COSC 341 Homework HW 11/16

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)

1. (Same as Exercise 8.1, p 404)

Suppose we are compiling for a machine with 1-byte characters, 2-byte shorts, 4-byte integers, and 8-byte reals, and with alignment rules that require the address of every primitive data element to be an even multiple of the elements size. Suppose further that the compiler is not permitted to reorder fields. How much space will be consumed by the following array?

```
A : array[0..9] of record
      s: short
      c: char
      t: short
      d: char
      r: real
      i: integer
```

2. For the array specified in question 1, what is the offset to the start of element `A[5]` ?

3. For the array specified in question 1, what is the offset to `A[5].i` ?

4. How much space is required for this array with contiguously allocated elements. In this language, arrays have lower bounds specified.

```
int a[ -5 .. 5] [0..10];
```

5. For the array specified in question 4, what is the offset to `a[0][9]` ?