**Programming Assignment - 2**

**CSIS/CSCI 603**

**Fall 2013**

In the new Mars colony, houses are being built at a phenomenal rate to accommodate the migration from Earth. It seems that people are tired of not being able to get MTV to play music videos. As families are in the 10-month transport to Mars, a house is built for each family based on family size and family income. Design and implement a small program to illustrate a housing solution using Builder. The program will take information from the user (a string consisting of <number of family members>, <income in dollars>) and return a product (a string – see examples below).

**Specifications:**

The program will build a house (actually a string called a house that characterizes what could actually be a house). You decide how to use Builder pattern as a solution to the problem.

No GUI required or wanted. Use command line input or (at most) prompts through standard in. Output string to standard out.

Additionally:

1) All houses have one kitchen, one living room (complete with one MTV, i.e. MarsTV) and one dining room.

2) If the income of the family is < $50,000, then there will be only one bath in the house and two people per bedroom. Round up on bedrooms for an odd number of family members.

3) If the income of the family is between $50K and $150,000, then every person will have a separate bedroom and every two bedrooms will have its own bath (round up on baths for an odd number of bedrooms).

4) If the income of the family is >= $150,000, then each person will have a separate bedroom and each bedroom will have its own bathroom. Add one extra bedroom as a guest room.

Sample Run (user input is in bold)

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Family Specification: **5, 25321**

House:

1 kitchen

1 living room

1 dining room

3 bedrooms

1 bathroom

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Family Specification: **5, 125000**

House:

1 kitchen

1 living room

1 dining room

5 bedrooms

3 bathrooms

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Family Specification: **4, 325000**

House:

1 kitchen

1 living room

1 dining room

5 bedrooms

5 bathrooms

# Submission

Submit one zip file called **Builder.zip**, containing all of the source files.