Challenge March-2019
Offering Donated Organs for Transplant

A solution with DT5GL by Jack Jansonius – 25 April 2019

Problem description:

See the text on the website:
https://dmcommunity.org/challenge/challenge-march-2019/

Used statuses for Hearts (H_Stat) and Lungs (L_Stat):

I-Available	= Available for individual patients.
I-Offered	= Offered to an individual patient.
I-Accepted	= Accepted by an individual patient.
TC-Wait	= Fallback
TC-Available	= Available for transplant centers.
TC-Offered	= Offered to a transplant center.
TC-Accepted	= Accepted by a transplant center.
NotAccepted	= Not accepted by any individual patient or transplant center.
NotAvailable	= Not available

There is an application/transaction that places patients on a High Priority Heart List.
There is an application/transaction that places patients on a High Priority Lung List.
There is an application/transaction that places transplant centers on a Transplant Centres List.

There is an application/transaction that provides heart-lung blocks for donation; each block contains the heart, lungs or both organs of the same donor and each organ present in the block is registered with status **I_Available**; the possibly absent organ with status **NotAvailable**.

There is a continuously or regularly running organ offering service in the background that

- offers newly added organs and organs refused by individual patients, both with status **I_Available**, to individual patients on the priority lists; offered organs are given the status **I-Offered**.
- puts one organ in a waiting state **(TC-Wait)** because there are no longer any available candidates on the corresponding priority list, while the other organ is still being offered to candidates on the other priority list (i.e. with status **I-Offered**).
  This synchronization is called fallback policy.
- offers organs as combined heart-lung-block to the first candidate on the Transplant Centres List, since there were no more candidates on both patient lists and both organs had become in a waiting state (**TC-Wait**). Both organs in the block on offer are now given status **TC-Offered**, or status **NotAccepted** if such a transplant centre is not found.
- offers one organ in a heart-lung-block to the first candidate on the Transplant Centres List, because there was no longer a candidate on the priority list for individual patients and the other organ was initially not present in the block (status **NotAvailable**), or because the other organ was already accepted by an individual patient (status **I-Accepted**). The single organ in the block offered is given the status **TC-Offered**, or the status **NotAccepted** if such a transplant centre is not found.
- offers all organs present in a block with status **TC-Available** to the next candidate on the Transplant Centres List because they have been refused by the previous candidate; the organs offered get the status **TC-Offered** if a transplant centre is found, otherwise the status **NotAccepted**.
- takes no action if both organs have been offered to individual patients (**I-Offered**), or if one organ is waiting (**TC-Wait**), while the other is still being offered to individual patients (**I-Offered**).

If an individual patient (or the responsible transplant center) accepts an organ, then:

- the status of this organ is changed to **I-Accepted**
- ~~the DUOBLOCK variable is set to false to indicate that the other organ no longer has to wait as a combined heart-lung block to be offered to transplantation centers.~~
  (Replaced by a decision rule in the organ offering service)
- the patient is removed from the priority list.

If an individual patient (or responsible transplant centre) refuses an organ for a specific reason, then

- the status of this organ is changed to **I-Available** so that it can be offered by the organ offering service to a subsequent patient.
- is the reason for refusal:
  "The potential recipient is too sick to undergo surgery when the organ becomes available. "
  then the patient is (temporarily) removed from the priority list.
- is the reason for refusal:
  "The potential recipient has passed away in the meantime".
  then the patient is removed from the priority list.
- is the reason for refusal:
  "The surgeon responsible for the patient determines that the agreement between organ and potential recipient is not sufficient. "
  then the patient remains available for subsequent offers (other priority?).
- is the reason for refusal:
  "There are operational challenges in the transplant centre, which means that an operation cannot take place on time. "
  then all patients in this transplant centre will be given a lower priority on the list of priorities for this organ (or something similar).
- et cetera.

If a transplant center accepts an organ, then:

- the status of this organ is changed to **TC-Accepted**.

If a transplant center refuses an organ, then:

- the status of this organ is changed to **TC-Available**.

There is a continuously or regularly running alarm service in the background that:

- Resets the status of all organs offered to individual patients (status **I-Offered**) back to status **I-Available** when the maximum response time of the offer has expired, but not after x minutes before the end of this response time the responsible transplant centre has been informed about it.
- Resets the status of all organs offered to transplant centres (status **TC-Offered**) back to status **TC-Available** when the maximum response time of the offer has expired, but not after y minutes before the end of this response time the responsible transplant centre has been informed about it.

Implementation of the decision tables in DT5GL:

```
Table 0: Assign the heart to an individual patient or a transplant center.
If:                                          | 0| 1| 2| 3| 4| 5| 6| 7| 8| 9|10|
'DUOBLOCK/Fallback is (still) possible'      | Y| Y| Y| Y| N| N| N| N| N| -| -|
H_Stat_inp is NotAvailable                   | -| -| -| -| Y| N| N| N| N| -| -|
H_Stat_inp is TC-Wait                        | Y| N| N| N| -| Y| N| N| N| -| -|
H_Stat_inp is I-Available                    | -| Y| Y| N| -| -| Y| Y| N| -| -|
'Another patient on Heart Prio List'         | -| Y| N| -| -| -| Y| N| -| -| -|
H_Stat_inp is TC-Available                   | -| -| -| -| -| -| -| -| -| Y| N|
Then:
H_Stat is I-Offered                          |  | X|  |  |  |  | X|  |  |  |  |
H_Stat is TC-Wait                            |  |  | X|  |  |  |  |  |  |  |  |
H_Stat is TC-Available                       |  |  |  |  |  | X|  | X|  | X|  |
# .......

Attribute: H_Stat_inp
Askable_using: "What is the Status of the offered Heart in the block?"
Proposition: 'Another patient on Heart Prio List'
Askable_using: "Is there Another patient on the Heart Prio List?"
# Proposition: 'DUOBLOCK'  / Could, on closer inspection, be derived from other
variables.
# Askable_using: "Fallback scenario?"  / See table 2.


Table 1: assign the lungs to an individual patient or a transplant center
If:                                          | 0| 1| 2| 3| 4| 5| 6| 7| 8| 9|10|
'DUOBLOCK/Fallback is (still) possible'      | Y| Y| Y| Y| N| N| N| N| N| -| -|
L_Stat_inp is NotAvailable                   | -| -| -| -| Y| N| N| N| N| -| -|
L_Stat_inp is TC-Wait                        | Y| N| N| N| -| Y| N| N| N| -| -|
L_Stat_inp is I-Available                    | -| Y| Y| N| -| -| Y| Y| N| -| -|
'Another patient on Lung Prio List'          | -| Y| N| -| -| -| Y| N| -| -| -|
L_Stat_inp is TC-Available                   | -| -| -| -| -| -| -| -| -| Y| N|
Then:
L_Stat is I-Offered                          |  | X|  |  |  |  | X|  |  |  |  |
L_Stat is TC-Wait                            |  |  | X|  |  |  |  |  |  |  |  |
L_Stat is TC-Available                       |  |  |  |  |  | X|  | X|  | X|  |
# .......

Attribute: L_Stat_inp
Askable_using: "What is the Status of the offered Lungs in the block?"
Proposition: 'Another patient on Lung Prio List'
Askable_using: "Is there Another patient on the Lung Prio List?"


rTable 2: DUOBLOCK/fallback policy still applies.
If:                                          | 0|
H_Stat_inp is NotAvailable                   | N|
H_Stat_inp is I-Accepted                     | N|
L_Stat_inp is NotAvailable                   | N|
L_Stat_inp is I-Accepted                     | N|
Then:
'DUOBLOCK/Fallback is (still) possible'      | X|
# .......

# The Duoblock proposition indicates whether a fallback scenario is possible.
# DUOBLOCK is false when a Heart-Lung-block contains 1 organ only; the other organ
has status NotAvailable.
# DUOBLOCK becomes false when one of the organs is accepted by an individual
patient.
# DUOBLOCK is true as long as both organs are offered to individual patients.
```

rTable 3: Assign a heart-lung block to a transplant center for the first time (fallback-scenario)

If:	0	1	2
H_Stat is TC-Wait	Y	Y	N
L_Stat is TC-Wait	Y	-	Y
H_Stat_inp is TC-Wait	-	-	Y
L_Stat_inp is TC-Wait	-	Y	-
Then:			
'Heart-Lung Block to TC for the first time'	X	X	X

....

Proposition: 'Another Transplant Center on TC list'
Askable_using: "Is there Another TC on the Transplant Center Prio List?"

Table 4: Assign heart and/or lungs to a next transplantation center.

If:	0	1	2	3	4	5	6	7	8
'Heart-Lung Block to TC for the first time'	Y	Y	N	N	N	N	N	N	N
H_Stat is TC-Available	-	-	Y	Y	Y	Y	N	N	N
L_Stat is TC-Available	-	-	Y	Y	N	N	Y	Y	N
'Another Transplant Center on TC list'	Y	N	Y	N	Y	N	Y	N	-
Then:									
Action is HL->TC	X		X						
Action is NotAccepted		X		X		X		X	
Action is H->TC					X				
Action is L->TC							X		

....

Table 5: Assign heart and/or lungs to next patient.

If:	0	1	2	3
H_Stat is I-Offered	Y	Y	N	N
L_Stat is I-Offered	Y	N	Y	N
Then:				
Action is H->I;L->I	X			
Action is H->I		X		
Action is L->I			X	

....

Table 6: Only the heart or the lungs come into a wait state (fallback scenario)

If:	0	1	2
H_Stat is TC-Wait	Y	N	N
L_Stat is TC-Wait	-	Y	N
Then:			
Action is H->TC-Wait	X		
Action is L->TC-Wait		X	

....

```
GoalAttribute: Action

Case: NotAccepted
Print: "============================Result============================"
Print: "Not Accepted by any patient or TC"
Print: "=============================================================="

Case: HL->TC
Print: "============================Result============================"
Print: "HL->TC"
Print: "Assign a heart and lung-block to the next transplant center"
Print: "Status of the heart: TC-Offered."
Print: "Status of the lungs: TC-Offered."
Print: "=============================================================="
Case: H->TC
Print: "============================Result============================"
Print: "H->TC"
Print: "Assign the heart to a next transplant center"
Print: "Status of the heart: TC-Offered."
Print: "=============================================================="
Case: L->TC
Print: "============================Result============================"
Print: "L->TC"
Print: "Assign the lungs to a next transplant center"
Print: "Status of the lungs: TC-Offered."
Print: "=============================================================="

Case: H->TC-Wait
Print: "============================Result============================"
Print: "H->TC-Wait"
Print: "The heart is waiting now for a block-offer to a transplant center,"
Print: "while the lungs are still offered to individual patients on the prio list."
Print: "=============================================================="
Case: L->TC-Wait
Print: "============================Result============================"
Print: "L->TC-Wait"
Print: "The lungs are waiting now for a block-offer to a transplant center,"
Print: "while the heart is still offered to individual patients on the prio list."
Print: "=============================================================="

Case: H->I;L->I
Print: "============================Result============================"
Print: "H->I;L->I"
Print: "Assign heart and lungs to the following patients on the prio lists"
Print: "Status of the heart: %s." H_Stat
Print: "Status of the lungs: %s." L_Stat
Print: "=============================================================="
Case: H->I
Print: "============================Result============================"
Print: "H->I"
Print: "Assign the heart to the following patient on the prio list"
Print: "Status of the heart: %s." H_Stat
Print: "Status of the lungs: %s." L_Stat
Print: "=============================================================="
Case: L->I
Print: "============================Result============================"
Print: "L->I"
Print: "Assign the lungs to the following patient on the prio list"
Print: "Status of the heart: %s." H_Stat
Print: "Status of the lungs: %s." L_Stat
Print: "=============================================================="
```

An explanation of some decision tables.

The backward reasoning mechanism built into DT5GL cannot handle variables that are both askable and derivable. Therefore, for the organ states, I have distinguished between

- an askable variant, namely H_Stat_inp and L_Stat_inp, and
- a derivable variant, namely: H_Stat and L_Stat.

The askable variant is indeed asked from the decision service tester by means of the 'askable-using' statement, but it would be interesting to replace all these questions by queries on an underlying relational database, such as SQLite or MySQL.
Which, of course, would be necessary for a production version of this solution.

Thus, the askable/queryable variables always refer to the current situation and the derivable variables to the new situation.

Decision table:

```
rTable 3: Assign a heart-lung block to a transplant center for the first time
(fallback-scenario)
If:                                          | 0| 1| 2|
H_Stat is TC-Wait                            | Y| Y| N|
L_Stat is TC-Wait                            | Y| -| Y|
H_Stat_inp is TC-Wait                        | -| -| Y|
L_Stat_inp is TC-Wait                        | -| Y| -|
Then:
'Heart-Lung Block to TC for the first time'  | X| X| X|
# .......
```

thus describes 3 different scenarios:
1. Both the heart and the lungs now come into a waiting state,
2. The heart becomes in a waiting state and the lungs were already in a waiting state,
3. The heart was already in a waiting state and the lungs now become in a waiting state.

The situation in which both organs are already in a waiting state is impossible, because that is precisely what is being dealt with here.

The use of 'rTable' instead of 'Table' disables the completeness check, which in some cases leads to more compact decision tables. For an explanation of this, see my solution for the June 2018 challenge.

Test cases

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
-	Yes	NotAvailable	-	-	-	-	-	Impossible (Duoblock = Y)
-	Yes	-	-	NotAvailable	-	-	-	Impossible (Duoblock = Y)
1	Yes	I-Available	Y	I-Available	Y	-	H → I L → I	
2	Yes	I-Available	N	I-Available	Y	-	H → Wait L → I	
3	Yes	I-Available	Y	I-Available	N	-	H → I, L → Wait	
4	Yes	I-Available	N	I-Available	N	Y	HL → TC	
5	Yes	I-Available	N	I-Available	N	N	NotAccept	
6	Yes	I-Available	Y	TC-Wait	-	-	H → I	
7	Yes	I-Available	N	TC-Wait	-	Y	HL → TC	
8	Yes	I-Available	N	TC-Wait	-	N	NotAccept	
9	Yes	TC-Wait	-	I-Available	Y	-	L → I	
10	Yes	TC-Wait	-	I-Available	N	Y	HL → TC	
11	Yes	TC-Wait	-	I-Available	N	N	NotAccept	
-	Yes	TC-Wait		TC-Wait			-	Impossible! (possible only as 'inner state')
12	Yes	I-Available	Y	Otherwise	-	-	H → I	Otherwise means here: I-offered, waiting for a reaction.
13	Yes	I-Available	N	Otherwise	-	-	H → Wait	Id.
14	Yes	Otherwise	-	I-Available	Y	-	L → I	Id.
15	Yes	Otherwise	-	I-Available	N	-	L → Wait	Id.
16	Yes	TC-Wait		Otherwise			No action	Id.
17	Yes	Otherwise		TC-Wait			No action	Id.

NB: Otherwise=I-offered, because DUOBLOCK=Yes.

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
-	No	NotAvailable		NotAvailable				Impossible
18	No	I-Available	Y	NotAvailable	-	-	H→I	Initial one-organ offer.
19	No	I-Available	N	NotAvailable	-	Y	H →TC	Id.
20	No	I-Available	N	NotAvailable	-	N	NotAccept	Id.
21	No	NotAvailable	-	I-Available	Y		L→I	Initial one-organ offer.
22	No	NotAvailable	-	I-Available	N	Y	L →TC	Id.
23	No	NotAvailable	-	I-Available	N	N	NotAccept	Id.
~~-~~	~~No~~	~~I-Available~~	~~-~~	~~I-Accepted~~	~~-~~	~~-~~	~~-~~	~~Impossible! (Duoblock=N)~~
~~-~~	~~No~~	~~I-Accepted~~	~~-~~	~~I-Available~~	~~-~~	~~-~~	~~-~~	~~Impossible! (Duoblock=N)~~
								→ test cases 36 and further.
24	No	TC-Wait	-	I-Accepted	-	Y	H →TC	
25	No	TC-Wait	-	I-Accepted	-	N	NotAccept	
26	No	I-Accepted	-	TC-Wait	-	Y	L → TC	
27	No	I-Accepted	-	TC-Wait	-	N	NotAccept	
28	-	TC-available	-	TC-available	-	Y	HL → TC	
29	-	TC-available	-	TC-available	-	N	NotAccept	
30	-	TC-available	-	I-Accepted	-	Y	H → TC	
31	-	TC-available	-	I-Accepted	-	N	NotAccept	
32	-	TC-available	-	Otherwise	-	Y	H → TC	
33	-	Otherwise	-	TC-available	-	N	NotAccept	
34	-	TC-available	-	NotAvailable	-	Y	H → TC	
35	-	NotAvailable	-	TC-available	-	Y	L → TC	
-	-	TC-available	-	I-Available	-	-	-	Impossible
36	No	I-Available	Y	I-Accepted	-	-	H→I	
37	No	I-Available	N	I-Accepted	-	Y	H→TC	
38	No	I-Available	N	I-Accepted	-	N	NotAccept	
39	No	I-Accepted	-	I-Available	Y	-	L→I	
40	No	I-Accepted	-	I-Available	N	Y	L→TC	
41	No	I-Accepted	-	I-Available	N	N	NotAccept	

The test runs can be found in the appendix.

Demo Goal-driven/Backward-chaining reasoning with condition subtables.

Session 1:

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
10	Yes	TC-Wait	-	I-Available	N	Y	HL → TC	

```
Prove (Action is HL->TC)
    >> Conditions Table 4 Rule 0:
    Prove ('Heart-Lung Block to TC for the first time')
        >> Conditions Table 3 Rule 0:
        Prove (H_Stat is TC-Wait)
            >> Conditions Table 0 Rule 2:
            Prove ('DUOBLOCK/Fallback is (still) possible')
                >> Conditions Table 2 Rule 0:
                "What is the Status of the offered Heart in the block?"
                1. NotAvailable
                2. TC-Wait
                3. I-Available
                4. TC-Available
                5. I-Accepted
                6. Otherwise
                > 2

                "What is the Status of the offered Lungs in the block?"
                1. NotAvailable
                2. TC-Wait
                3. I-Available
                4. TC-Available
                5. I-Accepted
                6. Otherwise
                > 3

                >> Succeed...
            Succeed
            >> Failed...
        Failed
        >> Failed...
        >> Conditions Table 3 Rule 1:
        Prove (H_Stat is TC-Wait)
            >> Conditions Table 0 Rule 2:
            >> Failed...
        Failed
        >> Failed...
        >> Conditions Table 3 Rule 2:
        Prove (L_Stat is TC-Wait)
            >> Conditions Table 1 Rule 2:
            "Is there Another patient on the Lung Prio List? (y/n)? > n
            >> Succeed...
        Succeed
        >> Succeed...
    Succeed
    "Is there Another TC on the Transplant Center Prio List? (y/n)? > y
    >> Succeed...
============================Result============================
HL->TC
Assign a heart and lung-block to the next transplant center
Status of the heart: TC-Offered.
Status of the lungs: TC-Offered.
==============================================================
Succeed
```

Session 2:

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
40	No	I-Accepted	-	I-Available	N	Y	L→TC	

```
Prove (Action is HL->TC)
    >> Conditions Table 4 Rule 0:
    Prove ('Heart-Lung Block to TC for the first time')
        >> Conditions Table 3 Rule 0:
        Prove (H_Stat is TC-Wait)
            >> Conditions Table 0 Rule 2:
            Prove ('DUOBLOCK/Fallback is (still) possible')
                >> Conditions Table 2 Rule 0:
                "What is the Status of the offered Heart in the block?"
                1. NotAvailable
                2. TC-Wait
                3. I-Available
                4. TC-Available
                5. I-Accepted
                6. Otherwise
                > 5

                >> Failed...
            Failed..
            >> Failed...
        Failed
        >> Failed...
        >> Conditions Table 3 Rule 1:
        Prove (H_Stat is TC-Wait)
            >> Conditions Table 0 Rule 2:
            >> Failed...
        Failed
        >> Failed...
        >> Conditions Table 3 Rule 2:
        Prove (L_Stat is TC-Wait)
            >> Conditions Table 1 Rule 2:
            >> Failed...
        Failed
        >> Failed...
    Failed..
    >> Failed...
    >> Conditions Table 4 Rule 2:
    Prove (H_Stat is TC-Available)
        >> Conditions Table 0 Rule 5:
        >> Failed...
        >> Conditions Table 0 Rule 7:
        >> Failed...
        >> Conditions Table 0 Rule 9:
        >> Failed...
    Failed
    >> Failed...
Failed
Prove (Action is NotAccepted)
    >> Conditions Table 4 Rule 1:
    >> Failed...
    >> Conditions Table 4 Rule 3:
    Prove (H_Stat is TC-Available)
        >> Conditions Table 0 Rule 5:
        >> Failed...
        >> Conditions Table 0 Rule 7:
        >> Failed...
        >> Conditions Table 0 Rule 9:
        >> Failed...
    Failed
    >> Failed...
```

```
    >> Conditions Table 4 Rule 5:
    Prove (H_Stat is TC-Available)
        >> Conditions Table 0 Rule 5:
        >> Failed...
        >> Conditions Table 0 Rule 7:
        >> Failed...
        >> Conditions Table 0 Rule 9:
        >> Failed...
    Failed
    >> Failed...
    >> Conditions Table 4 Rule 7:
    Prove (L_Stat is TC-Available)
        >> Conditions Table 1 Rule 5:
        "What is the Status of the offered Lungs in the block?"
        1. NotAvailable
        2. TC-Wait
        3. I-Available
        4. TC-Available
        5. I-Accepted
        6. Otherwise
        > 3

        >> Failed...
        >> Conditions Table 1 Rule 7:
        "Is there Another patient on the Lung Prio List? (y/n)? > n
        >> Succeed...
    Succeed
    "Is there Another TC on the Transplant Center Prio List? (y/n)? > y
    >> Failed...
Failed
Prove (Action is H->TC)
    >> Conditions Table 4 Rule 4:
    Prove (H_Stat is TC-Available)
        >> Conditions Table 0 Rule 5:
        >> Failed...
        >> Conditions Table 0 Rule 7:
        >> Failed...
        >> Conditions Table 0 Rule 9:
        >> Failed...
    Failed
    >> Failed...
Failed
Prove (Action is L->TC)
    >> Conditions Table 4 Rule 6:
    >> Succeed...
============================Result============================
L->TC
Assign the lungs to a next transplant center
Status of the lungs: TC-Offered.
==============================================================
Succeed
```

Appendix: the testruns.

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
1	Yes	I-Available	Y	I-Available	Y	-	H → I L → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Heart Prio List? (y/n)? > y
"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
H->I;L->I
Assign heart and lungs to the following patients on the prio lists
Status of the heart: I-Offered.
Status of the lungs: I-Offered.
==============================================================
```

NB. the option "Otherwise" has been added by the tool.

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
2	Yes	I-Available	N	I-Available	Y	-	H → Wait L → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
L->I
Assign the lungs to the following patient on the prio list
Status of the heart: TC-Wait.
Status of the lungs: I-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
3	Yes	I-Available	Y	I-Available	N	-	H → I, L → Wait	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Heart Prio List? (y/n)? > y
"Is there Another patient on the Lung Prio List? (y/n)? > n
============================Result============================
H->I
Assign the heart to the following patient on the prio list
Status of the heart: I-Offered.
Status of the lungs: TC-Wait.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
4	Yes	I-Available	N	I-Available	N	Y	HL → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
HL->TC
Assign a heart and lung-block to the next transplant center
Status of the heart: TC-Offered.
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
5	Yes	I-Available	N	I-Available	N	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
6	Yes	I-Available	Y	TC-Wait	-	-	H → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"Is there Another patient on the Heart Prio List? (y/n)? > y
============================Result============================
H->I
Assign the heart to the following patient on the prio list
Status of the heart: I-Offered.
Status of the lungs: None.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
7	Yes	I-Available	N	TC-Wait	-	Y	HL → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
HL->TC
Assign a heart and lung-block to the next transplant center
Status of the heart: TC-Offered.
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
8	Yes	I-Available	N	TC-Wait	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
9	Yes	TC-Wait	-	I-Available	Y	-	L → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
L->I
Assign the lungs to the following patient on the prio list
Status of the heart: None.
Status of the lungs: I-Offered.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
10	Yes	TC-Wait	-	I-Available	N	Y	HL → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
HL->TC
Assign a heart and lung-block to the next transplant center
Status of the heart: TC-Offered.
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
11	Yes	TC-Wait	-	I-Available	N	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
12	Yes	I-Available	Y	Otherwise	-	-	H → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"Is there Another patient on the Heart Prio List? (y/n)? > y
============================Result============================
H->I
Assign the heart to the following patient on the prio list
Status of the heart: I-Offered.
Status of the lungs: None.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
13	Yes	I-Available	N	Otherwise	-	-	H → Wait	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"Is there Another patient on the Heart Prio List? (y/n)? > n
============================Result============================
H->TC-Wait
The heart is waiting now for a block-offer to a transplant center,
while the lungs are still offered to individual patients on the prio list.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
14	Yes	Otherwise	-	I-Available	Y	-	L → I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
L->I
Assign the lungs to the following patient on the prio list
Status of the heart: None.
Status of the lungs: I-Offered.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
15	Yes	Otherwise	-	I-Available	N	-	L → Wait	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
============================Result============================
L->TC-Wait
The lungs are waiting now for a block-offer to a transplant center,
while the heart is still offered to individual patients on the prio list.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
16	Yes	TC-Wait		Otherwise			No action	Otherwise means here: I-offered, waiting for a reaction.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
17	Yes	Otherwise		TC-Wait			No action	Otherwise means here: I-offered, waiting for a reaction.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
18	No	I-Available	Y	NotAvailable	-	-	H→I	Initial one-organ offer.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"Is there Another patient on the Heart Prio List? (y/n)? > y
============================Result============================
H->I
Assign the heart to the following patient on the prio list
Status of the heart: I-Offered.
Status of the lungs: None.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
19	No	I-Available	N	NotAvailable	-	Y	H →TC	Id.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
20	No	I-Available	N	NotAvailable	-	N	NotAccept	Id.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
21	No	NotAvailable	-	I-Available	Y		L→I	Initial one-organ offer.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
L->I
Assign the lungs to the following patient on the prio list
Status of the heart: None.
Status of the lungs: I-Offered.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
22	No	NotAvailable	-	I-Available	N	Y	L →TC	Id.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
L->TC
Assign the lungs to a next transplant center
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
23	No	NotAvailable	-	I-Available	N	N	NotAccept	Id.

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
24	No	TC-Wait	-	I-Accepted	-	Y	H →TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
25	No	TC-Wait	-	I-Accepted	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
26	No	I-Accepted	-	TC-Wait	-	Y	L → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
L->TC
Assign the lungs to a next transplant center
Status of the lungs: TC-Offered.
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
27	No	I-Accepted	-	TC-Wait	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 2

"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
28	-	TC-available	-	TC-available	-	Y	HL → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
HL->TC
Assign a heart and lung-block to the next transplant center
Status of the heart: TC-Offered.
Status of the lungs: TC-Offered.
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
29	-	TC-available	-	TC-available	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
30	-	TC-available	-	I-Accepted	-	Y	H → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
31	-	TC-available	-	I-Accepted	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
32	-	TC-available	-	Otherwise	-	Y	H → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
33	-	Otherwise	-	TC-available	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 6

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
34	-	TC-available	-	NotAvailable	-	Y	H → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================4
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
35	-	NotAvailable	-	TC-available	-	Y	L → TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 1

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 4

"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
L->TC
Assign the lungs to a next transplant center
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
36	No	I-Available	Y	I-Accepted	-	-	H→I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another patient on the Heart Prio List? (y/n)? > y
============================Result============================
H->I
Assign the heart to the following patient on the prio list
Status of the heart: I-Offered.
Status of the lungs: None.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
37	No	I-Available	N	I-Accepted	-	Y	H→TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
H->TC
Assign the heart to a next transplant center
Status of the heart: TC-Offered.
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
38	No	I-Available	N	I-Accepted	-	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3


"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5


"Is there Another patient on the Heart Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```

TC	Duo-block	H-status	H-cand?	L-status	L-cand?	TC-cand?	Result	
39	No	I-Accepted	-	I-Available	Y	-	L→I	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > y
============================Result============================
L->I
Assign the lungs to the following patient on the prio list
Status of the heart: None.
Status of the lungs: I-Offered.
==============================================================
NB: "None" here means: the status remains unchanged.
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
40	No	I-Accepted	-	I-Available	N	Y	L→TC	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > y
============================Result============================
L->TC
Assign the lungs to a next transplant center
Status of the lungs: TC-Offered.
==============================================================
```

TC	**Duo-block**	**H-status**	**H-cand?**	**L-status**	**L-cand?**	**TC-cand?**	**Result**	
41	No	I-Accepted	-	I-Available	N	N	NotAccept	

```
"What is the Status of the offered Heart in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 5

"What is the Status of the offered Lungs in the block?"
1. NotAvailable
2. TC-Wait
3. I-Available
4. TC-Available
5. I-Accepted
6. Otherwise
> 3

"Is there Another patient on the Lung Prio List? (y/n)? > n
"Is there Another TC on the Transplant Center Prio List? (y/n)? > n
============================Result============================
Not Accepted by any patient or TC
==============================================================
```