

Pig Game

Objective: Use simple algorithms and logic to create a game.

Background:

Pig is a dice game first described by John Scarne in 1945. The rules are simple. Two players try to reach 100 points. In each turn, the player either rolls the die or holds and scores the sum of the turn. During a turn, the player has two choices:

roll - If the player rolls a

2 through 6, the number is added to the turn's total

1, the player loses their turn and the opponent gets to roll

hold - The player adds the turn's total to their score and the opponent gets to roll

The user will play against the computer. The computer will always hold when reaching at least 20 points.

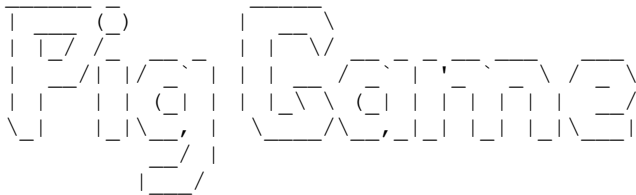
Assignment:

Download the file **PigGame.zip** from Mr Greenstein's web site and unzip. It will create a **PigGame** directory. Do all of your work in that directory. The directory contains two files, **PigGame.java** and **Dice.java**. You will also need to copy your **Prompt.java** file to the directory for the user interface.

All of your work should be done in **PigGame.java** and no other file.

A sample run:

```
% java PigGame
```



```
The Pig Game is human vs computer. Each takes a turn rolling a die and the first to score 100 points wins. A player can either ROLL or HOLD. A turn works this way:
```

```
ROLL: 2 through 6: add points to turn total, player's turn continues
```

```
1: player loses turn
```

```
HOLD: turn total is added to player's score, turn goes to other player
```

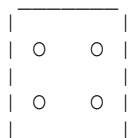
```
**** USER Turn ***
```

```
Your turn score: 0
```

```
Your total score: 0
```

```
(r)oll or (h)old -> r
```

```
You ROLL
```



```
Your turn score: 4
```

Your total score: 0

(r)oll or (h)old -> r

You ROLL

```
|-----|
| 0  0 |
|   0   |
| 0  0 |
|-----|
```

Your turn score: 9

Your total score: 0

(r)oll or (h)old -> r

You ROLL

```
|-----|
|       0 |
| 0       |
|-----|
```

Your turn score: 11

Your total score: 0

(r)oll or (h)old -> r

You ROLL

```
|-----|
| 0  0 |
| 0  0 |
| 0  0 |
|-----|
```

Your turn score: 17

Your total score: 0

(r)oll or (h)old -> r

You ROLL

```
|-----|
| 0  0 |
|   0   |
| 0  0 |
|-----|
```

Your turn score: 22

Your total score: 0

(r)oll or (h)old -> h

Your total score: 22

**** COMPUTER'S Turn ***

Computer's turn score: 0

Computer's total score: 0

Press enter for computer's turn ->

Computer will ROLL

```
| |
| 0 0 |
|  0  |
| 0 0 |
|_____|
```

Computer's turn score: 5
Computer's total score: 0

Press enter for computer's turn ->

Computer will ROLL

```
|_____|
|      |
|      0 |
|     0  |
|    0   |
|_____|
```

Computer's turn score: 8
Computer's total score: 0

Press enter for computer's turn ->

Computer will ROLL

```
|_____|
| 0 0 |
| 0 0 |
|_____|
```

Computer's turn score: 12
Computer's total score: 0

Press enter for computer's turn ->

Computer will ROLL

```
|_____|
| 0 0 |
|  0  |
| 0 0 |
|_____|
```

Computer's turn score: 17
Computer's total score: 0

Press enter for computer's turn ->

Computer will ROLL

```
|_____|
|      |
|     0 |
|    0  |
|   0   |
|_____|
```

Computer will HOLD
Computer's total score: 20

**** USER Turn ****

.. Many lines taken out here ...

**** USER Turn ***

Your turn score: 0
Your total score: 90

(r)oll or (h)old -> r

You ROLL

```
|-----|  
| 0  0 |  
|-----|  
| 0  0 |  
|-----|
```

Your turn score: 4
Your total score: 90

(r)oll or (h)old -> r

You ROLL

```
|-----|  
| 0  0 |  
|-----|  
| 0  0 |  
|-----|
```

Your turn score: 8
Your total score: 90

(r)oll or (h)old -> r

You ROLL

```
|-----|  
| 0  0 |  
|-----|  
| 0  0 |  
|-----|
```

Your turn score: 12
Your total score: 90

(r)oll or (h)old -> h

Your total score: 102

Congratulations!!! YOU WON!!!!

Thanks for playing the Pig Game!!!