	
	STO 10			RCL 09	
	1			RCL 08	
15	▪ CF 22		65	−	
	Σ SIZE?			RCL 10	
	PROMPT			/	
	▪ FS? 22			INT	
	▪ SF 01			12	
20	STO 06		70	+	
	RCL 07			1	
	RCL 08			▪ FS?C 02	
	−			←RTN	
	RCL 10			ST+ IND Y	
25	/		75	GO TO 00 →	
	FIX 0			▵ LBL 01	
	STO 10			SET SIZE	
	CLA			1	
	ARCL X			+	
30	⊢ CELLS		80	ARCL X	
	AVIEW			PROMPT	
	PSE			GO TO 00 →	
	▪ SF 25			▵ LBL E	
	12			Σ REG 00	
35	+		85	FIX 4	
	RCL IND X			MEAN	
	▪ FC?C 25			MEAN=	
	XEQ 01			ARCL X	
	▵ LBL 00			PROMPT	
40	FIX 0		90	SDEV	
	ƒOBS			SDEV=	
	RCL 05			ARCL X	
	1			PROMPT	
	+			FIX 0	
45	ARCL X		95	12	
	PROMPT			STO 03	
	▪ FC?C 22			RCL 08	
	GO TO E →			STO 04	
	STO 09			N=	
50	FIX 2		100	ARCL 05	

Please use paper glue to attach listings. Adhesive tape may affect print!
Bitte Listings mit Papierleim einkleben. Klebefilme können Druck bleichen!

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PROGRAM LISTING

PROGRAMMAUFLISTUNG
LISTAGE DU PROGRAMME
LISTATO DI PROGRAMMA

Line Zeile Ligne Linea	Keystrokes Tastenfolge Touches Tasti	Comments Kommentar Commentaires Commenti	Line Zeile Ligne Linea	Key pressed Tastenfolge Touches Tasti	Comments Kommentar Commentaires Commenti
101	PROMPT		51	← RTN	
	Σ REG 11			LBL C	
	LBL 02			• SF 02	
	RCL 04			XEQ 06 ⇄	
05	RCL 07		55	ST- IND Y	
	X≤Y?			CLST	
	GO TO 00 →			RCL 09	
	↑CELL			-	
	ARCL 04			GO TO 00 →	
10	RCL 10		60	LBL 08	
	ST+ 04			READY	
	├-			PROMPT	
	ARCL 04			LBL a	
	AVIEW			Σ REG 00	
15	PSE		65	↗-OBS	
	F=			PROMPT	
	ARCL IND 03			STO 09	
	• FS? 01			GO TO C →	
	XEQ 04 ⇄		169	END	
20	• FC? 01		70		
	PROMPT				
	1				
	ST+ 03				
	GO TO 02 →				
25	LBL 04		75		
	10				
	RCL IND 03				
	CLA				
	ARCL X				
30	├:		80		
	RCL 06				
	/				
	X>Y?				
	TONE 9				
35	X>Y?		85		
	AVIEW				
	X>Y?				
	← RTN				
	INT				
40	STO 09		90		
	X=0?				
	AVIEW				
	X=0?				
	← RTN				
45	LBL 05		95		
	✱				
	DSE 09				
	GO TO 05 →				
	AVIEW				
50	PSE		00		

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REGISTERS, STATUS, FLAGS

REGISTERBELEGUNG, FLAGS, BETRIEBSARTEN
REGISTRES, INDICATEURS, MODES OPÉRATOIRES
REGISTRI, MODI OPERATIVI, FLAGS

Registers Datenspeicher/Registres de données/Registri

00	Σx_2	50
	Σx^2	
	Σy_2	
	Σy^2	
	Σxy	
05	n	55
	* SIZE	
	x max	
	x min	
	OBS/ * counter	
10	increment	60
	no of cells	
15		65
20		70
25		75
30		80
35		85
40		90
45		95
		99

Status Betriebsart/Modes opératoires/Modi operativi

Size VARIABLE Total Reg. _____ User Mode

Eng ☐ Fix ☒ Sci ☐ On ☒

Deg ☐ Rad ☐ Grad ☐ Off ☐

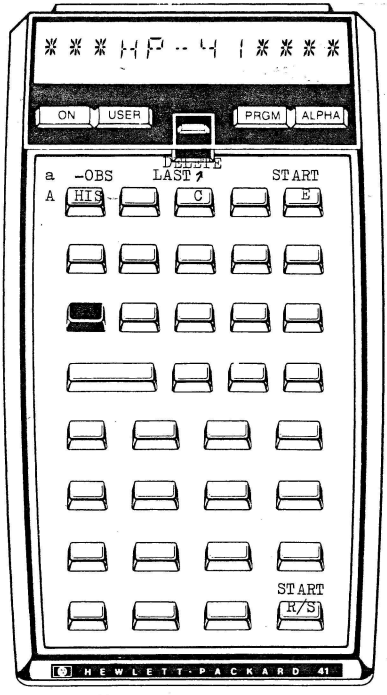
	Purpose (Bedeutung / Signification / Scopo)	Flags SET	Flags CLEAR	
00				
01	* AVIEW	x	x	F=
02	Data correction	x		
03				
04				
05				
06				
07				
08				
09				
10				
11	Audio execute			
12				
13				
14				
15				
16				
17				
18				
19				
20				
21	Printer Enable			
22	Number Input	used		
23	Alpha Input			
24	Range Ignore			
25	Error Ignore	used		
26	Audio Enable			
27	User Mode			
28	Decimal Point	x		
29	Digit Grouping			

Assignments
Tastenbelegung/Assignations/Assegnamenti

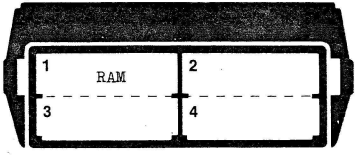
Function (Funktion / Fonction / Funzione)	Key (Taste / Touche / Tasto)	Function (Funktion / Fonction / Funzione)	Key (Taste / Touche / Tasto)
Delete last input	C		
START	R/S,E		
Delete input	a		

SYSTEM CONFIGURATION
CONFIGURAZIONE DEL SISTEMA

Assignments
Belegungen
Assignations
Assegnamenti



Configuration
Belegung
Configuration
Configurazione



Magnetic card
Magnetkarte
Carte magnétique
Scheda magnetica