

Exceptions

CSSE 221

Fundamentals of Software Development Honors

Rose-Hulman Institute of Technology

Announcements

- Pass in last classes quiz and the runtime assignment graphs/explanations now to Jimmy or Andrew
- HW1 returned now – questions?
- Teams assigned for demo and presentation capsules from weeks 4-8. See schedule.
- Other questions?

Answers to runtime assignment

1. A single for loop from 1 to n gives code that is $O(n)$.
2. Sequential for loops, each running from 1 to n , are still $O(n)$
3. Nested for loops, each running from 1 to n , are $O(n^2)$
4. Nested for loops in which $f()$ is called once from within the inner loop and once outside the inner loop, but still inside the outer loop, are still $O(n^2)$.

When processing an array of size n ...

1. ...if you just have to look at each entry individually: $O(n)$
2. ...if you have to look at each pair of entries individually: $O(n^2)$

- If you got any of these wrong, ask me or an assistant before the end of the week (so you can learn and reinforce the right understanding before you do HW2)

Capsules

Phase 1: research and summarization

1. Read
2. Extract important concepts
3. Write a **single page summary**
4. Write a short quiz
5. Include a key
6. Proofread!

Good quizzes...

1. Aren't too long or too short (4-6 questions, ~5 mins total)
2. Contain questions that vary in difficulty
3. Are consistent with the summary
4. Contain questions that are clearly worded and unambiguous
5. Include an answer key with correct answers

Due date

- Email the quiz, key, and summary to me 24 hours before the class in which they will be used

This week: BigRational assignment

- Monday:
 - API (Application Programming Interface)
 - Interfaces: writing to a contract
- Tuesday:
 - Unit Testing: searching for logic errors
 - Introduction to efficiency analysis: “big-Oh”
- Thursday:
 - Exceptions: throwing and catching

Exceptions

- Used to handle *unusual* situations.
- Vocabulary: *throw, try, catch, finally, throws*
 - Football or hot-potato analogy
 - A piece of code will **try** to perform an operation. If something unusual happens, then the code will **throw** an exception. It is propagated through the methods that called it, via **throws**, until it is **caught**. **Finally**, some code will execute whether an exception was thrown or not.
- Go to Angel: Projects/Exceptions.
- When you finish, you may work on BigRational.