

Stones.java

Background:

Now that we've made the **Dice** and **Prompt** classes, let's make use of them. First, some information about the game of **Stones**. The Game of Stones(TM) is played between the user and the computer. First, your program will create 3 piles of stones, with each pile containing between 3 and 10 stones (the **Dice** class is used to choose random values). Then, the user and the computer will take turns removing stones from the piles. The user will always go first. The player (user) must choose the pile (1, 2, or 3), and then the number stones in the pile to remove (from 1 to the number of stones remaining in the pile). Of course, if no stones remain in a pile, then it is not possible for stones to be removed from that pile. The **Prompt** class is used to get this user input. The player and the computer alternate turns until no stones remain. **THE LOSER IS THE LAST PLAYER TO TAKE A TURN (REMOVING THE LAST STONE).**

Assignment:

1. Write **Stones.java**. Make use of the **StonesStart** file.
2. Play the game of **Stones** repeatedly, making sure to thoroughly error-check your work.

See the 2 sample run outputs on the following pages.

```
C:\JAVA>java Stones
```

```
*****
* Welcome to the GAME OF STONES(TM)!                               *
* The Game of Stones(TM) is played between the user and the computer. *
* First, your program will create 3 piles of stones, with each pile   *
* containing between 3 and 10 stones (the Dice class is used to choose  *
* random values). Then, the user and the computer will take turns     *
* removing stones from the piles. The user will always go first. The  *
* player (user) must choose the pile (1, 2, or 3), and then the number *
* of stones in the pile to remove (from 1 to the number of stones     *
* remaining in the pile). Of course, if no stones remain in a pile,   *
* then it is not possible for stones to be removed from that pile. The *
* Prompt class is used to get this user input. The player and the     *
* computer alternate turns until no stones remain. THE LOSER IS THE  *
* LAST PLAYER TO TAKE A TURN (REMOVING THE LAST STONE).             *
*****
```

```
GOOD LUCK!
```

```
Player, please enter your name: JEREMIAH
```

```
Pile 1 - 5 STONES: 0 0 0 0 0
Pile 2 - 8 STONES: 0 0 0 0 0 0 0
Pile 3 - 7 STONES: 0 0 0 0 0 0 0
```

```
JEREMIAH, please enter a pile number (1, 2, or 3): 2
```

JEREMIAH, please enter the number of stones to remove in pile 2 (from 1 to 8): 2

JEREMIAH removed 2 stone(s) from Pile 2

Pile 1 - 5 STONES: 0 0 0 0 0
Pile 2 - 6 STONES: 0 0 0 0 0 0
Pile 3 - 7 STONES: 0 0 0 0 0 0 0

It's the computer's turn. Please hit enter to continue:

The computer removed 4 stone(s) from Pile 1

Pile 1 - 1 STONES: 0
Pile 2 - 6 STONES: 0 0 0 0 0 0
Pile 3 - 7 STONES: 0 0 0 0 0 0 0

JEREMIAH, please enter a pile number (1, 2, or 3): 3

JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 7): 2

JEREMIAH removed 2 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 6 STONES: 0 0 0 0 0 0
Pile 3 - 5 STONES: 0 0 0 0 0

It's the computer's turn. Please hit enter to continue:

The computer removed 2 stone(s) from Pile 2

Pile 1 - 1 STONES: 0
Pile 2 - 4 STONES: 0 0 0 0
Pile 3 - 5 STONES: 0 0 0 0 0

JEREMIAH, please enter a pile number (1, 2, or 3): 4
JEREMIAH, please enter a pile number (1, 2, or 3): 0
JEREMIAH, please enter a pile number (1, 2, or 3): aubwhgu
JEREMIAH, please enter a pile number (1, 2, or 3): 3

JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 5): 6
JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 5): 0
JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 5): -1
JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 5): oaiwhge
JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 5): 3

JEREMIAH removed 3 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 4 STONES: 0 0 0 0
Pile 3 - 2 STONES: 0 0

It's the computer's turn. Please hit enter to continue:

The computer removed 1 stone(s) from Pile 2

Pile 1 - 1 STONES: 0

Pile 1 - 3 STONES: 0 0 0
Pile 2 - 2 STONES: 0 0

JEREMIAH, please enter a pile number (1, 2, or 3): 2

JEREMIAH, please enter the number of stones to remove in pile 2 (from 1 to 3): 2

JEREMIAH removed 2 stone(s) from Pile 2

Pile 1 - 1 STONES: 0
Pile 2 - 1 STONES: 0
Pile 3 - 2 STONES: 0 0

It's the computer's turn. Please hit enter to continue:

The computer removed 1 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 1 STONES: 0
Pile 3 - 1 STONES: 0

JEREMIAH, please enter a pile number (1, 2, or 3): 2

JEREMIAH, please enter the number of stones to remove in pile 2 (from 1 to 1): 1

JEREMIAH removed 1 stone(s) from Pile 2

Pile 1 - 1 STONES: 0
Pile 2 - 0 STONES:
Pile 3 - 1 STONES: 0

It's the computer's turn. Please hit enter to continue:

The computer removed 1 stone from Pile 1

Pile 1 - 0 STONES:
Pile 2 - 0 STONES:
Pile 3 - 1 STONES: 0

JEREMIAH, please enter a pile number (1, 2, or 3): 3

JEREMIAH, please enter the number of stones to remove in pile 3 (from 1 to 1): 1

JEREMIAH removed 1 stone(s) from Pile 3

Pile 1 - 0 STONES:
Pile 2 - 0 STONES:
Pile 3 - 0 STONES:

THE COMPUTER IS THE WINNER!

THANK YOU FOR PLAYING THE GAME OF STONES(TM)

C:\JAVA>java Stones

```
*****
* Welcome to the GAME OF STONES(TM)! *
* The Game of Stones(TM) is played between the user and the computer. *
* First, your program will create 3 piles of stones, with each pile *
* containing between 3 and 10 stones (the Dice class is used to choose *
* random values). Then, the user and the computer will take turns *
* removing stones from the piles. The user will always go first. The *
* player (user) must choose the pile (1, 2, or 3), and then the number *
* of stones in the pile to remove (from 1 to the number of stones *
* remaining in the pile). Of course, if no stones remain in a pile, *
* then it is not possible for stones to be removed from that pile. The *
* Prompt class is used to get this user input. The player and the *
* computer alternate turns until no stones remain. THE LOSER IS THE *
* LAST PLAYER TO TAKE A TURN (REMOVING THE LAST STONE). *
*****
```

GOOD LUCK!

Player, please enter your name: MEREDITH

```
Pile 1 - 5 STONES: 0 0 0 0 0
Pile 2 - 9 STONES: 0 0 0 0 0 0 0 0
Pile 3 - 8 STONES: 0 0 0 0 0 0 0 0
```

```
MEREDITH, please enter a pile number (1, 2, or 3): ouwbwaer
MEREDITH, please enter a pile number (1, 2, or 3): 4
MEREDITH, please enter a pile number (1, 2, or 3): 1
```

```
MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 5): alurbgu
MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 5): 9
MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 5): 6
MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 5): 2
```

MEREDITH removed 2 stone(s) from Pile 1

```
Pile 1 - 3 STONES: 0 0 0
Pile 2 - 9 STONES: 0 0 0 0 0 0 0 0
Pile 3 - 8 STONES: 0 0 0 0 0 0 0 0
```

It's the computer's turn. Please hit enter to continue:

The computer removed 2 stone(s) from Pile 1

```
Pile 1 - 1 STONES: 0
Pile 2 - 9 STONES: 0 0 0 0 0 0 0 0
Pile 3 - 8 STONES: 0 0 0 0 0 0 0 0
```

MEREDITH, please enter a pile number (1, 2, or 3): 2

MEREDITH, please enter the number of stones to remove in pile 2 (from 1 to 9): 4

MEREDITH removed 4 stone(s) from Pile 2

```
Pile 1 - 1 STONES: 0
Pile 2 - 5 STONES: 0 0 0 0 0
Pile 3 - 8 STONES: 0 0 0 0 0 0 0 0
```

It's the computer's turn. Please hit enter to continue:

The computer removed 4 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 5 STONES: 0 0 0 0 0
Pile 3 - 4 STONES: 0 0 0 0

MEREDITH, please enter a pile number (1, 2, or 3): 2

MEREDITH, please enter the number of stones to remove in pile 2 (from 1 to 5): 3

MEREDITH removed 3 stone(s) from Pile 2

Pile 1 - 1 STONES: 0
Pile 2 - 2 STONES: 0 0
Pile 3 - 4 STONES: 0 0 0 0

It's the computer's turn. Please hit enter to continue:

The computer removed 1 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 2 STONES: 0 0
Pile 3 - 3 STONES: 0 0 0

MEREDITH, please enter a pile number (1, 2, or 3): 3

MEREDITH, please enter the number of stones to remove in pile 3 (from 1 to 3): 3

MEREDITH removed 3 stone(s) from Pile 3

Pile 1 - 1 STONES: 0
Pile 2 - 2 STONES: 0 0
Pile 3 - 0 STONES:

It's the computer's turn. Please hit enter to continue:

The computer removed 2 stone(s) from Pile 2

Pile 1 - 1 STONES: 0
Pile 2 - 0 STONES:
Pile 3 - 0 STONES:

MEREDITH, please enter a pile number (1, 2, or 3): 2

MEREDITH, please enter a pile number (1, 2, or 3): 3

MEREDITH, please enter a pile number (1, 2, or 3): 1

MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 1): 0

MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 1): 4

MEREDITH, please enter the number of stones to remove in pile 1 (from 1 to 1): 1

MEREDITH removed 1 stone(s) from Pile 1

Pile 1 - 0 STONES:
Pile 2 - 0 STONES:

Pile 3 - 0 STONES:

THE COMPUTER IS THE WINNER!

THANK YOU FOR PLAYING THE GAME OF STONES(TM)

C:\JAVA>java Stones