PPX EXCHANGE

Vol. 4 Number 2 Copyright 1980 March/April 1980

HEROES OF PPX-59: The final tally of programs accepted in 1979 has been taken. PPX would like to give special recognition to the top five contributors of 1979. Each recipient will receive a complimentary one year membership and certificate of achievement. These members are:

Recipient	Location	Areas of Submission
Theodore Bones, Jr.	Princeton, WV	Mathematics
Chorman Ching	Ontario, Canada	Statistics, Mathematics
Jose Miguel G. Garcia	Tijuana, Mexico	Chemistry
Mike Hastings	Fayetteville, AK	Mathematics, Games, Applied Sciences
Barry Tepperman	Ontario, Canada	Statistics, Life Sciences, and many others

The tally of programs accepted was based upon the number that appeared in the D and E addendums. PPX thanks all members who have contributed their program(s) and helped make PPX a successful program exchange.

POTPOURRI

1. Newsletter Notice — As you've noticed by now, there wasn't a January newsletter — but, there was a January/February newsletter. Starting with that issue, we decided to bring out the fact that it was a bi-monthly newsletter.

We've been receiving many telephone calls and letters asking when the newsletter will go out. This is a valid question since there is always a chance for mail to be lost.

PPX plans to have the newsletter in your hands by the first week of the second month of which the Newsletter is dated. (For example, you normally should receive the May/June newsletter in the first week of June.) If problems do arise due to Murphy's law (anything that could go wrong —will), you may receive the newsletter a little later. Because of this, we ask that you do not call or write concerning the mailing of the newsletter until the end of the second month.

2. Addendum Identifier — Each program number listed in the catalog has a suffix letter which identifies the Addendum in which that program abstract can be found. For example, consider program number 948005D:

908005 D ALMANAC DATA FOR STARS
↑ Addendum Identifier (meaning: abstract for this program is found in catalog Addendum D.)

Do not confuse the addendum identifier with the program revision letter. While the addendum identifier appears as part of the program number, the revision letter appears on the special codes line (the line directly underneath the program abstract):

154 STEPS, REVISION B
↑ Program Revision Letter

3. Catalog Errata — PPX has been notified that there are two errors that appear in the addendum to the catalog. Please note the following corrections:

- Fisher's Exact Probability Test/Tocher's Correlation (PPX #228026D), does not require Module 2 as listed in the D addendum. The module required is the Master Library (MOD 1).
- Roulette 59 (PPX #918148E) was written by Walter Koziarz. (Our apologies for misspelling his name). Contrary to the abstract, this program requires a PC-100A/C for operation.

4. Ordering Information — Very often there is a two week time lag between the time you mailed your order and the time PPX receives it. This problem also occurs when a filled order is returned to you. For this reason, please allow 4 to 6 weeks for your order to be delivered from the time that you mailed it.

5. Programming Corner — In an effort to better zero-in on the program needs of our members, "Programming Corner" appears in each issue of the Exchange. In order to close the loop between program producer and user, we have decided to revise the operation of Programming Corner. For more details, see our "New and Revised Programming Corner" inside.

WANTED: TI-59 APPLICATIONS ARTICLES

Editor's Note: The following article asks for your support of the PPX Exchange with regards to applications articles. Your choice of a PPX membership or TI Solid State Software Module is offered for each applications article which is accepted for the newsletter. This offer will also apply to other feature articles.

TI-59 owners seem to keep finding more and more applications for their calculators. Some of the applications that PPX has heard about include security analysis, opthamology, fire control, photography, estate planning, swimming pool water analysis, and life insurance. If you have a particular application which you are using, PPX would like for you to write a general article telling about your system and what benefits it has had for you.

For every article that is chosen to be used in the Newsletter, PPX will let the author choose either a PPX one-year membership or any Solid State Software Module from the PPX catalog.

When submitting an article, please keep to a maximum of 4 typed double-spaced pages. Examples of keystroke sequences should be included to aid the reader where appropriate.

We try to get as much variety as possible into each newsletter. Therefore, publication of articles is sometimes postponed to later issues. By submitting articles of interest to PPX, you will ensure that the PPX Exchange will be as informative as possible.

THE NEW AND IMPROVED PROGRAMMING CORNER

It seems to us here in PPX that our Programming Corner has had its nose in the corner long enough; IT'S TIME FOR A CHANGE! The aim of this column has been to make members of PPX aware of program needs, in order that those needs might be met. Since PPX is not staffed to do custom programming, we would like to provide a little something extra for those members who do fulfill a program need. Here's how it will work:

1. Programs submitted to PPX to fill a Programming Corner request must be accompanied by a short note stating what request (and which Newsletter it appears in) the program was written to fulfill.
2. The program should be received by PPX no later than two months after the last day of the last month of the Newsletter in which the request appeared.
3. All programs received for the same request will be reviewed by PPX, and the author of the program which we consider the best will receive an order form entitling him to a complimentary Solid State Software module of his choice.
4. Other members who submitted acceptable request will be reviewed by PPX, and the author of the program which we consider the best will receive an order form entitling him to a complimentary Solid State Software module of his choice.
5. Other members who submitted acceptable (according to standard PPX criteria, Member's Guide Pg. 3) programs to fill the request will receive an order form entitling them to a complimentary Specialty Pakette of their choice.

According to the above guidelines, we will receive programs to fulfill the following requests until June 30, 1980:

- A program to generate random numbers to other than uniform or normal distributions such as Gamma, Beta, Poisson, Cauchy, or an arbitrary distribution.
- A Weibull function (3 Parameter) Program to calculate the constants from given data.
- A Golf Handicapper Program that uses the Banker's Handicapping Method.

WASHINGTON DC TI CALCULATOR CLUB EXPANDS

In the March 1979 issue of the PPX Exchange (Volume 3 No. 2), we told you about the Washington DC local TI club and published their contribution called WHAT'S YOUR PROGRAMMING POINT OF VIEW? Largely due to our announcement, their membership number climbed dramatically in a very short time. So much so, that they decided to write a newsletter of their own, in order to distribute the many contributions they received from their members. This, in turn, lead to many inquiries from TI calculator enthusiasts from all over the country, and even some from abroad, wanting to join the fun.

Since the beginning of the year, the club has a new, more comprehensive name: The TI PERSONAL PROGRAMMABLE CALCULATOR CLUB. Its newsletter is called the TI PPC NOTES. The newsletter brings programming aids and useful programming routines and tricks. It also publishes selected, well-documented programs. The newsletter supports all the TI programmables, but puts special emphasis on those for which there is normally no support available: the SR-52, the SR-56, the TI-57 and the TI-58.

For more information about the club, write to its editor, well known as a contributor of several articles and programs in our PPX program, Maurice E. T. Swinnen. Please send a self-addressed stamped envelope to TI PPC CLUB, 9213 Lanham Severn Road, Lanham, MD 20801. And bear in mind that the TI PPC CLUB is absolutely non-profit and is not affiliated with nor does it receive any financial help from Texas Instruments, Inc. The club just uses TI programmables because their members are convinced that those programmables are the greatest.

TEXAS INSTRUMENTS PRESENTS: SPECIALTY PAKETTES

With the assistance of Dr. Ken Stephens, UNIDO advisor in Ankara, Turkey, PPX is proud to announce the addition of two new Specialty Pakettes, bringing the total number of Pakettes to 18. These new Pakettes, both dealing with the area of Quality Assurance, are entitled:

	Cat. #
Quality Assurance I/Sampling Plans	9B0017
Quality Assurance II/Control Chart	9B0018

Both Pakettes are entirely self-contained and will provide functional assistance in the area of Quality Control. The QAI/Sampling Plans Pakette offers such programs as an Average Outgoing Quality Limit Sampling Plan and Unit Sequential Sampling Plans; also offered are Continuous and Single Sampling Plans. Contained in the QA II/Control Chart Pakette are programs dealing with average and range, average and standard deviation, and percent or number defective control charts. Pakettes may be ordered by writing the name and catalog number of each pakette on a PPX-59 order form and enclosing $10 for each pakette (plus applicable tax, postage, and handling).

MEMBER # ☐☐☐☐☐☐☐☐☐

NOTICE OF CHANGE OF ADDRESS

In order to ensure uninterrupted service, please submit change of address at least six weeks prior to change. Please mail to:

Texas Instruments, Inc.
PPX Department
P. O. Box 53
Lubbock, TX 79408

NAME: _____

OLD ADDRESS: _____

_____

NEW ADDRESS: _____

_____

EFFECTIVE DATE: _____

PHONE: _____

SUPER MINDBREAKER

How great are your powers of deductive reasoning? This game will let you know while providing hours of mind boggling entertainment. This game is played like Codebreaker (see page IV-101 of your Personal Programming Manual). Super Mindbreaker allows secret codes of up to nine digits and removes the restriction that no digit may be the same, and, therefore, has more possible codes. In fact, this program can have as many as 387,420,489 different codes compared to the 3024 possible codes of Codebreaker.

PPX wishes to thank the author of "Super Mindbreaker", Michael Komninos.

USER INSTRUCTIONS:

1. Enter the number of digits (1-9) to appear in the code and press A.
2. Enter the maximum value (1-9) that is to be allowed for each digit and press B.
3. Enter a random seed number between 1 and 180,000 and press C. It takes the calculator approximately two minutes to initialize the game and pick a secret code.

NOTE: If the "standard" game of five digits, each with a value of up to eight is to be played, steps 1, 2, and 3 above can be replaced by entering a seed number and pressing 2nd A.

4. Enter a guess and press R/S. After a few seconds (about 30 seconds for the "standard" game), the score for the guess just entered is displayed in an X.Y format. X is the number of digits in your guess that appear in the secret code and are positioned correctly. Y is the number of digits in your guess which although correct, are improperly placed. To prevent ambiguity in the case of a repeated digit, the codes are compared on a one-to-one basis (i.e., if the secret code was "121" and the guess was "123", the "1" in the guess will only be compared once against the secret code). A zero in the guess will cause an incorrect result. If a guess is entered with the wrong number of digits, a flashing display will result. To correct this situation, press CE and proceed with a legal guess.
6. Step 4 is repeated until the guess matches the secret code and a perfect score of X.0 (where X is the number of digits in the code) is displayed.

PROGRAM NOTES:

1. The Master Library module must be in the TI-59 prior to running his program.
2. If the program is to be used with the PC-100 A/C print cradle, the following data should be stored in registers 60-66 by pressing 7 OP 17, and entering the data and then repartitioning by pressing 6 OP 17. At this point, the data can be permanently stored on with the program on banks 1 and 2 of a magnetic card.

Data	Register
223036	60
33313736	61
243600	62
3615323517	63
37231700	64
1421735	65
22133017	66

EXAMPLE:

Enter	Press	Display	Comments
5	A	5.	5 Digit Code
5	B	5.	Maximum Digit Value
111054	C	0.	Seed
11234	R/S	1.1	Guess #1
12555	R/S	1.1	#2
52434	R/S	1.3	#3
24524	R/S	4.0	#4
44524	R/S	5.0	Game Over 5 Guesses Required

TI-59 LISTING*

000	91	R/S	023	00	00	046	82	82	069	32	X↕T	092	73	RC*	115	29	29	138	01	01	161	01	01	184	42	STO
001	15	E	024	11	11	047	76	LBL	070	43	RCL	093	04	04	116	32	X↕T	139	57	57	162	32	32	185	01	01
002	76	LBL	025	43	RCL	048	11	A	071	06	06	094	22	INV	117	42	STO	140	43	RCL	163	43	RCL	186	01	1
003	13	C	026	33	33	049	42	STO	072	67	EQ	095	67	EQ	118	08	08	141	08	08	164	34	34	187	00	0
004	71	SBR	027	85	+	050	06	06	073	00	00	096	01	01	119	29	CP	142	22	INV	165	42	STO	188	42	STO
005	02	02	028	01	1	051	91	R/S	074	80	80	097	04	04	120	43	RCL	143	67	EQ	166	04	04	189	02	02
006	58	58	029	95	=	052	76	LBL	075	43	RCL	098	01	1	121	02	02	144	01	01	167	43	RCL	190	02	2
007	02	2	030	32	X↕T	053	12	B	076	00	00	099	44	SUM	122	85	+	145	57	57	168	06	06	191	00	0
008	00	0	031	77	GE	054	42	STO	077	69	OP	100	31	31	123	09	9	146	93	.	169	42	STO	192	42	STO
009	42	STO	032	00	00	055	33	33	078	99	99	101	25	CLR	124	95	=	147	01	1	170	03	03	193	03	03
010	03	03	033	11	11	056	91	R/S	079	81	RST	102	72	ST*	125	42	STO	148	44	SUM	171	97	DSZ	194	73	RC*
011	36	PGM	034	72	ST*	057	76	LBL	080	43	RCL	103	04	04	126	35	35	149	31	31	172	02	02	195	03	03
012	15	15	035	03	03	058	15	E	081	00	00	104	69	OP	127	73	RC*	150	01	1	173	01	01	196	72	ST*
013	71	SBR	036	69	OP	059	42	STO	082	99	PRT	105	34	34	128	35	35	151	94	+/-	174	13	13	197	02	02
014	88	DMS	037	23'	23	060	00	00	083	25	CLR	106	97	DSZ	129	67	EQ	152	64	PD*	175	43	RCL	198	69	OP
015	65	×	038	97	DSZ	061	28	LOG	084	42	STO	107	02	02	130	01	01	153	04	04	176	31	31	199	22	22
016	01	1	039	02	02	062	52	EE	085	31	31	108	00	00	131	63	63	154	61	GTO	177	22	INV	200	69	OP
017	00	0	040	00	00	063	22	INV	086	71	SBR	109	89	89	132	73	RC*	155	01	01	178	52	EE	201	23	23
018	95	=	041	11	11	064	52	EE	087	02	02	110	71	SBR	133	04	04	156	63	63	179	71	SBR	202	97	DSZ
019	59	INT	042	36	PGM	065	59	INT	088	11	11	111	02	02	134	32	X↕T	157	69	OP	180	02	02	203	01	01
020	32	X↕T	043	00	00	066	85	+	089	71	SBR	112	11	11	135	01	1	158	34	34	181	74	74	204	01	01
021	25	CLR	044	61	GTO	067	01	1	090	02	02	113	71	SBR	136	94	+/-	159	97	DSZ	182	43	RCL	205	94	94
022	67	EQ	045	01	01	068	95	=	091	29	29	114	02	02	137	77	GE	160	03	03	183	06	06	206	43	RCL

*Program listing is continued on back page.

SUPER MINDBREAKER (Continued)

207	31	31	256	33	33	305	69	DP	354	04	04
208	22	INV	257	13	C	306	00	00	355	43	RCL
209	58	FIX	258	44	SUM	307	43	RCL	356	68	68
210	81	RST	259	09	09	308	64	64	357	66	PAU
211	43	RCL	260	43	RCL	309	69	DP	358	69	DP
212	00	00	261	06	06	310	02	02	359	06	06
213	42	STO	262	42	STO	311	43	RCL	360	43	RCL
214	32	32	263	02	02	312	63	63	361	61	61
215	09	9	264	07	7	313	69	DP	362	69	DP
216	85	+	265	69	DP	314	03	03	363	04	04
217	43	RCL	266	17	17	315	43	RCL	364	43	RCL
218	06	06	267	25	CLR	316	62	62	365	67	67
219	42	STO	268	42	STO	317	69	DP	366	66	PAU
220	02	02	269	69	69	318	04	04	367	69	DP
221	42	STO	270	06	6	319	69	DP	368	06	06
222	03	03	271	69	DP	320	05	05	369	06	6
223	95	=	272	17	17	321	43	RCL	370	07	7
224	42	STO	273	92	RTN	322	69	69	371	69	DP
225	04	04	274	58	FIX	323	44	SUM	372	04	04
226	42	STO	275	01	01	324	67	67	373	43	RCL
227	34	34	276	99	PRT	325	32	X:T	374	67	67
228	92	RTN	277	22	INV	326	69	DP	375	55	÷
229	01	1	278	58	FIX	327	00	00	376	43	RCL
230	00	0	279	32	X:T	328	43	RCL	377	68	68
231	22	INV	280	07	7	329	61	61	378	95	=
232	49	PRD	281	69	DP	330	69	DP	379	69	DP
233	32	32	282	17	17	331	04	04	380	06	06
234	43	RCL	283	01	1	332	32	X:T	381	06	6
235	32	32	284	44	SUM	333	69	DP	382	69	DP
236	22	INV	285	69	69	334	06	06	383	17	17
237	59	INT	286	43	RCL	335	01	1	384	25	CLR
238	22	INV	287	06	06	336	44	SUM	385	91	R/S
239	44	SUM	288	32	X:T	337	68	68	386	13	C
240	32	32	289	22	INV	338	06	6	387	76	LBL
241	65	×	290	67	EQ	339	69	DP	388	10	E'
242	01	1	291	01	01	340	17	17	389	06	6
243	00	0	292	82	82	341	43	RCL	390	69	DP
244	95	=	293	69	DP	342	31	31	391	17	17
245	32	X:T	294	00	00	343	92	RTN	392	22	INV
246	92	RTN	295	43	RCL	344	76	LBL	393	52	EE
247	76	LBL	296	66	66	345	14	D	394	22	INV
248	16	A'	297	69	DP	346	07	7	395	58	FIX
249	44	SUM	298	03	03	347	69	DP	396	25	CLR
250	09	09	299	43	RCL	348	17	17	397	02	2
251	05	5	300	65	65	349	69	DP	398	96	WRT
252	42	STO	301	69	DP	350	00	00	399	91	R/S
253	06	06	302	04	04	351	43	RCL			
254	08	8	303	69	DP	352	60	60			
255	42	STO	304	05	05	353	69	DP			

FROM THE ANALYST'S DESK

• PPX member Robert Somors has found the following method which saves program steps when two results are required for one input. For instance, when calculating a correlation coefficient, two results, Σx^2 and Σxy, are needed for each x. If Y is stored in R_{00} and X in R_{01}, and the result of Σx^2 and Σxy are to be placed in R_{02} and R_{03}, respectively, then the conventional method of calculation would be:

000	43	RCL
001	01	01
002	33	X^2
003	44	SUM
004	02	02
005	43	RCL
006	01	01
007	65	×
008	43	RCL
009	00	00
010	95	=
011	44	SUM
012	03	03
013	91	R/S

However, if use is made of the pending operations feature of the TI-59, the value of x (R_{01}) need only be recalled once:

000	43	RCL
001	01	01
002	65	×
003	33	X^2
004	44	SUM
005	02	02
006	43	RCL
007	00	00
008	95	=
009	44	SUM
010	03	03
011	91	R/S

The multiplication sign (Step 002) duplicates the contents of the display register into the first hierarchy register. Since the display register contents are not changed, the first result (x^2 SUM 02) can be calculated before the pending multiplication is performed. When the equal sign is encountered, it causes all pending operations to be completed, and the second result is computed. This technique will also save data registers if the input is directly from the keyboard, since a register will not be required for storage of the input.

• For those members who have the Star Trek system, PPX #000001, one correction needs to be made: on page 66 of the system, steps 129 and 130 should read RCL 23 instead of RCL 24.

MEMBERSHIP RENEWALS

Is your membership about to expire? To ensure continued receipt of Addendums, newsletters, and ordering privileges, make certain that this is not the case.

Below is printed the renewal table for members whose one year memberships will soon expire. To find your renewal date, check your membership number against the table shown below. Your membership number corresponds with your required renewal date.

Membership Number	Must be postmarked by:
917909-918664	**May 15**
918665-918854	**June 15**
918855-919517	**July 15**
919158-919468	**August 16**

Members with numbers greater than those listed above will be informed of their renewal dates in a future issue of the PPX Exchange.

A renewal subscription card and reminder will be sent to each member in ample time to renew. The subscription card must be returned with a check or money order for $15. Be sure to include your membership number on both your subscription card and check.

The PPX Exchange is published every other month and is the only newsletter published by Texas Instruments for TI-59 owners. You are invited to submit items you feel are of general interest to other TI-59 users. Inputs should be limited to 3 double-spaced typed pages. Please forward your newsletter inputs and any questions to:

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