# Problems for Analysis

For each of the following problems, restate the problem in general terms (i.e. remove the “noise”), create a general model of what the solution may look like, and provide a simple series of required steps necessary to solve the problem.

**Problem One**

The XYZ Corporation's marketing department recently conducted a survey and found that their online advertising campaign resulted in a conversion rate of 0.8%. They are now planning a new campaign and want to estimate the potential number of conversions based on their target audience size. Write a program that will estimate the number of conversions for a target audience size of 3M.

Restated

Determine **the total number of potential conversions** when given the conversion rate and the target audience size such as 3M.

General Model

Get Input values -> Calculate the number of potential conversions -> Display the result

Detailed Steps

Declare Conversion Rate as float (C# coding conventions ConversionRate)

Declare Audience Size as integer (C# coding conventions AudienceSize)

Declare number of conversions as integer (C# coding conventions NumberOfConversions)

Prompt the user for “Enter the conversion rate:”

Input (Read) the conversion rate

Prompt the user for “Enter the audience size:”

Input (Read) the audience size

Calculate the number of conversions: Number of conversions = conversion rate X audience size

Display the Number of conversions to the user

**Problem Two**

The HR department of a manufacturing company wants to determine the cost savings achieved by implementing a new automated inventory system. They estimate that the new system will reduce inventory management costs by 15%. Develop a program that will calculate the amount of cost savings achieved by implementing the automated inventory system, aiding the HR department in evaluating the potential benefits of the new system.

Restated

Develop a program that will calculate the amount of cost savings achieved by implementing the automated inventory system. Estimated saving is 15%.

Is the saving on a yearly, monthly, some other period or just a value stating the cost of the system and what could be the saving (regardless of time period)?

General Model

(pattern inputs -> calculation/coding logic statement -> outputs)

Input manual inventory cost -> Calculate potential saving with automated inventory system -> present results

Detailed Steps (NOTE: this is NOT code, this IS a set of statements indicating WHAT to do)

DECLARE constant PERCENT\_SAVINGS as Float (in C# this would be either a double or decimal)

DECLARE ManualCost as Float

DECLARE SavingsAmount as Float

PROMPT “Enter the current system cost:” ManualCost

Set SavingAmount = ManualCost \* PERCENT\_SAVINGS

DISPLAY “The savings on the cost is [SavingAmount]”