# Allocate Software Engineer Programming Assignment

Oct 2017

## Instructions

The time limit for completing and returning the assignment is two days. Please feel free to use external resources and information to help you with your solutions.

This is an opportunity for you to show us your object oriented design skills and knowledge of best practices. We will be looking for solutions that implement SOLID principles and design methods leading to well-structured maintainable code.

Zip up your completed solutions and upload to Google Drive – details will be supplied by our recruiter. Include your name as part of the zip file name.

If you have any hand-written parts (e.g. class diagrams) then scan these, or if you don’t have access to a scanner bring them with you if you are invited to an interview.

Good luck!

## The OldMacDonald app

**Question 1**

Write a console program in C# to print out 5 verses of the nursery rhyme “Old MacDonald Had a Farm” with 5 animals of your choosing.

The verse is repeated for each animal and the appropriate sound for the animal is used eg cows go “moo”, ducks go “quack” etc.

Verse:

Old MacDonald had a farm, E I E I O,

And on his farm he had a cow, E I E I O.

With a moo moo here and a moo moo there,

Here a moo, there a moo, ev'rywhere a moo moo.

Old MacDonald had a farm, E I E I O.

Repeat with:

Dog

Cat

Pig

Etc, whichever animals you like with their appropriate sounds

Please write a few **unit tests** for your solution. We don’t need full code coverage, just a few unit tests covering the main logic.

**Question 2**

Extend your program to allow the user to provide their own animals and sounds through the console.

**Question 3**

Provide a class diagram including the key concepts in the problem i.e. don’t need to include all classes. This does not have to be done with a tool, a pencil and paper drawing is fine.