

.NET Developer Test

Simplified Slot Machine

The purpose of this test is primarily to examine your problem solving skills.

Please follow this spec carefully!

You are expected to make your code elegant / beautiful and the best you can do. It's not sufficient that it works, please ensure separation of logic / object oriented abstraction.

Comment your code as necessary.

The problem:

You will have to build up a simplified slot machine game.

The rules:

- At the start of the game the player should enter the deposit amount (e.g. the initial money balance).
- After that, for each spin, the player is asked how much money he wants to stake.
- A table with the results of each spin is displayed to the player.
- The win amount should be displayed together with the total balance at the current stage.
After the first spin the total balance will be equal to:
$$(\{deposit\ amount\} - \{stake\ amount\}) + \{win\ amount\}.$$
- Game ends when the player balance hits 0.

The game:

- A slot game with dimensions 4 rows of 3 symbols each.
- Supports following symbols:

| Symbol | Coefficient | Probability to appear on a cell |
|------------------------|-------------|---------------------------------|
| Apple (A) | 0.4 | 45% |
| Banana (B) | 0.6 | 35% |
| Pineapple (P) | 0.8 | 15% |
| Wildcard (*) | 0 | 5% |

- The symbols are placed randomly respecting the probability of each item. For example: there is 5% chance that a Wildcard will be placed in a cell and there is 45% chance for an Apple.
- The player will win only if one or more horizontal lines contain 3 matching symbols.
Wildcard (*) is a symbol that matches any other symbol (A, B or P).
- The won amount should be the sum of the coefficients of the symbols on the winning line(s), multiplied by the stake amount.

Note: Visualize the solution as you decide - console, web, desktop, etc.



Example:

```
Please deposit money you would like to play with:
200
Enter stake amount:
10

BAA
AAA
A*B
*AA

You have won: 20.0
Current balance is: 210.0
```

BAA // 0

AAA // $0.4 + 0.4 + 0.4 = 1.2$ coefficient

A*B // 0

*AA // $0 + 0.4 + 0.4 = 0.8$ coefficient

Player has staked 10 and winning coefficient is $1.2 + 0.8 = 2$ so win is: $10 * 2 = 20$.

The won amount is then added to the current balance of the player $190 + 20 = 210$.

Win calculation examples:

| Win combinations | | | Calculation of win |
|------------------|---|---|-------------------------------|
| * | P | * | $(0 + 0.8 + 0) * 10 = 8$ |
| A | A | A | $(0.4 + 0.4 + 0.4) * 10 = 12$ |
| B | B | B | $(0.6 + 0.6 + 0.6) * 10 = 16$ |
| P | P | P | $(0.8 + 0.8 + 0.8) * 10 = 24$ |
| A | B | P | No matching symbols |
| * | A | B | No matching symbols |