**100 points**

A company is looking to improve its public relations this year. It has hired the marketing firm you work for to create and run several sweepstakes. It is up to you, the developer, to create the application to implement the following functionality.

**(5 points)** As a developer, I want consistent commits and descriptive commit messages.

**(5 points)** As a developer, I want to create a Contestant class that has a first name, last name, email address, and registration number.

**(10 points)** As a developer, I want to create a user interface for any information the application would need to get from the user. One example would be the functionality to assign a Contestant object a first name, last name, email address, and registration number.

**(15 points)** As a developer, I want to create a Sweepstakes class that uses the Dictionary data structure as an underlying structure. The Sweepstakes class will have the following methods with full implementation (write the functionality) of each method:

* Sweepstakes(string name)
* void RegisterContestant(Contestant contestant)
* string PickWinner()
* void PrintContestantInfo(Contestant contestant)

**(10 points)** As a developer, I want to write an ISweepstakesManager interface with the following methods for a sweepstakes management system:

* void InsertSweepstakes(Sweepstakes sweepstakes)
* Sweepstakes GetSweepstakes()

**(10 points)** As a developer, I want to create a SweepstakesStackManager class that uses the Stack data structure as an underlying structure.

**(10 points)** As a developer, I want to create a SweepstakesQueueManager class that uses the Queue data structure as an underlying structure.

**(10 points)** As a developer, I want my SweepstakesStackManager class and SweepstakesQueueManager class to inherit from the ISweepstakesManager interface and implement the methods from the ISweepstakesManager interface.

**(5 points)** As a developer, I want to create a MarketingFirm class.

**(10 points)** As a developer, I want to implement dependency injection in my MarketingFirm class so that I can utilize a sweepstakes manager.

**(10 points)** As a developer, I want to use the factory design pattern to allow a user to choose between a SweepstakesStackManager or a SweepstakesQueueManager to manage the sweepstakes objects.

**Bonus Points:**

**(5 points)** As a developer, I want to use the observer design pattern to notify all users of the winning contestant, with the winner of the sweepstakes getting a different message specifically congratulating them on being the winner.

**(5 points)** As a developer, I want to send an actual email to a sweepstakes winner using the built in SmtpClient class in C#.