# Homework 2

Dr. Manna

CS 10 | 30 points | due: 01/25/17 @ 1:00 pm

## Problem statement

1. (5+10 points) You are implementing a railway ticketing system and your system will provide discounted tickets, if:
   - age of passenger is less than 5 years then 100% discount.
   - age of passenger is more than 5 but less than 12 years then 50% discount
   - age of passenger is more than 12 but less than 26 years then 10% discount.
   - age of passenger is more than 60 years then 25% discount.

   Assume that you provide service only from destination A to destination B, and the price of the ticket is X (your choice). You have to compute how much a passenger needs to pay for purchasing his/her ticket after applying necessary discounts. You have to decide from the problem what information you have to take from the passenger in order to compute the discounts. In this assignment you are required to:
   a. Write an algorithm. Make your algorithm clear and concise step-by-step procedures that solve the problem given.
   b. Write a complete C++ program to do the same.

2. (5 points) Write a C++ program to read an integer between 0 and 6 inclusive from input. If the integer is 0, output "Sunday"; if it is 1, output "Monday", etc. If it is not between 0 and 6, output an error message.

3. (5 points) Write a C++ program to compute the area of a triangle using the formula: $area = \frac{b \times h}{2}$,
   where `b` is the base and `h` is the height of the triangle. Make sure your program should support floating point numbers.

4. (5 points) What is the output of the following C++ program (Try answering before running the program):

```
#include <iostream>
using namespace std;

int main()
```

```
{
	int a(5), b(4), c(3), A(2), B(1);

	if (a < b || a < c && b > c)
		cout << "YES" << endl;
	else
		cout << "NO" << endl;

	cout << a + b % c << endl;
	b *= c;
	cout << a * b + c << endl;
	cout << ++A << " " << A << endl;
	cout << B++ << " " << B << endl;

	return 0;
}
```

## Submission instructions

You will upload your solutions to Camino under assignments → homework 2 section. First problem under hw2.1a & hw2.1b, second under hw2.2, the third under hw2.3, and the fourth under hw2.4. You can find the instruction manual under week 2 module.