

Baker Bridge Hand Extraction Workflow

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Including Handouts PDF generation

Goals

- Extract lesson hands from BakerBridge website:
 - Extract hands, auctions, opening leads, and analysis
 - Annotate analysis to show progression of prompts and display
 - Eventually extract cardplay, for subjects like Squeezes
 - In the present form, the hand information is tightly interwoven with HTML syntax
- Make the lesson hands available in other forms:
 - PBN files
 - Rotations for face-to-face, single-user, and two-user
- Make the hands available for a future replica of the web interface
 - But data-drive, so it will be easy to add additional hands
 - Will also be easy to modify Two Over One section to include prompts and display

Controls for Guided Walkthrough

- Embedded tags in the Analysis are used to control display and pacing:
 - [Display South]
 - What would you bid now? [BID 1NT]
 - Press Next to see all hands [NEXT]
 - [Play card-list]

Sample Before/After

```
<a name="2"></a>
<br>&nbsp;
<table style="width:95%; table-layout:fixed">
<tr>
<td style="valign:top; width:6em"><b>Deal 1</b><br>&nbsp;<br>&nbsp;<br>&nbsp;</td>
<td style="width:6em">
&spades; J 8 <br>
<span class="red">&hearts;</span> A 9 8 <br>
<span class="red">&diamonds;</span> 8 6 5 3 <br>
&clubs; A K Q
</td>
<td style="width:6em">&nbsp;</td>
<td rowspan="3" valign="top">


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| <b>WEST</b><br>&nbsp;<b>NORTH</b><br>&nbsp;<b>EAST</b><br>&nbsp;<b>SOUTH</b></td> <td>&lt;tr&gt; <td &gt;&amp;diamonds;&lt;="" &gt;&lt;="" &gt;1&lt;span="" &gt;int&lt;="" &gt;pass&lt;="" <="" <td="" <tr&gt;="" align="center" class="red" span&gt;&lt;="" table="" td&gt;="" tr&gt;=""> &lt;br&gt; Do not be tempted to say 2&lt;span class="red"&gt;&amp;diamonds;&lt;/span&gt;, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit. &lt;br&gt;&lt;br&gt; Instead you bid 1NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes. &lt;br&gt;&lt;br&gt; South plays 1NT. West leads the &amp;spades;4. East wins the &amp;spades;9. West takes his &amp;spades;K and leads another &amp;spades;, East discarding a &lt;span class="red"&gt;&amp;hearts;&lt;/span&gt;. &lt;br&gt;&lt;br&gt; Make a Plan, then click&lt;a href="#3"&gt;&amp;nbsp;&lt;b&gt;NEXT&lt;/b&gt;&lt;/a&gt;. &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;&amp;nbsp;&lt;/td&gt; &lt;td&gt; &lt;td align="left"&gt;&lt;img src=".../t1.gif"/&gt;&lt;/td&gt; &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;&amp;nbsp;&lt;/td&gt; &lt;td align="top" height="800px"&gt; &amp;spades; Q 5 3 &lt;br&gt; &lt;span class="red"&gt;&amp;hearts;&lt;/span&gt; 7 6 2 &lt;br&gt; &lt;span class="red"&gt;&amp;diamonds;&lt;/span&gt; A K 4 &lt;br&gt; &amp;clubs; 8 7 4 2 &lt;/td&gt; &lt;/tr&gt; &lt;/table&gt;</td></td> | <tr> <td &gt;&amp;diamonds;&lt;="" &gt;&lt;="" &gt;1&lt;span="" &gt;int&lt;="" &gt;pass&lt;="" <="" <td="" <tr&gt;="" align="center" class="red" span&gt;&lt;="" table="" td&gt;="" tr&gt;=""> &lt;br&gt; Do not be tempted to say 2&lt;span class="red"&gt;&amp;diamonds;&lt;/span&gt;, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit. &lt;br&gt;&lt;br&gt; Instead you bid 1NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes. &lt;br&gt;&lt;br&gt; South plays 1NT. West leads the &amp;spades;4. East wins the &amp;spades;9. West takes his &amp;spades;K and leads another &amp;spades;, East discarding a &lt;span class="red"&gt;&amp;hearts;&lt;/span&gt;. &lt;br&gt;&lt;br&gt; Make a Plan, then click&lt;a href="#3"&gt;&amp;nbsp;&lt;b&gt;NEXT&lt;/b&gt;&lt;/a&gt;. &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;&amp;nbsp;&lt;/td&gt; &lt;td&gt; &lt;td align="left"&gt;&lt;img src=".../t1.gif"/&gt;&lt;/td&gt; &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;&amp;nbsp;&lt;/td&gt; &lt;td align="top" height="800px"&gt; &amp;spades; Q 5 3 &lt;br&gt; &lt;span class="red"&gt;&amp;hearts;&lt;/span&gt; 7 6 2 &lt;br&gt; &lt;span class="red"&gt;&amp;diamonds;&lt;/span&gt; A K 4 &lt;br&gt; &amp;clubs; 8 7 4 2 &lt;/td&gt; &lt;/tr&gt; &lt;/table&gt;</td> | <br> Do not be tempted to say 2<span class="red">&diamonds;</span>, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit. <br><br> Instead you bid 1NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes. <br><br> South plays 1NT. West leads the &spades;4. East wins the &spades;9. West takes his &spades;K and leads another &spades;, East discarding a <span class="red">&hearts;</span>. <br><br> Make a Plan, then click<a href="#3">&nbsp;<b>NEXT</b></a>. </td> </tr> <tr> <td>&nbsp;</td> <td> <td align="left"></td> </td> </tr> <tr> <td>&nbsp;</td> <td align="top" height="800px"> &spades; Q 5 3 <br> <span class="red">&hearts;</span> 7 6 2 <br> <span class="red">&diamonds;</span> A K 4 <br> &clubs; 8 7 4 2 </td> </tr> </table> |
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Deal 1

North Deals	♠ J 8 6	♠ A 9
None Vul	♥ A 9 8	♥ Q 10 5 4
	♦ 8 6 5 3	♦ Q J 10 2
	♣ A K Q	♣ J 10 3

♠ K 10 7 4 2	N	♠ A 9
♥ K J 3	W	♥ Q 10 5 4
♦ 9 7	E	♦ Q J 10 2
♣ 9 6 5	S	♣ J 10 3

14	♠ Q 5 3
7 10	♥ 7 6 2
9	♦ A K 4
	♣ 8 7 4 2

West	North	East	South
	1♦	Pass	1NT
Pass	Pass	Pass	
1NT by South			
Lead: ♠ 4			

You are South and it is your bid. Decide what you would say, then click on BID. [BID 1NT]

Do not be tempted to say 2♦, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit.

Instead you bid 1NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes.

South plays 1NT. West leads the ♠ 4. East wins the ♠ A, then plays the ♠ 9. West takes his ♠ K and leads another ♠, East discarding a ♥.

Make a Plan, then click NEXT. [NEXT]

To make a PLAN for a Notrump contract you should count your winners.

Winners: ♠ 1 : ♥ 1 : ♦ 2 : ♣ 3 : Total = 7

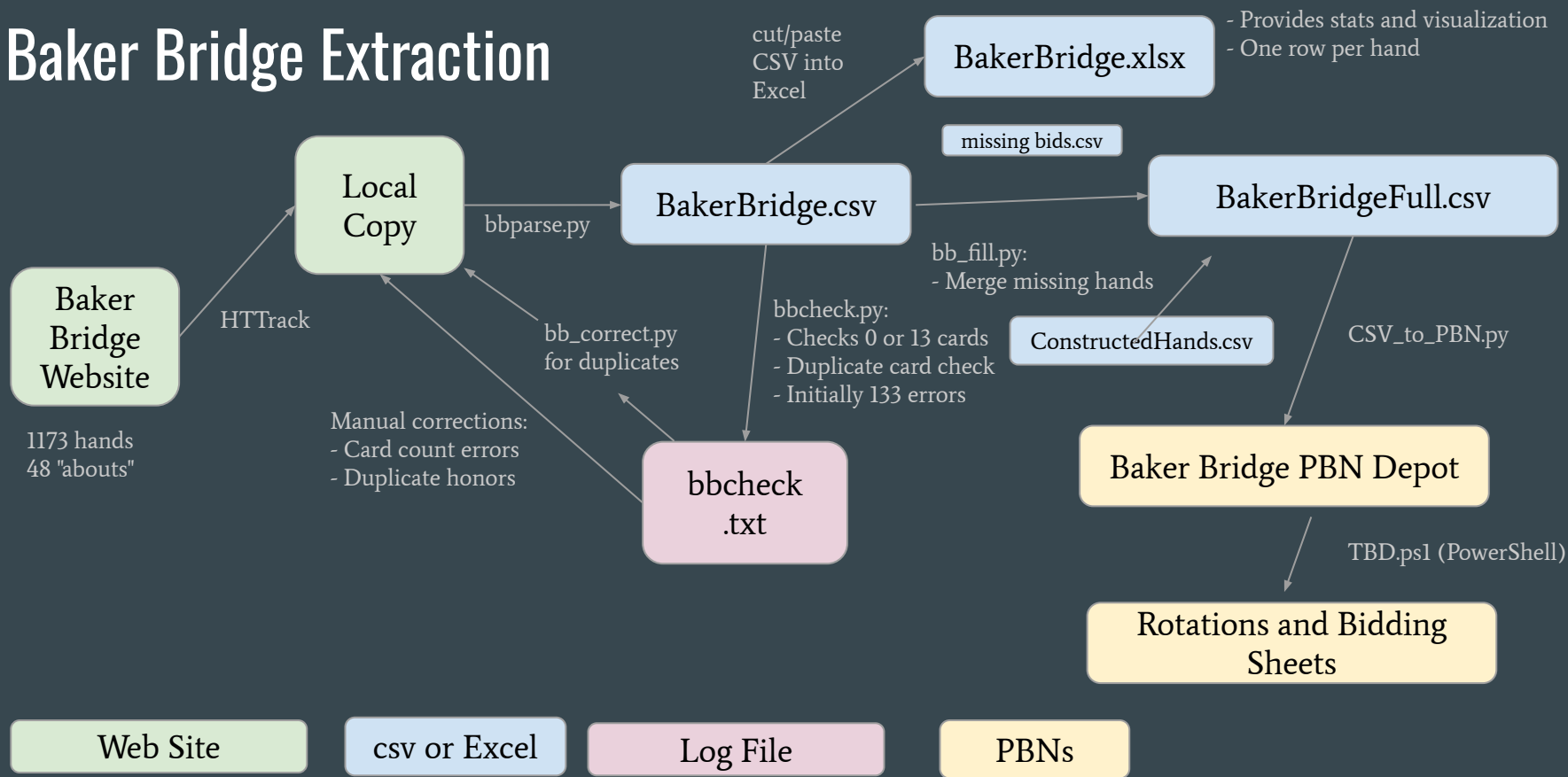
For this deal you see that you already have all the winners you need to make the contract. So you just want to be sure you don't do something stupid that would jeopardize those winners.

You win the ♠ Q, then lead to the ♠ A, ♠ K, ♠ Q. Everybody follows suit to these three tricks. Next you take the ♦ A. Then you play a small ♦ to your ♦ K, then play your ♦ A. You have now won your required 7 tricks, but you have a bonus. Since all the ♣s except the ♣ 8 have been played your ♣ 8 is now high and you make an overtrick.

Click NEXT to see the complete deal. [NEXT]

But even with this type of hand you should make sure you take them in the right order. Here, if you had played the ♦ A and ♦ K BEFORE you played the ♠ A K Q you would have had no entry back to the fourth ♣ in your hand. In this case it was only an overtrick, in other deals it could make the difference between making and going down.

Baker Bridge Extraction



CSV Format

Columns: Subfolder, Filename, DealNumber, Kind, NorthHand, EastHand, SouthHand, WestHand, Dealer, Auction, Contract, Declarer, Lead, Analysis

Sample row:

100Deals,deal001.html,1,BID+NEXT,S;J86 H:A98 D:8653 C:AKQ,S:A9 H:QT54 D:QJT2 C:JT3,S:Q53 H:762 D:AK4 C:8742,S:KT742 H:KJ3 D:97 C:965,North,1D pass 1NT | pass pass pass,1NT,South,S4,"You are South and it is your bid. Decide what you would say, then click on BID. [BID 1NT]\nDo not be tempted to say 2!D, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit.\nInstead you bid 1NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes.\nSouth plays 1NT. West leads the !S4. East wins the !SA, then plays the !S9. West takes his !SK and leads another !S, East discarding a !H.\nMake a Plan, then click NEXT. [NEXT]\nTo make a PLAN for a Notrump contract you should count your winners.\nWinners: !S 1 : !H 1 : !D 2 : !C 3 : Total = 7\nFor this deal you see that you already have all the winners you need to make the contract. So you just want to be sure you don't do something stupid that would jeopardize those winners.\nYou win the !SQ, then lead to the !CA, !CK, !CQ. Everybody follows suit to these three tricks. Next you take the !HA. Then you play a small !D to your !DK, then play your !DA. You have now won your required 7 tricks, but you have a bonus. Since all the !Cs except the !C8 have been played your !C8 is now high and you make an overtrick.\nClick NEXT to see the complete deal. [NEXT]\nBut even with this type of hand you should make sure you take them in the right order. Here, if you had played the !DA and !DK BEFORE you played the !C A K Q you would have had no entry back to the fourth !C in your hand. In this case it was only an overtrick, in other deals it could make the difference between making and going down."

Sample PBN (viewed with BridgeComposer)

Deal 1
 North Deals
 None Vul

♠ K 10 7 4 2
 ♥ K J 3
 ♦ 9 7
 ♣ 9 6 5

♠ J 8 6
 ♥ A 9 8
 ♦ 8 6 5 3
 ♣ A K Q

♠ A 9
 ♥ Q 10 5 4
 ♦ Q J 10 2
 ♣ J 10 3

♠ Q 5 3
 ♥ 7 6 2
 ♦ A K 4
 ♣ 8 7 4 2

West North East South
 1 NT by South
 Lead: ♠ 4

You are South and it is your bid. Decide what you would say, then click on BID. [BID 1 NT]

Do not be tempted to say 2 ♦, even with such good 3-card help. To support partner's minor suit opening you should have at least 4 cards in the suit. Remember he may have opened a 3-card suit.

Instead you bid 1 NT showing a balanced 6-10 point hand with no 4-card Major suit. Partner passes.

South plays 1 NT. West leads the ♠ 4. East wins the ♠ A, then plays the ♠ 9. West takes his ♠ K and leads another ♠, East discarding a ♥.

Make a Plan, then click NEXT. [NEXT]

To make a PLAN for a Notrump contract you should count your winners.

Winners: ♠ 1 : ♥ 1 : ♦ 2 : ♣ 3 : Total = 7

For this deal you see that you already have all the winners you need to make the contract. So you just want to be sure you don't do something stupid that would jeopardize those winners.

You win the ♠ Q, then lead to the ♠ A, ♠ K, ♠ Q. Everybody follows suit to these three tricks. Next you take the ♥ A. Then you play a small ♦ to your ♦ K, then play your ♦ A. You have now won your required 7 tricks, but you have a bonus. Since all the ♠s except the ♠ 8 have been played your ♠ 8 is now high and you make an overtrick.

Click NEXT to see the complete deal. [NEXT]

But even with this type of hand you should make sure you take them in the right order. Here, if you had played the ♦ A and ♦ K BEFORE you played the ♠ A K Q you would have had no entry back to the fourth ♠ in your hand. In this case it was only an overtrick, in other deals it could make the difference between making and going down.

Deal 2
 North Deals
 None Vul

♠ 10 5 2
 ♥ 7 6 4
 ♦ 10 9 8 6
 ♣ A 9 5

♠ 7 4
 ♥ K Q J 3
 ♦ A K 7 5
 ♣ 8 6 3

♠ J 9 8 6
 ♥ A 5
 ♦ Q 3 2
 ♣ Q J 10 4

♠ A K Q 3
 ♥ 10 9 8 2
 ♦ J 4
 ♣ K 7 2

West North East South
 1 NT by South
 Lead: ♦ 10

You are South and it is your bid. Decide what you would say, then click on BID. [BID 1 ♥]

A jump to 2 NT would be descriptive, but your first goal is to seek a Major suit fit. When you have two 4-card Majors you should respond "up-the-line" so you bid 1 ♥. Partner says 2 ♥. What do you bid now? [BID 4 ♥]

Partner would not support your ♥ suit without 4 cards so you have an 8-card Major fit. There is no point in bidding ♠s.

Partner has at least 13 points and you have 13 so you bid the game.

South plays 4 ♥. West leads the ♦ T.

Make a Plan, then click NEXT. [NEXT]

To make a PLAN for a suit contract you should count your losers.

Losers: ♠ 0 : ♥ 1 : ♦ 0 : ♣ 3 : Total = 4

There is nothing you can do about losing the Ace of trumps. The three ♣ losers would only happen if West has the ♠ A and East wins a trick early, (say with the ♥ A), and leads a ♣ through your ♠ K.

You can take care of this possibility by discarding a ♣ from dummy BEFORE you play trumps. So win the ♦ K, and play ♠ A, ♠ K, ♠ Q, discarding dummy's ♣ 3 on the last one. Then pull trumps. You will end up losing two ♣s and the ♥ A.

Click NEXT to see the Deal that could have set you. [NEXT]

East would win his ♥ A and would switch to a black suit to lead up to dummy's weakness. In this case he would surely lead the ♣ Q, and you would lose three ♣ tricks and be down before you started.

Making a PLAN is a necessary part of being a good Declarer and Visualizing what might happen is a necessary part of making a Plan.

Deal 3
 East Deals
 None Vul

♠ J 9 6 4 3
 ♥ A 5 3
 ♦ 10 7 5
 ♣ 9 3

♠ A Q 5
 ♥ 7 4
 ♦ Q 9 6 2
 ♣ A J 10 8

♠ K 10
 ♥ Q J 10 9 8 2
 ♦ 8 3
 ♣ 6 5 2

♠ 8 7 2
 ♥ K 6
 ♦ A K J 4
 ♣ K Q 7 4

West North East South
 3 NT by South
 Lead: ♠ 4

With 16 points and a balanced hand you should open 1 NT. Do not worry about the lack of a ♠ stopper, a 1 NT opening does not guarantee stoppers in all four suits.

Partner raises you to 3 NT.

South plays 3 NT. West leads the ♠ 4.

Make a Plan, then click NEXT. [NEXT]

Winners: ♠ 1 : ♥ 0 : ♦ 4 : ♣ 4 : Total = 9

It's nice to have a hand where the Winner count is 9. And guess what? West probably has the ♠ K, so you can finesse on the first trick for an overtrick.

HOLD IT! JUST STEP AWAY FROM THE QUEEN OF SPADES AND NOBODY WILL GET HURT.

What if you tried the finesse and East had the ♠ K? And what if he then switched to the ♥ Q? And what if your opponents then took the next 6 ♥ tricks?

I think you get the idea. Win the ♠ A immediately and then take your other 8 tricks.

Click NEXT to see the complete Deal. [NEXT]

This wasn't one of those times.

And so on for
 100 hands for
100deals.pbn

Walkthrough Variations

- Bidding
- Bidding and play
- Bidding, rotate the hand, then play
- Some have none, (Bid Practice and Two Over One)
- Some have cardplay
 - E.g. end-plays
 - Card-play sequencing hasn't been extracted yet

Row Labels	<input type="checkbox"/> Count of Kind
	316
BID	437
BID+DEAL+NEXT	1
BID+NEXT	124
BID+NEXT+ROTATE	75
NEXT	220
Grand Total	1173

BakerBridge Excel File

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
	Subfolder	Filename	DealNum	Kind	North	East	South	West	Hands	Dealt	Auction	Contract	Declaration	Lead	Analysis								
1	100Deals	deal001.html	1	BID-NEXT	S:J86 H:A98 D:8653 C:AKQ	SA9 H:Q754 D:QJ72 C:J73	S:Q53 H:762 D:AK4 C:8742	S:K742 H:KJ3 D:97 C:965	4	North	1D pass 1NT pass pass pass	1NT	South	S4	You are South and it is your bid. D								
2	100Deals	deal002.html	2	BID-NEXT	S:74 H:A96 D:AK75 C:863	S:J96 H:A5 D:Q32 C:QJ74	SAKQ3 H:7982 D:J4 C:K72	ST52 H:764 D:7986 C:A95	4	North	1D pass 1H pass 2H pass 4H pass pass pass	4H	South	DT	You are South and it is your bid. D								
3	100Deals	deal003.html	3	BID-NEXT	SAQ5 H:74 D:Q962 C:AJ78	SKT H:QJ7982 D:83 C:652	S:872 H:K6 D:AK4 C:KQ74	SJ9643 H:A53 D:T75 C:93	4	East	pass 1NT pass 3NT pass pass pass	3NT	South	S4	You are South and it is your bid. D								
4	100Deals	deal004.html	4	BID-NEXT	S:KQJ H:A862 D:Q63 C:T94	S:72 H:Q43 D:AJ92 C:Q73	ST98653 H:K7 D:84 C:AKJ	SA4 H:J95 D:KT75 C:8652	4	South	1S pass 2H pass 2S pass 4S pass pass pass	4S	South	D5	You are South and it is your bid. D								
5	100Deals	deal005.html	5	BID-NEXT	S:J64 H:Q7 D:A983 C:KQ76	SA7 H:K653 D:762 C:T543	S:KQ73 H:A4 D:QJ75 C:AJ2	S:9852 H:J7982 D:K4 C:98	4	East	pass 1NT pass 3NT pass pass pass	3NT	South	HJ	You are South and it is your bid. D								
6	100Deals	deal006.html	6	BID-NEXT+ROTATE	S:QJ79 H:A5 D:7542 C:973	SK63 H:QJ783 D:J C:KJ62	SA2 H:K742 D:A863 C:AT5	S:8754 H:96 D:KQ79 C:Q84	4	North	1NT pass pass pass	1NT	North	HQ	You are South and it is your bid. D								
7	100Deals	deal007.html	7	BID-NEXT	S:T64 H:KJ7 D:86 C:J7532	S:982 H:5 D:Q7742 C:AK96	S:QJ5 H:AKQ7963 D:AK5 C:Q	SAK73 H:842 D:J93 C:T84	4	South	1H pass 2H pass 4H pass pass pass	4H	South	SA	You are South and it is your bid. D								
8	100Deals	deal008.html	8	BID-NEXT+ROTATE	S:74 H:K53 D:AK962 C:KQ3	S:QJ782 H:T86 D:754 C:A5	SA9 H:AJ2 D:QJ3 C:J7862	SK653 H:Q974 D:T8 C:974	4	West	pass 1C pass 1D pass 1NT pass 3NT pass pass pass	3NT	North	SQ	You are South and it is your bid. D								
9	100Deals	deal009.html	9	BID-NEXT+ROTATE	S:952 H:KQ92 D:KQ83 C:J7	SKQJ8 H: D:9764 C:Q7652	ST63 H:AT754 D:AJ2 C:AK	SA74 H:J863 D:T5 C:9843	4	North	1H pass 3H pass 4H pass pass pass	4H	North		You are South and it is your bid. D								
10	100Deals	deal010.html	10	BID-NEXT	SKQ92 H:952 D:K7 C:KQ83	S: H:A874 D:QJ632 C:T764	SA8754 H:T63 D:A8 C:AJ2	SKJ763 H:KQJ D:T954 C:95	4	North	1C pass 1S pass 2S pass 4S pass pass pass	4S	South		You are South and it is your bid. D								
11	100Deals	deal011.html	11	BID-NEXT	SK82 H:754 D:X9542 C:Q3	SJT97 H:KQ76 D:J6 C:J54	SA63 H:A92 D:A87 C:A976	S:Q54 H:J83 D:Q73 C:KT82	4	East	pass 1NT pass 2NT pass 3NT pass pass pass	3NT	South	C2	You are South and it is your bid. D								
12	100Deals	deal012.html	12	BID-NEXT+ROTATE	S:85 H:J762 D:83 C:AKQ43	S:Q743 H:54 D:J7964 C:95	SAK72 H:A83 D:AQ72 C:62	S:J96 H:KQ79 D:K5 C:JT87	4	North	1NT pass 2C pass 2S pass 3NT pass pass pass	3NT	North	DJ	You are South and it is your bid. D								

218 Missing Hands with Bids
- requires smart hand generation:

753 deals need balanced hand
generation (no bidding), bb_fill.py
does this

Set	Hand	Seat	Bid	Level	Strain
2over1	4 East	2D		2	D
2over1	19 East	Double			X
Bidpractice/Set10	1 West	1H		1	H
Bidpractice/Set10	2 East	1H		1	H
Bidpractice/Set10	3 West	1H		1	H
Bidpractice/Set10	4 East	1H		1	H
Bidpractice/Set10	5 West	1S		1	S
Bidpractice/Set10	6 East	1C		1	C
Bidpractice/Set10	7 West	1H		1	H
Bidpractice/Set10	8 East	1S		1	S
Bidpractice/Set10	9 West	1D		1	D
Bidpractice/Set10	10 East	1H		1	H
Bidpractice/Set10	11 West	1H		1	H
Bidpractice/Set10	12 East	1D		1	D
Bidpractice/Set10	13 West	1D		1	D
Bidpractice/Set10	14 East	1H		1	H
Bidpractice/Set10	15 West	1S		1	S
Bidpractice/Set10	16 East	1H		1	H
Bidpractice/Set10	17 West	1D		1	D
Bidpractice/Set10	18 East	1S		1	S
Bidpractice/Set10	19 West	1C		1	C
Bidpractice/Set10	20 East	1C		1	C
Bidpractice/Set10	21 West	1S		1	S
Bidpractice/Set10	22 East	1S		1	S
Bidpractice/Set10	23 West	1C		1	C
Bidpractice/Set10	24 East	1D		1	D

Row Labels	Count of Bid
1C	25
1D	37
1H	32
1NT	20
1S	41
2C	9
2D	14
2H	14
2S	13
3C	1
3D	2
3H	2
3S	2
4H	1
Double	1
X	3
XX	1
Grand Total	218

Missing Hands Summary

- The web interface doesn't require the missing hands
- But the other uses, such as face-to-face play, requires all 52 cards
- Initially I wrote a Python script to randomly divide missing cards into two balanced hands
 - But some hands require specific bids from the unspecified hands, such as 1NT opener by RHO
 - So those hands need to be suitable for that bid
 - There are 218 missing hands that make bids
 - There are 17 different bids made by these hands
- There are 753 deals missing hands that don't bid

Row Labels	Count of Bid
1C	25
1D	37
1H	32
1NT	20
1S	41
2C	9
2D	14
2H	14
2S	13
3C	1
3D	2
3H	2
3S	2
4H	1
Double	1
X	3
XX	1
Grand Total	218

Missing Hand Generation

- Plan is to use combination of Python script and dealer.exe with scripts to form the missing hands
- Write a script HandsNeeded.py:
 - Generates HandsNeeded.csv:
 - Subfolder, Deal, BidType, Bidder, PredealList
- Write a Powershell script FillHands.ps1:
 - Define a static list of [dealer criteria](#), per BidType, with {seat} in place of a specific seat
 - Delete HandsGenerated.csv
 - Reads HandsNeeded.csv
 - For each row:
 - Create a dealer script:
 - Break the PredealList to individual Predeal statements
 - Appending the BidType script, substituting Bidder for {seat}
 - Run dealer.exe, with that script as input, appending the result to HandsGenerated.csv
- Sample dealer script templates:

```
# auction_templates.dlr
# Auction templates definitions for dealer.exe

# Template for a 1NT opening hand by West:
auction_1nt      = hcp(west)>=15 && hcp(west)<=17 and shape(west,any 5332 + any 4432 + any 4333)
auction_1nt_east = hcp(east)>=15 && hcp(east)<=17 and shape(east,any 5332 + any 4432 + any 4333)

# Template for a 1H opening hand by West:
auction_1h      = hcp(west)>=11 && hcp(west)<=19 and hearts(west)>=5 and hearts(west) <= 7 and hearts(west) > spades(west) and hearts(west) >= diamonds(west) and hearts(west) >= clubs(west) and not auction_1nt
auction_1h_east = hcp(east)>=11 && hcp(east)<=19 and hearts(east)>=5 and hearts(east) <= 7 and hearts(east) > spades(east) and hearts(east) >= diamonds(east) and hearts(east) >= clubs(east) and not auction_1nt_east

# Template for a 1S opening hand by West:
auction_1s      = hcp(west)>=11 && hcp(west)<=19 and spades(west)>=5 and spades(west) <= 7 and hearts(west)<=5 and diamonds(west)<=5 and clubs(west)<=5 and not auction_1nt

# Template for a 1C opening hand by West:
# West must have 12-19 HCP, not be eligible for a 1NT opening,
# have fewer than 5 spades and fewer than 5 hearts,
# and have more clubs than diamonds.
auction_1c      = hcp(west)>=11 && hcp(west)<=19 and not auction_1nt and spades(west)<5 and hearts(west)<5 and clubs(west)>diamonds(west) and clubs(west) <= 6
auction_1c_east = hcp(east)>=11 && hcp(east)<=19 and not auction_1nt_east and spades(east)<5 and hearts(east)<5 and clubs(east)>diamonds(east) and clubs(east) <= 6

auction_1d      = hcp(west)>=11 && hcp(west)<=19 and not auction_1nt and spades(west)<5 and hearts(west)<5 and clubs(west)<=diamonds(west) and diamonds(west) <= 6
auction_1d_east = hcp(east)>=11 && hcp(east)<=19 and not auction_1nt_east and spades(east)<5 and hearts(east)<5 and clubs(east)<=diamonds(east) and diamonds(east) <= 6
```

Sample Dealer Script

```
generate 10000
produce 5
vulnerable none
dealer east
```

```
predeal north SA932, HJT6, D73, CKQ65
predeal south S54, HKQ982, DAJT96, C3
```

```
east_1nt = hcp(east)>=15 && hcp(east)<=17 &&
shape(east, any 5332 + any 4432 + any 4333)
```

```
condition east_1nt
action printall
```

Here we are generating 5 hands, just for illustration, but the script will generate just one

```
1.
A 9 3 2      Q J 7      5 4      K T 8 6
J T 6        A 7 5      K Q 9 8 2    4 3
7 3          K Q 8 5    A J T 9 6    4 2
K Q 6 5      A 8 7      3          J T 9 4 2

2.
A 9 3 2      K Q J T 8    5 4      7 6
J T 6        A 5 4      K Q 9 8 2    7 3
7 3          K 2        A J T 9 6    Q 8 5 4
K Q 6 5      A 8 7      3          J T 9 4 2

3.
A 9 3 2      Q 8 7      5 4      K J T 6
J T 6        A 7 5 3    K Q 9 8 2    4
7 3          K Q 8      A J T 9 6    5 4 2
K Q 6 5      A 9 7      3          J T 8 4 2

4.
A 9 3 2      Q 8 7 6    5 4      K J T
J T 6        A 3        K Q 9 8 2    7 5 4
7 3          K Q 4      A J T 9 6    8 5 2
K Q 6 5      A 9 4 2    3          J T 8 7

5.
A 9 3 2      K Q 6      5 4      J T 8 7
J T 6        7 5 4      K Q 9 8 2    A 3
7 3          K Q 8 4    A J T 9 6    5 2
K Q 6 5      A J 4      3          T 9 8 7 2

Generated 86 hands
Produced 5 hands
Initial random seed 1743349510
Time needed 0.001 sec
```

Toolset

Mac OS:

- Python (scripts)
- BBEdit (text editor)
- ChatGPT (code generation)
- Microsoft Excel (visualization)
- Terminal (run scripts)
- WeasyPrint (HTML to PDF)

Work folder:

'/Users/rick/Documents/Bridge/Baker Bridge'

Windows 11:

- BridgeComposer (PBN viewer)
- BridgeComposer scripts:
 - Multisets
 - BiddingSheets
 - BlockReplicate
 - SafePDF
- dealer.exe (hand generation)
- winhtmltopdf
 - HTML to PDF:
 - Bidding Sheets

Build Command Sequence

1. `HTTrack`
2. `python3 bbparse.py`
3. `python3 bbcheck.py BakerBridge.csv >bbcheck.txt` (checks for duplicate cards and non-13 hands)
4. `python3 bb_correct.py BakerBridge.csv --apply` (auto-fixes duplicate cards)
5. `python3 check_missing_bids.py BakerBridge.csv missing_bids.csv` (finds empty hands that bid)
6. `.\Fill_Hands.ps1` (uses dealer to construct missing hands based on their bid)
7. `python3 bb_fill.py BakerBridge.csv BakerBridgeFull.csv constructed_hands.csv` (fills in missing hands)
8. `python3 CSV_to_PBN.py BakerBridgeFull.csv StandardHeader.pbn "Baker Bridge Collection"`
9. `python3 Convert_deal00_to_PDF.py`
10. `.\convert_pbns_to_pdfs.ps1`
11. `package_results.py`

Mac OS Terminal

Windows Powershell Terminal