

**HW5 – DUE 10 AM 4.Feb.2013**

**Instructions:**

Submit **HW5\_[lastname].pl** by dropping it into your Assignments folder on Google Drive. Please document your code.

Define the following Prolog predicates:

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1. **insert**(Element, OldList, NewList).

The list OldList is assumed to be partially ordered (each element is less than or equal to the next element). The item Element is inserted into OldList to produce the list NewList in such a way that NewList remains partially ordered.

For example the call

**insert**(3, [1, 2, 4, 5], List)

produces the response

List = [1, 2, 3, 4, 5]

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**insert**(3, [1, 2, 3, 5], List)

produces the response

List = [1, 2, 3, 3, 5]

2. **insertionSort**(UnsortedList, SortedList).

UnsortedList is sorted using insertion sort to produce the list SortedList.

For example the call

**insertionSort**([3, 5, 2, 4, 1], List)

produces the response

List = [1, 2, 3, 4, 5]