Hewlett-Packard Handheld Conference #39

Richard J. Nelson

Introduction

Nashville TN – HP Calculator enthusiasts from five countries⁽¹⁾ converged in Nashville TN to present HP user projects, explore new math methodologies, explain calculator measurements, compare products, share experiences, report on trends, and indulge in personal fellowship. See details in Appendix A.

This is the 39th HHC⁽²⁾ since the first conference was held in Santa Clara CA in September 1979. HHCs follow a standard format which is reflected in the schedule at the Note 2 link. Forty one people registered and 39 of them were in the group photo shown in Fig. 1.



Fig. 1 – Attendees of the 2012 HHC from Canada, England, France, Germany, and the US discuss HP Calculators.

One special aspect of an HHC is the opportunity to directly discuss calculator activities with HP staff members.

How HHCs Happen

The annual HHC Conference is managed by a Committee of six long time and

experienced HP Calculator users. See Fig. 2. The attendees donate from \$0 to \$50 (the

Gene Wright: Registration, genela@comcast.net Richard J. Nelson: Speakers Schedule, Proceedings, rjnelsoncf@cox.net Joseph Horn: Website, mail@frjoe.us Wlodek Mier-Jedrzejowicz: European coordinator, wlodekmj@yahoo.co.uk Jake Schwartz: Videographer, historian, jakes@pahhc.org Eric Rechlin: Dedicated All-Around Helper, eric@hpcalc.org

range for the last ten or more years) to cover *Fig. 2 – HHC 2012 Committee members with responsibilities.*

all expenses which are not known until the conferences starts. It was \$40 this year. Three meals were included – Saturday lunch and dinner and Sunday lunch. Three breaks include soft drinks and chips or crackers.

The date is determined by taking the weekend that follows September 15th (the end of the summer season) that is not in conflict with a religious holiday. Rarely does the HHC occur in October. In recent years the ability to predict the location of the next Conference has been greatly reduced with the economy being what it is. West Coast and Midwest locations seem to be the most popular. Suggestions for 2013 are Chicago, San Diego, and Ft. Collins. Having the Conference in a close-airline-hub-city hotel is the ideal location because all attendees are together for the duration – Friday evening to Monday morning. Serious location discussions are started in January after CES. Interested readers may sign up for the HHC List⁽³⁾ to receive emails related to the Conference and to provide opinions and inputs related to HHC.

HHC Objectives

One of the primary objectives of an HHC is to document the progress and activities of the HP Calculator User Community, HPUC. This is accomplished by recording the presentations made during the Conference with a printed proceedings⁽⁴⁾, and videotaping⁽⁵⁾ the Conference from start to finish. The opening is with each attendee giving his name, where from, interests, etc. as described in the Conference Schedule.

Another primary objective is to have fun.

Information exchange, problem solving, and the discussion of HPUC issues are additional objectives for each HHC.

The annual HHC provides a reporting point or "mission accomplished" opportunity for the HPUC to become aware of various projects large and small. New projects are inspired by old ones, and we have been using the HHC as a stimulus for HP Calculator activity for 34 years.

Who attends an HHC?

Aside from the representatives from HP⁽⁶⁾, who attends an HHC? Obviously a strong interest in calculators and calculation technology is a major attraction to meet with and exchange ideas with the leaders of the HPUC. Everyone has their own interests and we try to provide coverage of them all. Here is one HP Museum comment.

"I felt privileged to finally attend my first HHC, more than 36 years after buying my first HP. It far exceeded my most positive expectations. It is a complete mystery to me how such a quality event can be executed for the extremely low conference fee charged (\$40).

I just wish I hadn't needed to drive so far to get there (93 miles!!!) :-)"

One attendee blogged⁽⁷⁾ about the Conference while it was happening. We had a hotel Wi-Fi connection and several attendees used it during the Conference including Joseph Horn, the HHC webmaster, who updated the Schedule page as we went. I suggest reading the blog links in Note 7 to get another perspective of who attends an HHC - and a another perspective of what happened.

See Appendix A for the details of who attended HHC 2012 and from where.

What was presented at HHC 2012?

The first speaker was Jake Schwartz describing the WP-34S and the HP Calculator Way. Jake discussed the two favorite topics of the HP calculator enthusiast - Wish Lists and HP DifferHP and The Community's Vision Diverges





entiators. He described the model number vs. features in this regard with a curve. See Fig. 3. If the crossover point is the introduction of the HP 49 the time is May 1999. Jake uses HP models to describe the relationship between the HPUC and HP's position at and past the crossover point.

The second speaker was Gene Wright who spotlighted the Conference concern of convergence with a presentation of **Tablets vs. HP Calculators**. Gene described how the most successful tablet, the iPad, introduced on 27 January of 2010 has become extremely popular. The idea is expressed in the cover graphic of the paper shown in Fig. 4. The HP-39gII shown is only representative of its class. The three important realities that were presented: (1) The tablet is being required by an increasing number of educational institutions, (2) The tablet has an unbelievable number of applications being written for it, and (3) The rate of adoption is accelerating.

TABLETS VS HP CALCULATORS





Add to this the fact that most HP Calculators emulators will run on a tablet and it is clear that convergence of tablets and calculators is taking place like an explosion.

The third presentation by Namir Shammas discussed Calculator Root Finding: Scan Range Method. Namir reviewed the root finding applications of previous HP calculators, i.e., HP-65, HP-55, HP-67, HP-25, HP-34C, HP-41, HP-15C, and the solvers of all current machines. The Scan Range Method was compared with traditional methods with several examples and error comparisons.

The fourth presentation, impromptu, was by Roger Hill who demonstrated the Wrongulator. This strictlyfor-fun calculator gives the wrong answer. Of course the challenge was to "reverse engineer" the answers to determine the algorithm it uses to give the wrong answer.

The fifth presentation was by me on Measuring HP Calculator Current. See the details elsewhere in this issue.

The sixth presentation was by Palmer Hanson on Calculating before Calculators. Palmer is an old time calculator user (and collector) of all kinds of machines and we discussed this topic while I was writing the Math Review Series # 4 in *HP Solve* issue 21, November 2010 page 27. He demonstrated and passed around various handheld mechanical calculators, e.g. slide rules and addiators.

The seventh presentation was by Warren Farrow who described and answered questions about his website⁽⁸⁾ dedicated to the HP-41 reminding us that The HP-41 is Alive and Well.

The eighth presentation was by Felix Gross on Where Can you Find the History of Calculator Applications? This is an example of a major project related to HP calculators. The 266 pages of all calculator references is on the Conference USB drive. Felix has identified hundreds of additional references that will be added as time allows. The plot extracted from his paper illustrates this most complete compilation of all calculator references – See Fig. 5 on the next page.

The ninth presentation was by Pavneet Arora on **Re-tooling the Calculating Tool**. Pavneet takes the view that conversion is never complete for several reasons. The cost of failure of the general purpose device is primary. The tablet is a fragile device and special cases are required to ruggedize it.

The tenth presentation was by Katie Wessman describing a Show and Tell – Calculator Quilt for a door prize. Based on the HP-42 this work of art was enjoyed by all.

Publication Year of Calculator Publications



The distribution remained rather unchanged when the sample size of the bibliography was increased from 1000 to over 3000 references. Most new references were found in the databases mentioned in sections 2.2 and 2.3 above.

Fig. 5 – Felix's plot of the number of worldwide calculator related publications vs. time. The peak was in 1980.

The eleventh presentation was by Gene Wright on These are a Few of My Favorite Things. Gene showed his favorite non-HP and non-TI machines from his collection. The exception was a TI prototype that is one of only two known to exist. All were in working order and were passed around for all to see the various milestones in calculator development. Oh, so many batteries!

The twelfth presentation was by Jackie Woldering on Converting HP-41C Programs to PDF - PPC barcode lives on. Jackie was a PPC Chapter coordinator for Cleveland. This is another example of a major project undertaken by the HPUC. He reviewed all of the bar code generating documents and software for creating HP-41 barcode. His project converted the V6N4 to V10N4 articles with HP-41 programs to PDF files – all of which are on the HHC 2012 USB drive. This project strongly contributes to the purpose of an HHC and Jackie will continue "until the end" as time allows.

The thirteenth presentation was by Eric Smith on Even Larger Scaled Reptiles of the Nordic Countries. This Do It Yourself, DYI, calculator $project^{(9)}$ is getting ever closer to a final physical and feature design.

The fourteenth presentation by Namir Shammas on Curve Fitting with Least Squares Relative Errors. This "new" Algorithm is in competition to that of the classic Gauss method.

The fifteenth presentation by Wlodek Mier-Jedzejowicz on Is it Really a Pathetic Name? The alternate meaning to RPN is from a book ⁽¹⁰⁾ with a section by Bill Wickes who provided "reflections on the RPN wars." Wlodek serves on the HHC committee as the European Coordinator and as his name reflects he is Polish. Since his family is firmly rooted in Poland and the name is based on the work of Jan Łukasiewicz he has several "connections" to Jan and his historical work. All of this was covered by Wlodek during his unique HHC presentation.

The sixteenth presentation by Namir Shammas on Variable Sampling Integration reviews numerical integration and offers a new technique for obtaining a more accurate result.

HP Solve # 29 Page 14

The seventeenth presentation by Rick Furr on The Making of The HPV2 Poster was a fascinating mixture of describing his website and his remaking of the most useful poster available covering all of HP's calculators. See additional information on Rick below in the Competition winners section.

The eighteenth and last presentation (impromptu) by Jackie Woldering was on the **Raspberry Pi**. This low cost working \$35 Linux computer circuit board – shown in a \$15 plastic case – provides the next generation of computer experimenters a "breadboard" to test various I/O methods and interfacing with networks. Jackie described a 64 board super computer for a cost of \$4,096. A UK engineer built the super computer using a Lego rack mounting scheme.

See note 11 for additional links for this state-of-the-art very small computer.



Fig. 6 – Raspberry Pi computer circuit board photographed at HHC 2012.

Competition winners

One of the standard activities of an HHC is voting for the best speaker on Sunday afternoon. The attendee voted best speaker winner this year was Rick Furr for his presentation on The Making of The HPV2 **Poster**. As the winner Rick was the first to pick from the nearly 80 door prizes donated this year. The certificate was not delivered to any of the winners and Eric Rechlin snail mailed them to the three winners.

The second and third pick from the door prize tables were the two programming Contest winners. Dave Hayden won the RPN programming contest and Bill Butler won the RPL programming contest. See appendix B for more programming contest information.

Door prizes

Every year we accept door prizes from HP, dealers, and attendees. On Sunday, when we are sure that we have all of them, we separate the more expensive, unusual, and rare items which are put into a separate group we call the premium group.

The two groups, door prizes and premium door prizes are given to competition winners and the attendees by random drawing. Fig. 7 shows the two Fig. 7 – Door prize tables. The premium group is in the door prize tables.



corner behind Felix Gross.

The competition winners get first pick from the door prizes. The remainder of the door prizes is drawn at random using the tickets that are provided at registration. Winners who may have to leave early may appoint a remaining attendee to select and get the prize to the winner. Gene confirms the names when the numbers are called.

When the door prizes are given all the tickets are put back into the pot to be randomly drawn to give out the premium door prizes. In this way everyone gets a chance at these prizes as well.

Horse trading is often done during this process as well as after the Conference.



Fig. 8 – Premium door prizes. See list in appendix B.



Fig. 9 – Calculator Quilt by Katie Wessman.

HHC Websites

The HHC website is created (from scratch using raw HTML programming) and maintained by Joseph K. Horn. You may visit 14 past websites at: <u>hhuc.us</u> These websites also serve to record the work of the HPUC. An especially nice aspect of these websites are the annotated photos of the conferences. These are indicated by the photo file symbol at the left of each HHC logo. The white on black logo is the PPC style logo used since the HP 65 Users Club changed its name to PPC.



Freebe table

We had a freebe table this year where attendees bring their surplus items to give them to a new user who will give them a good home. This year we had a varied number of these items. Here are a few I remember. Jackie Woldering had a box of squeeze flashlights so everyone would never be in the dark, batteries not required. He also had a number of pocket Frensnel lenses for reading small print. I brought extra copies of previous Conference proceedings. Vern Lindsay brought a stack of non-working HP-48's for those who needed spare parts.

Conference materials

HP Solve # 29 Page 16

The Conference materials are provided in a Tyvek® 12" x 15.5" envelope with a registration number on its label. The envelope contained the representative proceedings, an article by Joseph Horn, and the schedule. It also had a USB drive as shown in Fig. 10 with the Programming Contest rules. The numbered blue door prize ticket was also in the envelope



Eric Rechlin provided a CD of his website, <u>http://www.hpcalc.org</u>. This *Fig. 10 – USB Drive with all* is an excellent reference of a broad range of HP calculator information. *HHC 2012 related files.*

Post Conference

Eric Rechlin took videos of the individual presentations. All of Eric's HHC videos may be found at: <u>http://www.youtube.com/user/hpcalcorg</u>. Below are the HHC 2012 links to each presentation.

- 1. Jake Schwartz, WP-34S and the HP Calculatgor Way
- 2. Gene Wright, Tablet s vs. HP Calculators
- 3. Namir Shammas, Root Finding: Scan Range Method
- 4. Roger Hill, The Wrongulator Calculator
- 5. Richard J. Nelson, Measuring Calculator Current
- 6. Palmer Hanson, Calculating Before Calculators-
- 7. Warren Farrow, The HP-41 is Alive and Well
- 8. Felix Gross, Where Can you History of Calculators?
- 9. Pavneet Aora, Re-tooling the Calculating Tool
- 10. Katie Wessman, Show and Tell (her HP-42S Quilt)
- 11. Gene Wright, These are a few of My Favorite things
- 12. Jackie Woldering, Converting HP-41 Programs to PDF
- 13. Eric Smith, Even Larger Scales Reptiles of the Nordic
- 14. Namir Shammas, Least Squared Relative Errors
- 15. Wlodek Meir-Jedzejowicz, Is it a Really Pathetic Name?
- 16. Namir Shammas, Variable Sampling Integration
- 17. Rick Furr, The Making of The HPV2 poster
- 18. Jackie Woldering, The Raspberry Pi

http://www.youtube.com/watch?v=eSyfg8bzqow http://www.youtube.com/watch?v=nPz0nFwmjTo http://www.youtube.com/watch?v=bJxxrCRxhq8 http://www.youtube.com/watch?v=bylWsxbftqc http://www.youtube.com/watch?v=sf5GaceWYK0 http://www.youtube.com/watch?v=_F5sr1ipTkU http://www.youtube.com/watch?v=g3Iv2h4Lv0M http://www.youtube.com/watch?v=kXQBV5h_SxE http://www.youtube.com/watch?v=kXQBV5h_SxE http://www.youtube.com/watch?v=E0ftRUtXGrI http://www.youtube.com/watch?v=e0ftRUtXGrI http://www.youtube.com/watch?v=qRrAj-GCTQM http://www.youtube.com/watch?v=dMz1a4JQ_oc http://www.youtube.com/watch?v=zJA_kPC137I http://www.youtube.com/watch?v=ij_0FE-LRXg

http://www.youtube.com/watch?v=R S-6rT5BzI

http://www.youtube.com/watch?v=Zpf4u2K7Uow http://www.youtube.com/watch?v= rntYYhzBgA

Two old combatants meet

Some years ago I published an HP-TI challenge. The two final contenders in this challenge met at HHC 2012. Here is how the TI-59 Accomplishments website describes the challenge.

Printing a year's calendar does not sound like a big deal, but the friendly competition between the TI-59 and the HP-41C owners produced masterpiece programs. The contest started in May 1978, when Jaren Weinberger and Lou Cargile wrote a TI-59 program able to print a calendar in 34 minutes. Panos Galidas managed to cut that time to 5.5 minutes, but Roger Hill's HP-41C program, published in July-August 1980 issue of PPC Journal, produced a calendar in 2 minutes 17 sec (to be honest, HP-41C printout looked better). After many iterations, Palmer Hanson wrote a fast mode calendar-printing program that seemed unbeatable - 1 minute 32 sec (read Palmer Hanson's story about those programs). Yet, Roger Hill finally won the contest with 1 minute 14 sec HP-41C program. Well, win some, lose some...

It seems that Roger's program won because he realized that the printer speed was the limitation and he structured his program to have the printer always print. See Fig. 11 and Fig. 12. Roger is on the left, Palmer is on the right. *HP Solve* readers will also recognize Palmer as a regular contributor.



Fig. 11 – Roger and Palmer relive the "challenge."

Fig. 12 – The winner, 1m 14s, has the biggest smile.

Observations and conclusions

The weak economy was felt more strongly this year, but we still had a respectable turn out in a part of the country that we haven't been to very often. This may be seen from the list of previous Conferences as given in Note 2. We had several attendees that we haven't seen for many years as well as five first time attendees. Several major projects were presented; Felix's worldwide Calculator publication list, Eric's DIY calculator, and Jackie's HP-41 program barcode "clean up" project of PPC Calculator Journal articles. Rick Furr's high quality HP Calculator Poster involved a number of special techniques to produce, and his presentation was voted as best speaker. Our thanks go to HP for their support of this Conference. We had a good crop of door prizes and the most common comment I heard was, "It went by so fast." That is how it usually happens when you have so much fun.

X <> Y,

Richard

Notes - Hewlett-Packard Handheld Conference #39

- (1). An attendee list with home country may be found at <u>http://hhuc.us/2012/reglist.htm</u>
- (2). A list of past conferences may be found at: <u>http://hhuc.us/2012/conflist.htm</u> All of the most recent conference websites (1999 2012) may be found at: <u>hhuc.us</u> An updated (as it happened) schedule of the speakers and topics may be found at: <u>http://hhuc.us/2012/schedule.htm</u>
- (3). The HHC list is maintained by Eric Smith and Conference related information is (also archived) at the Brouhaha website at: <u>http://lists.brouhaha.com/mailman/listinfo/hhc</u>. Sign up to be on the list for the latest information related to HHCs. Most list activity is just before or just after a Conference.
- (4). Printing a hundred pages of proceedings is rapidly becoming counterproductive in this age of the internet and personal websites. In 2008 we used a USB drive to provide the Conference materials by writing the contents on Friday afternoon to be given in the Conference Tyvek® envelope used to contain the CD's, printed materials, badges, programming contest challenge and rules, door prize ticket, etc. We did the same this year because one document, Where can you find the history of calculator applications" is 266 pages. Everyone brings a laptop so copying 50 USB drives doesn't take very long. Still all available materials are available at that time for several reasons. Since we do not use the USB Drive during the Conference it may be better to snail mail the drive after the Conference concludes to insure that all files are complete Power Point Presentations, pdfs of the papers, reference materials, software, photographs, etc. A 1 GB capacity is adequate.

- (5). Jake Schwartz video tapes the conference and makes the videos available on DVD's. He has done this since HHC 1986. The list and videos are available at: <u>http://www.pahhc.org/video.htm</u>
- (6). A list of HP managers and engineers who have attended HHCs may be found at: <u>http://hhuc.us/2012/hp.htm</u>
- (7). The blog by Eddie Shore mentioned on the HP Museum is at: Day 1 blog. <u>http://edspi31415.blogspot.com/2012/09/hhc-2012-day-1-summary-9222012.html</u> Day 2 blog. <u>http://edspi31415.blogspot.com/2012/09/hhc-2012-day-2-summary-9232012.html</u>
- (8). See his website at: <u>http://www.hp41.org/Intro.cfm</u>
- (9). Eric Smith further describes his Do It Yourself, DIY, calculator on the HP Museum at: http://www.hpmuseum.org/cgi-sys/cgiwrap/hpmuseum/forum.cgi?read=231748#231748
- (10) The book is RCL 20.which may be found at: http://www.limov.com/rcl20/

Bill Wickes' article may be found on page 105.

Many (22) of the HPUC leaders contributed to this book.



Fig. 13 – RCL 20 book records the people history of HPCC.

(11) See the primary link at: <u>www.raspberrypi.org</u>. Newark and Allied carries the board: <u>www.newark.com</u> or <u>www.alliedelec.com</u>. The Supercomputer may be seen at several websites: <u>www.engadget.com/2012/09/13/supercomputer-built-from-raspberry-pi-and-lego/</u> <u>http://news.cnet.com/8301-17938_105-57513107-1/supercomputer-clicked-together-from-legos-and-raspberry-pis/</u>

Appendix A - HHC 2012 Attendance – Page 1 of 1

By Country:

- 1. Canada . . . 2
- 2. England....1
- 3. France . . . 1
- 4. Germany. . . 2
- 5. USA......<u>35</u> Total 41

Official Group Photo

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By US State:

AL	Alabama	1		
AZ	Arizona	1		
CA	California	3		
CO	Colorado	2		
GA	Georgia	1		
IA	Iowa			
ID	Idaho			
IL	Illinois			
MI	Michigan			
NV	Nevada			
NJ	New Jersey			
NY	New York	1		
NC	North Carolina			
OH	Ohio			
OK	Oklahoma			
OR	Oregon			
TN	Tennessee			
ТΧ	Texas			
VA	Virginia			
WA	Washington	1		
	20 State Total	35		

Four wives attended as may be seen in the official photo.

Missing from the photo are #4 and #26 wives on the registration list at the right.

HHC 2012 Attendees 39 of these are in the official group photo.

	Name (A–Z)	From	Presentation Title
1.	Olivier Arbey	WA	
2.	Pavneet Arora	Canada	"Re-tooling the Calculating Tool"
3.	Bill Butler	Canada	
4.	Brenda (Tis) Chrapkiewcz	MI	
5.	Thomas Chrapkiewcz	MI	
6.	Warren Furlow	GA	"The HP-41 is Alive and Well"
7.	Rick Furr	VA	"The Making of The HPv2 Poster"
8.	Felix Gross	Germany	"Where can you find the history of calculator applications?"
9.	Palmer Hanson	NC	"Calculating Before Calculators"
10.	David Havden	NJ	
11.	Tom Hearn	NC	
12.	Roger Hill	IL	
12	Joseph Horn	CA	
1/	Brion Keller	NY	
15	Matt Kernal	OR	
16	Thomas Kline	IA	
17	Vern Lindsay	ID	
18	Lora Marschall	OK	
10.	Peter Marschall	OK	
19. 20	Włodek Mier-Jedrzejowicz	England	"Is It Really a Pathetic Name?"
20. 91	Mike Morrow	ΔL	is it icearly a raticule ivanic.
-1.			("Tablets vs. HP Calculators" (w/ Gene Wright)
22.	Richard Nelson	AZ	and "Measuring Calculator Current"
22	Bob Patton	TX	
-0. 91	Cam Patton	TX	
25.	David Ramsey	NV	
26.	Mary Ramsey	NV	
27.	Philip Reagan	TX	
28.	Eric Rechlin	TX	
20	Günter Schink	Germany	
20	Jake Schwartz	NJ	"WP-34S and the HP Calculator Way"
.			Calculator Root Finding: Scan Range Method"
31.	Namir Shammas	VA	and "Variable Sampling Integration"
32.	Eddie Shore	CA	
33.	Eric Smith	CA	"Even Larger Scaled Reptiles of the Nordic Countries"
34.	Patrice Torchet	France	
35.	Jeff Turner	OH	
36.	Brian Walsh	IL	
37.	Katie Wessman	CO	
38_	Tim Wessman	CO	"Promoting Healthy Foliage Growth in Gymnosperms"
			Converting HP-41C Programs to PDF"
39.	Jackie Woldering	OH	and "The Raspberry Pi"
40.	Mary Woldering	OH	
41.	Gene Wright	TN	"These Are a Few of My Favorite Things"
	0		v v

Appendix B - HHC 2012 RPL Programming Contests – Page 1 of 3

September 22-23, 2012, Nashville

Problem Description: In the diagram below, each small circle has non-negative integer coordinates in the usual Cartesian coordinate system. You can move from one circle to another following the path denoted by the arrow symbols.

To move from (0,3) to (3,0), you have to pass through (1,2) and (2,1) then you arrive at (3,0), so this journey takes 3 "steps."

In this problem, you must compute the minimal number of steps needed to go from a given source circle to a given destination circle.

Input: Each test case consists of three integers, x_1 , y_1 , x_2 , y_2 where each value is less than 1,000,000. These will be loaded as follows: x_1 ENTER y_1 ENTER x_2 ENTER y_2 then R/S.

Output: Return the minimum number of steps required with the sign of the answer indicated forward steps (positive) or backward steps (negative).

Sample Cases:

(A) Input of 1 ENTER 0 ENTER 1 ENTER 1 R/S should return 3.(B) Input of 4 ENTER 0 ENTER 3 ENTER 0 R/S should return -4.



Machines Eligible: This contest is open to any and all RPN machines: Fig. 1 - Trav

15c, 15c+, 15c LE, 34S, 41CL, 42S, 67, 65, etc. RPL users are welcome to try the problem, but this is for RPN machines only.

The winner will be the program that a) returns correct answers, b) has the shortest number of steps x speed in seconds, or c) if the speed is in the judge's sole opinion, nearly identical, the shortest routine.

Rules: (aka the fine print)

- 1) The decision of the judge is FINAL. No appeals are allowed to anyone or anything.
- 2) The purpose of this contest is to have fun and learn.
- 3) At least two contestants must submit an entry.
- 4) No custom built ROM or machine code can be built and used for this problem. Any already existing functionality in the machine is ok.
- 5) You must submit a machine with your program already keyed in to the judge AS WELL as a legible listing of your program with your name on the listing AND the machine. Machines with no names that are given to the judge are assumed to be <u>gifts</u> to the judge. Thank you!
- 6) Submission must be made by the end of the contest (Time is TBA).
- 7) Assume the program will start running with step 001 and/or a R/S.
- 8) By submitting a program, you agree to allow it to be shared with the community.
- 9) This is a contest between individuals, not teams. One submittal <> one person.
- 10) You may not access the internet for any help in any fashion. Do not cheat in any way. Do not check the HP Museum Forum either.
- 11) You must be present to win.
- 12) If a point is unclear, ask immediately. No excuses for ignorance. Clarifications will be shared with the entire group during the conference.
- 13) Assume default machine settings. Your program must stop with the default settings in place.
- 14) Winner will be the program with the fastest times over the test cases giving correct results. If in the judge's sole discretion, two entries are "about the same speed," the winner will be the shortest routine. In case of a tie, the most elegant solution (according to the judge) wins.
- 15) The purpose of this contest is to learn and have fun. Happy Programming.

Appendix B - HHC 2012 RPL Programming Contest – Page 2 of 3

September 22-23, 2012, Nashville

Problem Description: The diameter of a set of points on the plain is the distance between its two most widely separated points. For example, the diameter of this set of points (1,1) (0,0) (2,3) (3,4) (1,0) is 5, which is the distance between (0,0) and (3,4). Given a set of points, compute its diameter.

Input: Each test case consists a list of up to 10 pairs of numbers. Each value in the list will be less than 10,000 in absolute value. The list will contain at least one pair of numbers and will always contain a multiple of 2 numbers, i.e., there will not be 3 values in the list.

Output: Return the diameter.

Sample Case: Input of { 1 1 0 0 2 3 3 4 1 0 } should return 5.

Machines Eligible: This contest is open to any and all RPL machines.

Rules: (aka the fine print)

- 1) The decision of the judge is FINAL. No appeals are allowed to anyone or anything.
- 2) The purpose of this contest is to have fun and learn.
- 3) At least two contestants must submit an entry.
- 4) No custom built ROM or machine code can be built and used for this problem. Any already existing functionality in the machine is ok. Sysevals, etc are allowed.
- 5) Your program must be transferred to the judge's machine under some identifying three-letter name before the announced deadline and you must also submit a legible listing of your program with your name on the listing.
- 6) Submission must be made by the end of the contest (Time is TBA).
- 7) By submitting a program, you agree to allow it to be shared with the community.
- 8) This is a contest between individuals, not teams. One submittal <> one person.
- 9) You may not access the internet for any help in any fashion. Do not cheat in any way. Do not check the HP Museum Forum either.
- 10) You must be present to win.
- 11) If a point is unclear, ask immediately. No excuses for ignorance. Clarifications will be shared with the entire group during the conference.
- 12) Assume default machine settings. Your program must stop with the default settings in place.
- 13) The winning program will be the one for which size*speed (bytes*sec) is least, where the speed of execution will be determined for one or more test cases chosen by the judge.
- 14) The program must be a (self-contained) single object in user code which does not call itself by name.
- 15) Default flag settings (except for flag –95) are assumed and must be restored if changed.
- 16) The stack, apart from input and output, must be left as found.
- 17) The program must not contain KILL or otherwise interfere with the programmatic testing and evaluation of submissions, i.e., you cannot delete everything on the judge's machine except your own program!
- 18) Happy Programming.

HP Solve # 29 Page 22

Appendix B - HHC Programming Contest Results – Page 3 of 3

HHC Programming Contest Winners

- 1. RPN programDavid Hayden
- 2. RPL program Bill Butler

HP Museum Programming Contest Winner

1. RPN Program Paul Dale

HHC 2012 Premium Door Prize Winners

1. HP 48GX (new packaged) Namir Shammas 2. HP 48GX Gene Wright 3. HP-15C Clone Jeff Turner 4. Repurposed 30b (WP34S) Oliver Arbey 5. 82240B IR Printer Brion Keller 6. HP-71B David Hayden 7. Griffin Universal Remote Pavneet Arora 8. iPod Touch in belt case Rick Furr 9. Aristo Slide Rule **David Ramsey** 10. Calculator Quilt Mary Woldering