

# Advanced Application Development

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## Homework 3

*Enhance the games in your Game Suite*

### 1. Drunken Bug Game

Enhance the drunken bug betting game by encapsulating the “moving environment” in a separate class called “Environment” or “BugZone” or something to your liking. The goal is to be able to change the nature of the environment (the length and/or the dimensions) in the future without changing the external interface to it. Remember our universal goal of separating presentation from business logic.

*Hint: You will need to control the movement inside the Environment class from the outside, in the bug object, so you’ll need to somehow communicate the likelihood of a drunken move.*

For example, when you’re done, the simulation code could look something like this:

```
BugZone freshmenDorm = new BugZone();
double probabilityOfMisstep = 33.33; // percent
int totalStepCount = 0;
for (int i = 0; i < SIMULATIONS_TO_RUN; ++i)
{
    totalStepCount = totalStepCount + freshmenDorm.ExercizeBug(probabilityOfMisstep);
}
double averageStepCount = totalStepCount / SIMULATIONS_TO_RUN;
```

### 2. Multi-Player Single-Deck Blackjack Game

- Refactor your code by creating separate classes for the deck of cards and for the player (if you did not already have that).
- Create a subclass of player for the dealer, since the dealer is just a special case of a player anyway.
- Allow for up to four (4) players.
- Perfect the game play while you’re at it.

### Deliverables

E-mail me the code *and the executable* for the project. Print out and turn in the source code. Use a cover sheet for all TPS reports.