

Sorry.java

Background and Information:

The game of SORRY(TM) is a battle between two players. This game is played on a game board of 20 cells, and the players use 3 4-sided dice. The game starts with the players entering their names, then rolling the dice, attempting to roll the highest sum, to determine who will go first. Once the starting player is determined, the players alternate turns. During each turn a player rolls the 3 dice, and can reroll the dice (or subsets of the dice) 2 other times. At the end of the player's turn, the player chooses how to apply the dice values to the 3 game pieces. The game pieces are labeled a, b, and c, and the player tries to move these pieces along the board. If one or more of the player's pieces lands on any other piece, the piece that is landed on goes back to the starting point. This is true even if it is the player's own game piece. The winning player is the one that gets all 3 pieces to the end of the board first.

Assignment:

Write the game of Sorry, using Object Oriented Programming Principles. You should create and use the following classes: **Dice**, **OpenFile**, **dice.txt**, **DiceGroup**, **SorryPlayer**, **SorryScoreCard**, and **Sorry**. See the following sample run outputs to determine the "look and feel" of the program. Also, see drootr.com for some code that may be useful.

Sample Run Outputs:

```
C: \Java>java Sorry
```

```
-----+-----  
WELCOME TO SORRY!
```

```
The game of SORRY(TM) is a battle between two players. This game is played on a  
game board of 20 cells, and the players use 3 4-sided dice. The game starts with  
the players entering their names, then rolling the dice, attempting to roll the  
highest sum, to determine who will go first. Once the starting player is  
determined, the players alternate turns. During each turn a player rolls the 3  
dice, and can reroll the dice (or subsets of the dice) 2 other times. At the end  
of the player's turn, the player chooses how to apply the dice values to the 3  
game pieces. The game pieces are labeled a, b, and c, and the player tries to  
move these pieces along the board. If one or more of the player's pieces lands on  
any other piece, the piece that is landed on goes back to the starting point.  
This is true even if it is the player's own game piece. The winning player is the  
one that gets all 3 pieces to the end of the board first.
```

```
LET'S PLAY SOME SORRY!  
-----+-----
```

Player 1, please enter your first name : FRED

Player 2, please enter your first name : ETHEL

Let's see who will go first. FRED, please hit enter to roll the dice :

1 # 2 # 3

0	0	0
0	0	0

ETHEL, it's your turn. Please hit enter to roll the dice :

1 # 2 # 3

0	0	0
0	0	0

FRED, you rolled a sum of 7, and ETHEL, you rolled a sum of 8.
ETHEL, since your sum was higher, you'll roll first.

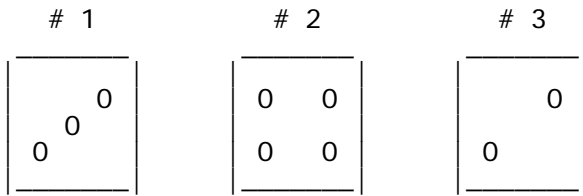
NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	abc																			
ETHEL	abc																			

ETHEL, it's your turn to play. Please hit enter to roll the dice :

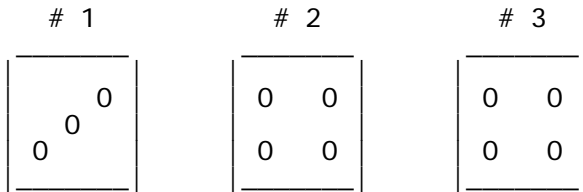
1 # 2 # 3

0	0	0
0	0	0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 1



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 12

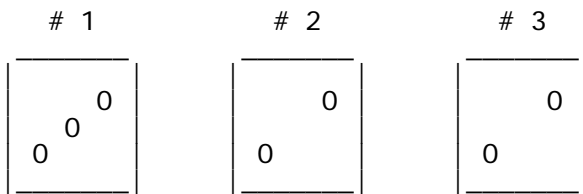


NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	abc																			
ETHEL	abc																			

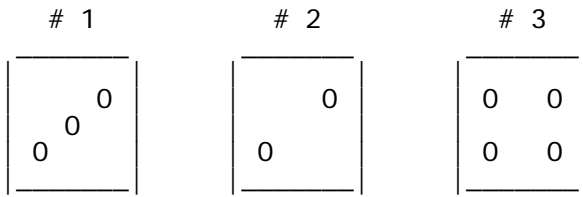
ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: aaa

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	abc																			
ETHEL	bc										a									

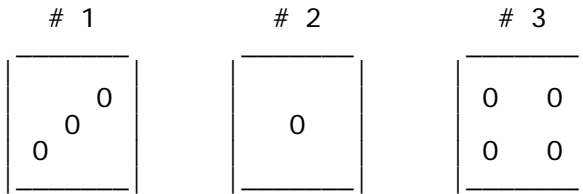
FRED, it's your turn to play. Please hit enter to roll the dice :



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 1



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 13

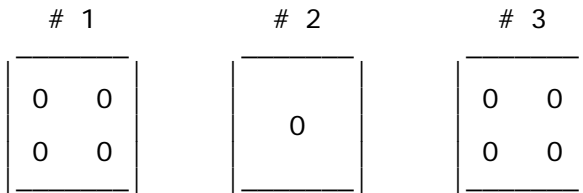


NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	abc																			
ETHEL	bc											a								

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: ccc

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	ab							c												
ETHEL	bc											a								

ETHEL, it's your turn to play. Please hit enter to roll the dice :



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 13

# 1	# 2	# 3
0 0 0 0	0 0 0 0	0 0 0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED	ab																				
ETHEL	bc																				

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: ccb

SORRY!

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED	abc																				
ETHEL																					

FRED, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3
0	0	0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) :

# 1	# 2	# 3
0 0	0	0 0

|_____| |_____| |_____|

Which di(c)e would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) :

# 1	# 2	# 3
0	0 0 0	0

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	abc																			
ETHEL				b				c			a									

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: aab

SORRY!

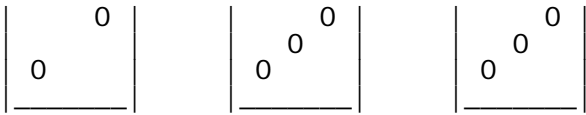
NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	c	b		a																
ETHEL	b							c			a									

ETHEL, it's your turn to play. Please hit enter to roll the dice :

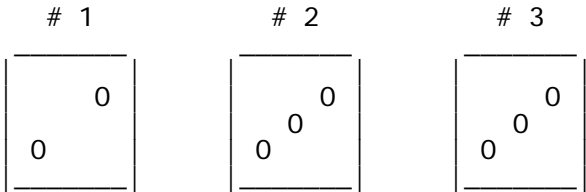
# 1	# 2	# 3
0 0	0 0 0	0 0 0

Which di(c)e would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 23

# 1	# 2	# 3
_____	_____	_____



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 23

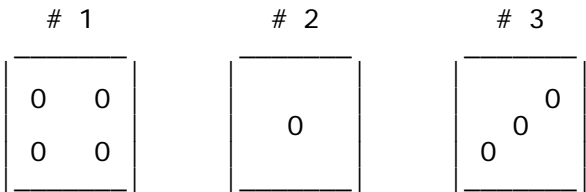


NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	c	b		a																
ETHEL	b							c			a									

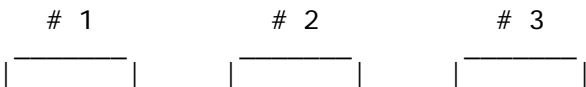
ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: cac

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	c	b		a																
ETHEL	b												c	a						

FRED, it's your turn to play. Please hit enter to roll the dice :



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 13



0	0
0	0

0

0	0
0	0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 13

# 1	
0	0
0	0

# 2	
0	0
0	0

# 3	
0	0
0	0

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	c	b		a																
ETHEL	b											c	a							

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: aac

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED		b	c									a								
ETHEL	b											c	a							

ETHEL, it's your turn to play. Please hit enter to roll the dice :

1
0

# 2	
0	0
0	0

# 3	
0	0
0	0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 23

1

2

3

0	0
0	0

	0
0	

0	0
0	0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED		b		c									a							
ETHEL	b													c	a					

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: cbc

SORRY!

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED		c	b											a						
ETHEL				b											a					c

FRED, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3
0	0	0 0
		0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 3

# 1	# 2	# 3
0 0	0 0	0 0
0 0	0 0	0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without

spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13
 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	c	b										a								
ETHEL			b											a						

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: ccb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED					b			c				a								
ETHEL			b											a						

ETHEL, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3					
<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr></table>	0
0							
0							
0							
0							
0							

Which di(c)e would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13
 (enter -1 if you'd like to end the turn) : 2

# 1	# 2	# 3					
<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr></table>	0
0							
0							
0							
0							
0							

Which di(c)e would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13
 (enter -1 if you'd like to end the turn) : 12

# 1	# 2	# 3					
<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	0	<table border="1"><tr><td>0</td></tr></table>	0
0							
0							
0							
0							
0							

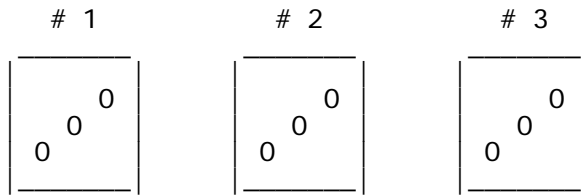
|_____| |_____| |_____|

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED					b			c				a								
ETHEL			b											a						

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: bbb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED					b			c				a								
ETHEL										b				a						

FRED, it's your turn to play. Please hit enter to roll the dice :



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED					b			c				a								
ETHEL										b				a						

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: bba

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED								c			b			a						
ETHEL										b				a						

ETHEL, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3
<div style="margin-bottom: 10px;">0</div> <div style="margin-bottom: 10px;">0</div> <div>0</div>	<div>0</div>	<div style="margin-bottom: 10px;">0</div> <div>0</div>

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED								c			b				a					
ETHEL										b				a						

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: aba

SORRY!

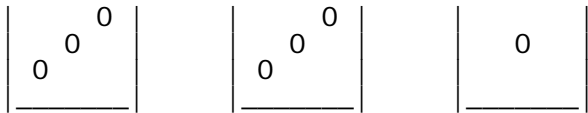
NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	b							c						a						
ETHEL											b								a	

FRED, it's your turn to play. Please hit enter to roll the dice :

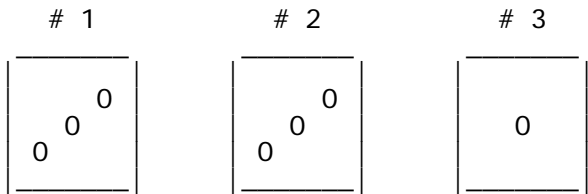
# 1	# 2	# 3
<div style="margin-bottom: 10px;">0</div> <div>0</div>	<div style="margin-bottom: 10px;">0</div> <div style="margin-bottom: 10px;">0</div> <div>0</div>	<div>0</div>

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 2

# 1	# 2	# 3



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 12



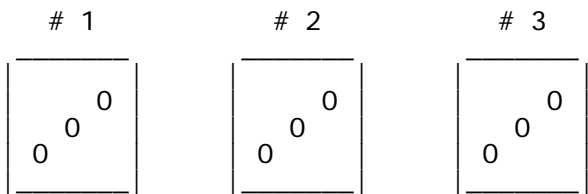
NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED	b							c							a					
ETHEL											b								a	

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: cbb

SORRY!

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b							c				a					
ETHEL	b																		a	

ETHEL, it's your turn to play. Please hit enter to roll the dice :



Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b							c				a					
ETHEL	b																		a	c

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: bbb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b							c				a					
ETHEL									b										a	c

FRED, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3
0	0	0 0
0		0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 3

# 1	# 2	# 3
0	0	0 0
0	0	0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 23

# 1	# 2	# 3
0	0	0 0
0	0	0 0

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b							c				a					
ETHEL									b										a	c

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: caa

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b									c							
ETHEL									b										a	c

ETHEL, it's your turn to play. Please hit enter to roll the dice :

1

0

2

0 0

0 0

3

0 0

0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : 23

1

0 0

0 0

2

0 0

0 0

3

0 0

0 0

Which die would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FRED				b									c							
ETHEL									b										a	c

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then

b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: abb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED				b									c								a
ETHEL																		b			ac

FRED, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3												
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Which di(c)e would you like to keep? Enter the values you'd like to 'hold' without spaces. For example, if you'd like to 'hold' die 1 and die 3, enter 13 (enter -1 if you'd like to end the turn) : -1

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED				b									c								a
ETHEL																		b			ac

FRED, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: bbb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED													c	b							a
ETHEL																		b			ac

ETHEL, it's your turn to play. Please hit enter to roll the dice :

# 1	# 2	# 3												
<table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td></tr> </table>	0	0	0	0	<table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td></tr> </table>	0	0	0	0	<table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td></tr> </table>	0	0	0	0
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NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED													c	b							a
ETHEL																	b				ac

ETHEL, now it's time to choose the pieces you would like to move with the dice you rolled. For example, if you'd like your dice score to match up with pieces a, then b, then c, then enter abc. If you'd like the first two dice to go toward piece a, then the third dice toward piece b, then enter aab: bbb

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
FRED													c	b							a
ETHEL																					abc

Thanks for playing SORRY!
ETHEL was the WINNER!
PLAY AGAIN SOON!

C: \Java>