Answer the Following

1. Codeoku are exactly like Sudoku except they use symbols instead of numbers. You must place the 9 symbols in the grid so that every row and every column contains all the symbols. Also every marked 3x3 square should contain one of each symbol. Complete the grid using only the following symbols found in computer programs: [; } > % $ & # @

%	}	@	$	&				
;	>	&		}	[	$		#
$		[			%	@	&	
#		%		;	>	}	$	
	&	$	%				@	[
			&				>	%
		#	}	[		%	;	>
		>			;	[	}	$
	;	}	>	%	$	&	#	@

2. There is user registration on a website. The user has to choose a password according to some rules like
i) first character should not be any special character
ii) the length should be between 8 and 15 characters
iii) characters should not repeat successively.
iv) at least one alphabet, 1 numeral and 1 special character.
v) the strength of the password chosen is given a score between 1 to 5 (1/2- min, 3-medium, 4/5-strong)

3. A farmer is on her way to the local village with her sheepdog, Mist, who goes with her everywhere. To get to the village she has to cross a fast flowing river. An inventor living on the village side of the river has created a contraption to make it easier to get across. It consists of a rope and pulleys, with a seat hanging from the rope just big enough for one person. The locals have agreed to always leave the seat at the village side where the inventor lives so that it is easy for her to pack it away each evening: after all she is not charging anyone to use it. When she gets to the river the farmer pulls the seat across from the far side using the rope. She gets in, hugging Mist, then pulls herself across and continues into the village.

On one particular day she buys a new hen and a sack of corn. Returning home later in the day she arrives back at the ravine, and quickly realises she has a problem. She can only carry one thing across with her as she crosses using the seat. She will have to make several trips. The trouble is, if she leaves the hen and the corn alone on either side, the hen will eat the corn. Similarly if she leaves Mist and the hen together on one side the dog will worry the hen and may mean it stops laying eggs. Mist doesn't eat corn so it will come to no harm if left with him.

Write down the series of steps (the algorithm in computer science jargon) that she must take to get everything across so she can continue on her way.

4. The tour guide

You are a hotel tour guide. Tourists staying in your hotel expect to be taken on a tour visiting all the city's attractions. You have been given an underground map that shows all the locations of the attractions and how you can get from one to another using the underground network. You must work out a route that starts from the hotel and takes your tour group to every tourist site. The tourists will be unhappy if they pass through the same place twice. They also want to end up back at their hotel that evening.