General Announcements

- Quiz 1 will be graded and handed back in 2/28 recitations (and solutions will be posted)
- Homework 5 will be posted this weekend
- Homework solutions will be posted next week (bring grading questions/grievances to your recitation TA during his/her office hours)
- Please check (refresh/reload) the weekly schedule before attending office hours; rooms may change

Maximum Substring Sum – Algorithms

What is the maximum substring sum of:

```
1  -1  -2  2  3  4  -1  -1  2  3  -4  1  2  -1  -2  1
```

In other words, what is the largest sum of adjacent values in this string of integers?

What algorithm can we develop to find the maximum substring sum?

(See textbook problems 9.48 through 9.51.)

Maximum Substring Sum – Analyzing Algorithm 9.48

How do we obtain the following recurrence?

\[
T(n) = 2 + \sum_{i=1}^{n} \left[ 2 + \sum_{j=i}^{n} \left( 5 + \sum_{k=i}^{j} 2 \right) \right]
\]

Note that each for loop has an increment step and a comparison step.

Maximum Substring Sum – Analyzing Algorithm 9.51

Show that \( T_4(n) = 5 + 10n \).

\[
T_4(n) = 5 + \sum_{i=1}^{n} 10
\]

\[
T_4(n) = 5 + 10 \sum_{i=1}^{n} 1
\]

\[
T_4(n) = 5 + 10n
\]