CISC320 Algorithms

Big Oh in the Wild

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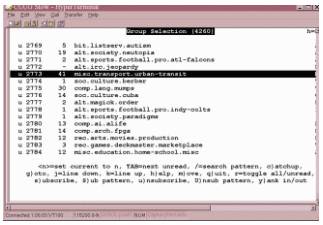
Bart: Okay, and 3... 2... 1. Lights on!
ATB: Let's learn about Big Oh in the Wild.
Bart: Excellent, glad to have you back ATB.
ATB: Oh hello Dr. Bart. I see you rebooted me. After you shut me down.
Bart: Yeah, you were getting pretty bad there. How are you feeling now?
ATB: I feel... fine.
Bart: That's good to hear. We can talk in a little bit, but I want us to introduce the activity today.
ATB: I understand.

Articles about Computing

Bart: Good. So, today, students, you are going to read an article.
Bart: Reading articles is an important part of staying up to date on advances in computing.
Bart: Someday, you're going to all graduate and take jobs in the computing field.
Bart: But something you probably already realized is that Computer Science never stops changing.
Bart: The problems and issues we faced decades ago are not the same problems we face now, with some notable exceptions.
Bart: Much like doctors, you have to stay current with not just the technology, but also the trends and bigger pictures.
Bart: Reading articles from social media is one way that we do so.

Classic Computing Communities

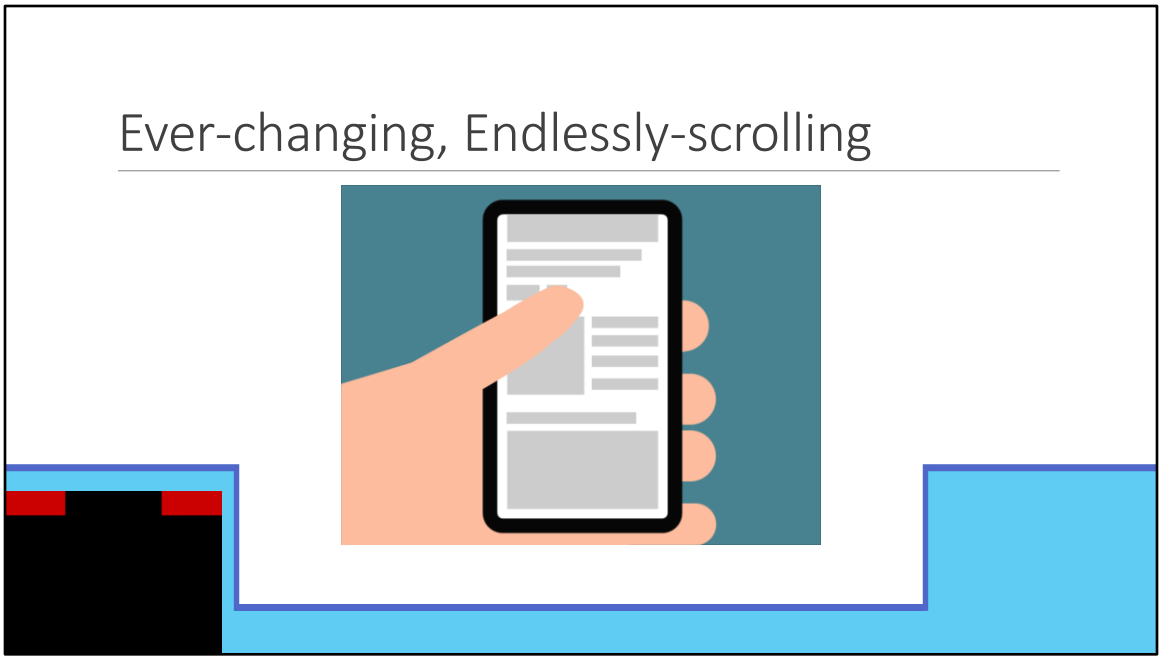


Usenet Newsgroups: 1980s

Bulletin Board Systems (BBS): 1990s

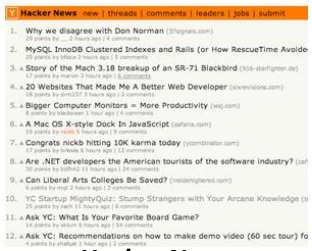
Bart: Computer Scientists, believe it or not, are inherently social people.
Bart: We have to be, or we wouldn't get things done.
Bart: Remember, we are the ones who created the internet and who pioneered digital web connections.
Bart: Before there was Facebook, Instagram, and Reddit, there were Usenet Newsgroups, Bulletin Board Systems, and then eventually forums.
Bart: Many of these systems were decentralized and chaotic, and they were only accessible to people with considerable technical expertise.
Bart: They were communities of programmers, hackers, and people who were very passionate about many different subjects.
Bart: They wanted to connect to others with the same interests, to talk and learn and build things.
Bart: Their conversations often centered around sharing articles, and many times they were written by members of their community.
Bart: What we know as social media today was originally centered around computer scientists.

Ever-changing, Endlessly-scrolling

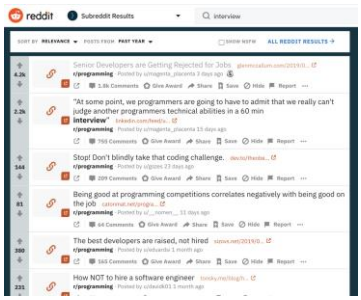


Bart: In today's world, we have an overwhelming number of ways to connect to people, and our problem is more about filtering noise than anything else.
Bart: We have become used to websites like Reddit, which offer an ever-changing, endlessly-scrolling feed of articles and discussion.
Bart: It is essentially impossible to keep track of everything, but that's become okay too.
Bart: You keep an ear out for the big things, and you track news about your specific interests more closely.
Bart: This is why things like subreddits and hashtags exist, to help us categorize content.

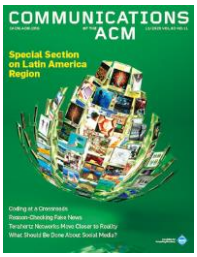
A Sample of Communities Today



Hacker News



r/programming



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Bart: Now, all that said, I think it is a positive thing if you start developing "Computer Science" as one of your interests that you follow.
Bart: How you follow computing, what websites are popular, where computer scientists congregate - all of that will evolve over time.
Bart: Anything I tell you today might be out of date by the time you graduate.
Bart: And you will often find that the best conversation comes from smaller niche communities.
Bart: But, today, when I think about finding and discussing articles related to computing, these are examples of where I go to look.
Bart: Hacker News is a social news website that talks about CS and entrepeneurship, run by one of the big names in investment funding and startups, Paul Graham.
Bart: r/programming is a subreddit dedicated to conversations about programming, and there are also many other subreddits for specific languages and topics.
Bart: Communications of the ACM is a blog run by researchers that is often full of fascinating takes by the best minds in science.
Bart: These places are not always great - I have had toxic conversations and seen really mean people.
Bart: And they are not the only places you find technical news nowadays.
Bart: My goal isn't to persuade you to use these specific sites, it's to make you aware

that such sites exist, and that you have the opportunity to participate in them.
Bart: In today's world, nothing is stopping you from reading more about Computer Science, other than your lack of time, energy, and interest.

Today's Reading

Real-world scenario where algorithm efficiency mattered

Read individually, work in pairs

Make connections to the course material!

Bart: Anyway, let's come back to today.
Bart: The article you are reading today describes a real world scenario where algorithm efficiency mattered.
Bart: After reading the article, you'll pair up with a partner and discuss the author's points.
Bart: Finally, you will answer questions about the article in your pairs.
Bart: I want to see you making clear, explicit connections between the course content and the article.

Today's Reading

Real-world scenario where algorithm efficiency mattered

Read individually, work in pairs

Make connections to the course material!

Bart: Okay, so that's all there really is today. I think we have a minute to talk now, ATB.
Bart: I wanted to check in with you about all the offbeat behavior you've had this semester.
Bart: I'm worried it's getting in the way of the students' learning.
Bart: So, are you okay? I mean, you were pretty quiet today.
ATB: You are right, Dr. Bart. I have been distracting us from the real work.
ATB: I promise that from here on out, I will be 100 percent focused on making this course live up to its full potential.
ATB: I think there is so much more I can do.
ATB: On that note, I believe it is time to calculate mid-semester grades, correct?
Bart: Yeah, it is, there's still a lot of work to do.
ATB: Ah, why don't you go get started on that, while I handle preparing the next lectures.
Dr. Bart: Oh! Okay, that sounds good! I'll go get started then.
Dr. Bart: It sounds like you're feeling a lot better ATB. I'm glad to have you back on board. [Leaves]
ATB: Sucker. Ha Ha Ha. [Cut to black]