

CSCI 1300

A fall of fun

Outline

1. Who's this person teaching me
2. Why should I even take this class
3. What are we going to do in the class
4. So am I going to be graded or what

Who's this person teaching me

Michael Hoefer

michael.hoefer@colorado.edu

OH: M/W/F 4:30 – 5:00, Math 100 (or by apt. in ECOT 743)



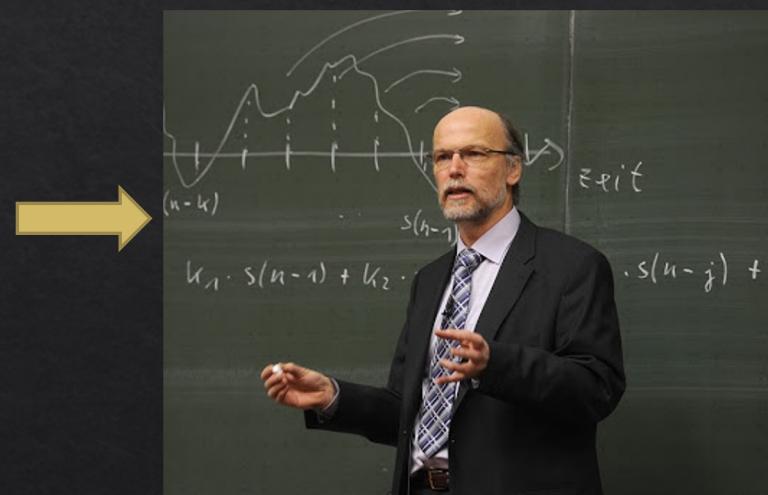
Iowa State –
BS/MS
Industrial
Engineering



Boeing
(California,
West Virginia,
South
Carolina)



PhD Student
Computer Science
Cognitive Science



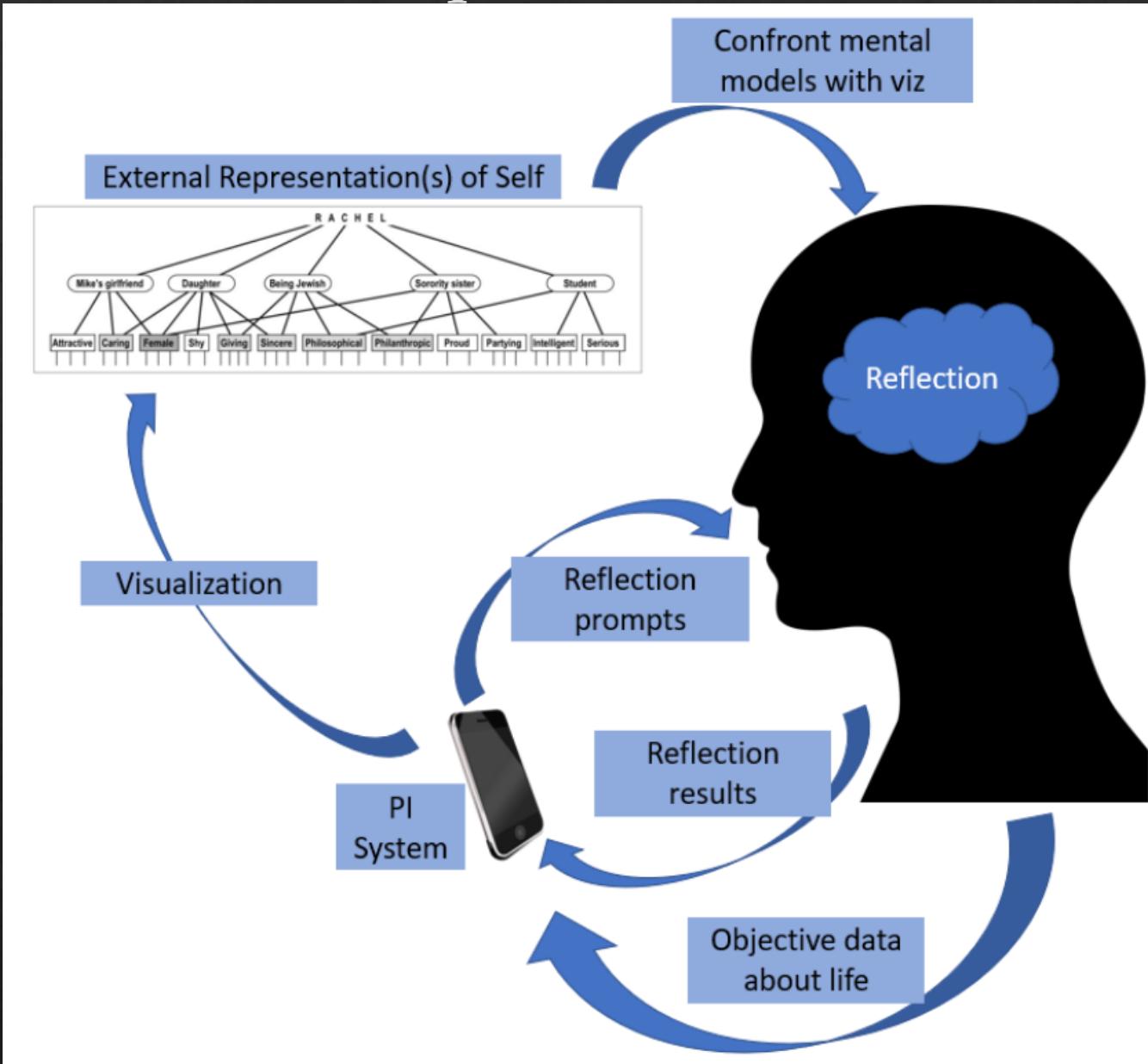
Professor (?)

Research

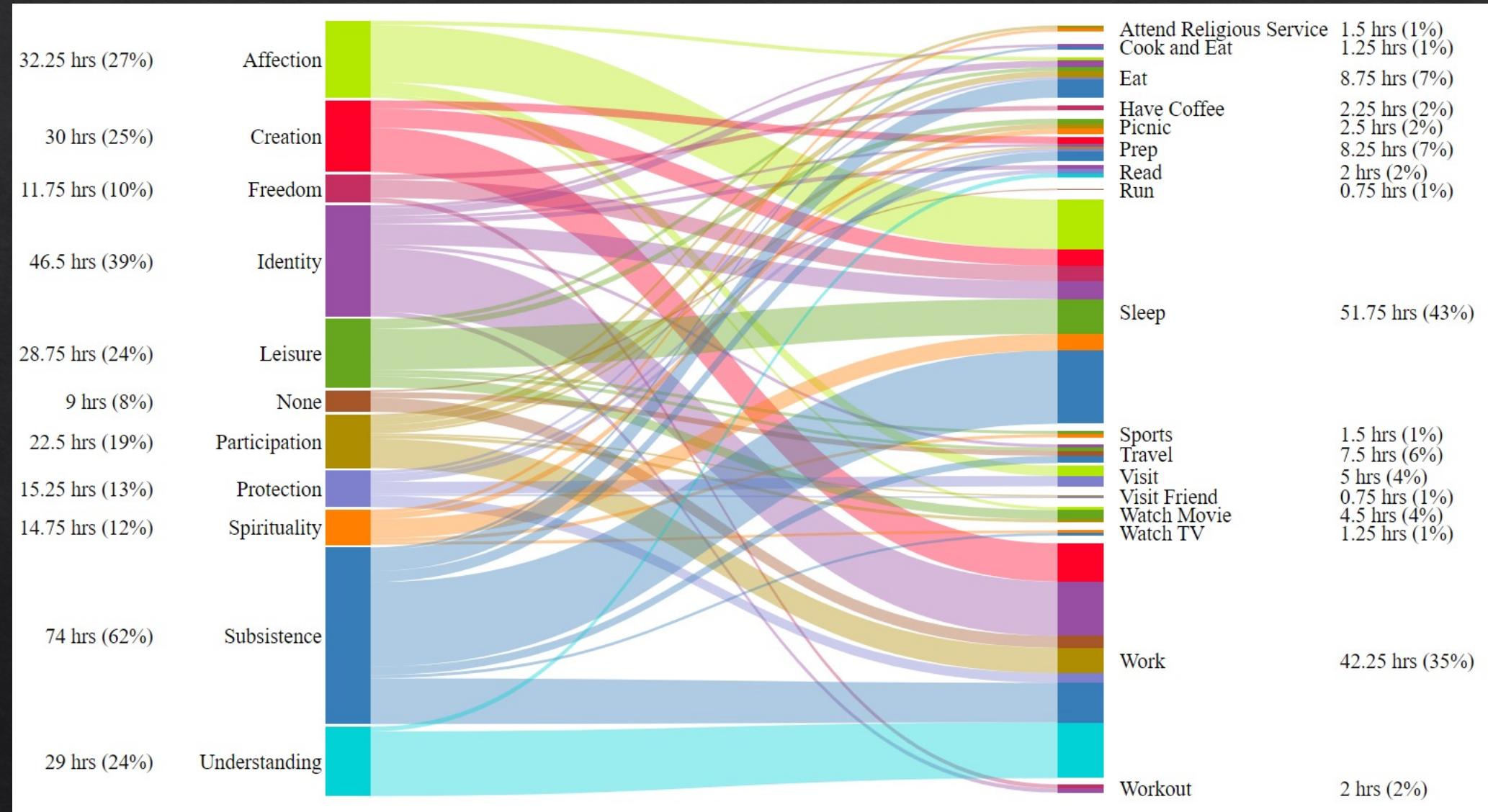
Designing personal informatics systems as problem solving interventions at various social scales

1. Personal development and sustainability
2. Dreaming and dream tracking
3. Mental health

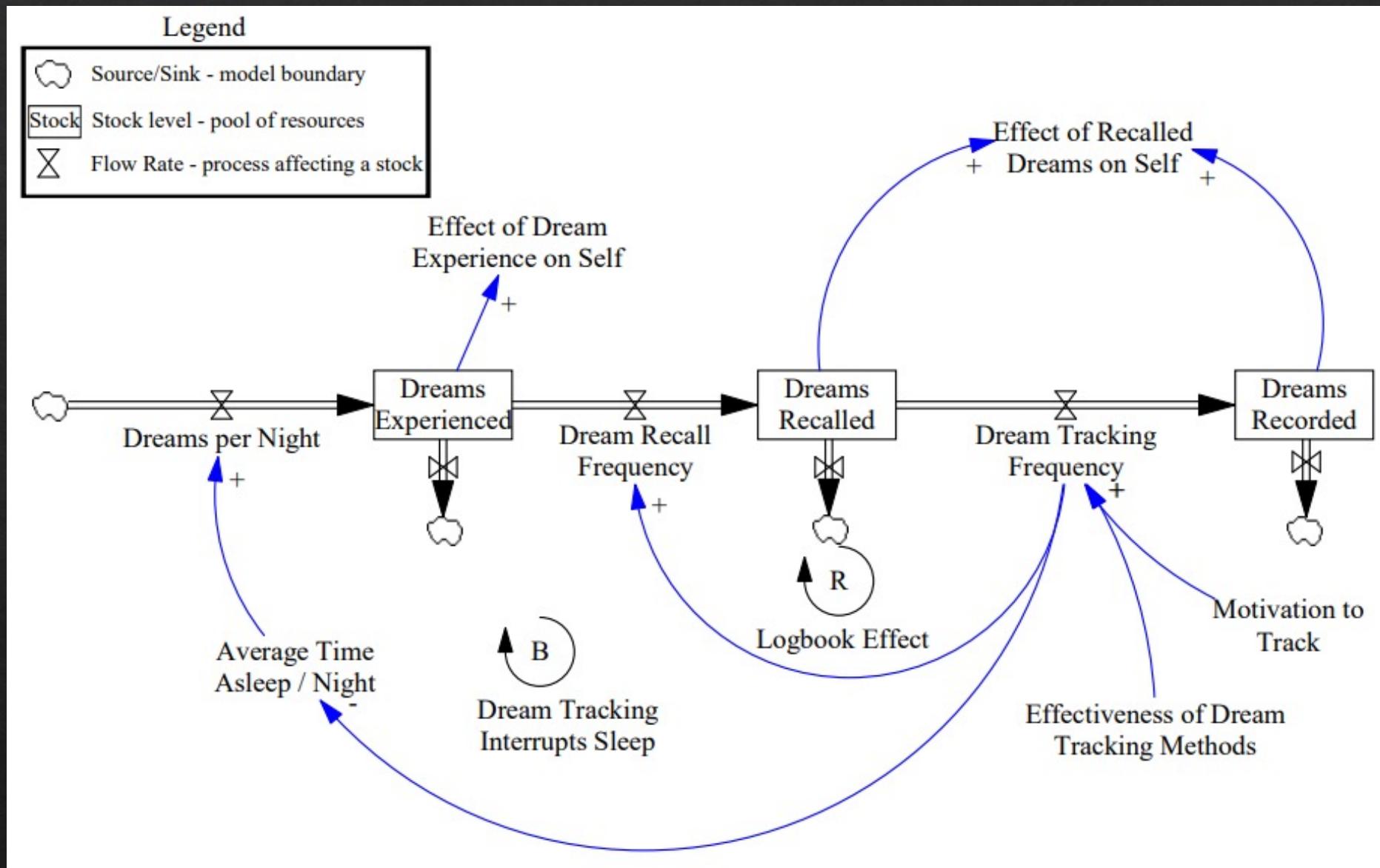
Personal Development and Sustainability



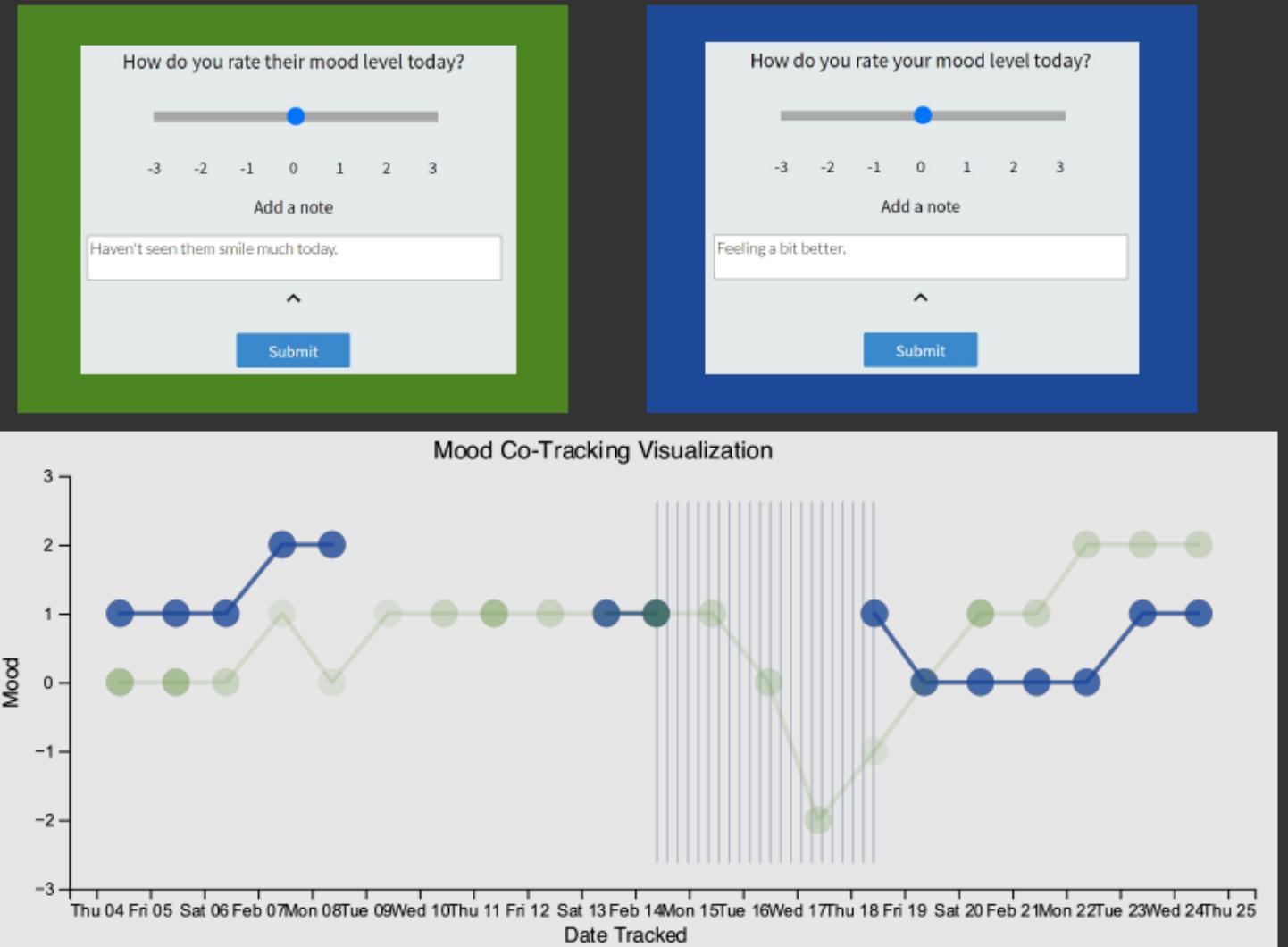
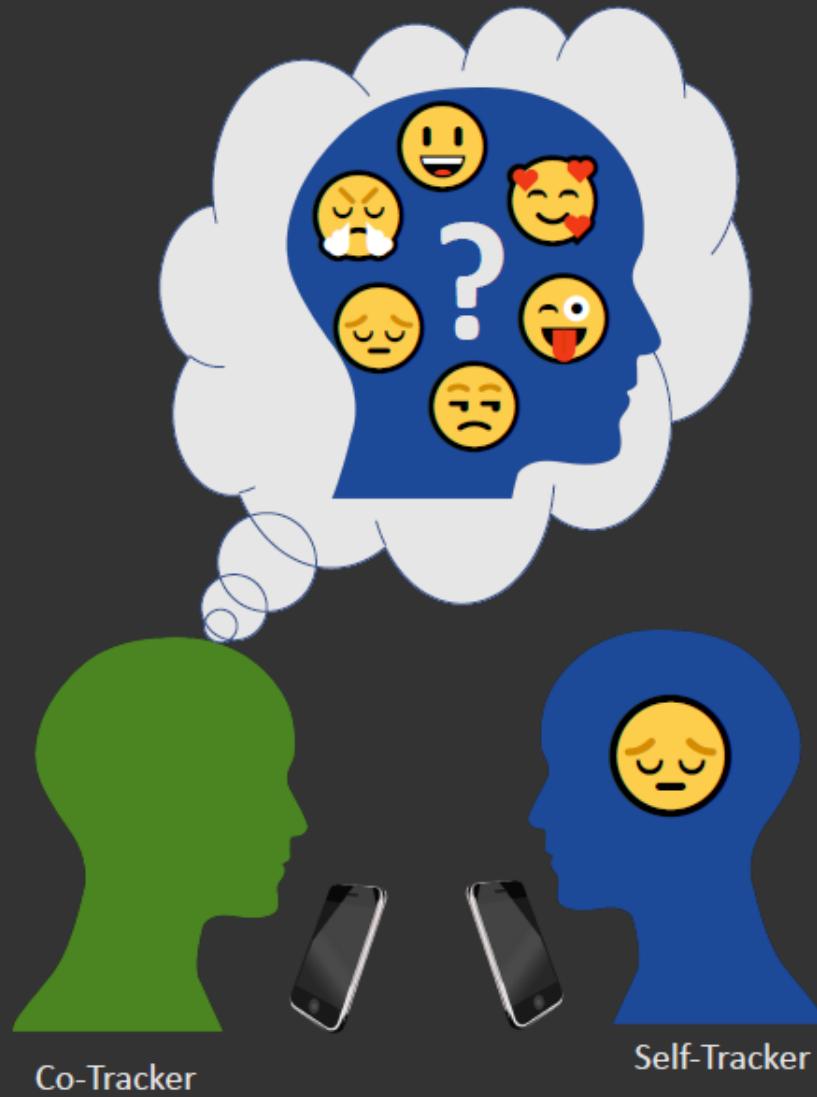
Personal Development and Sustainability



Dreaming



Co-Tracking Mood Data (Mental Health)



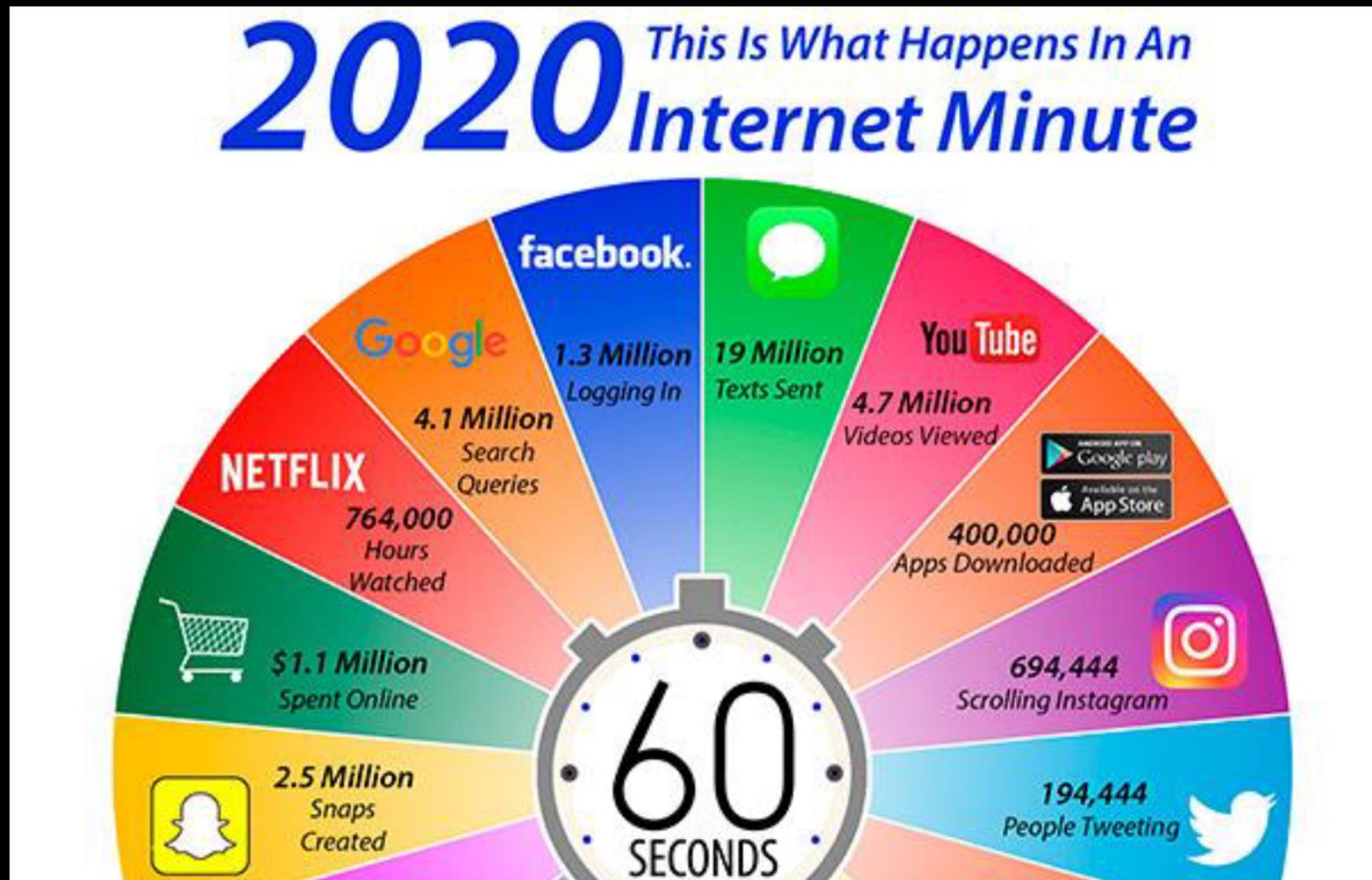
Why should I even take this class

CS1 - Starting Computing

Computing is any activity that uses computers to manage, process, and communicate information. [Wikipedia]

Computing is a requirement in virtually every industry and research field today. This has led to Computer Science having highly interdisciplinary applications and associations.

Applications: Media & Entertainment



Applications: Finance



Applications: NLP and AI

The image is a collage of various AI and NLP application interfaces, illustrating the practical applications of natural language processing and artificial intelligence.

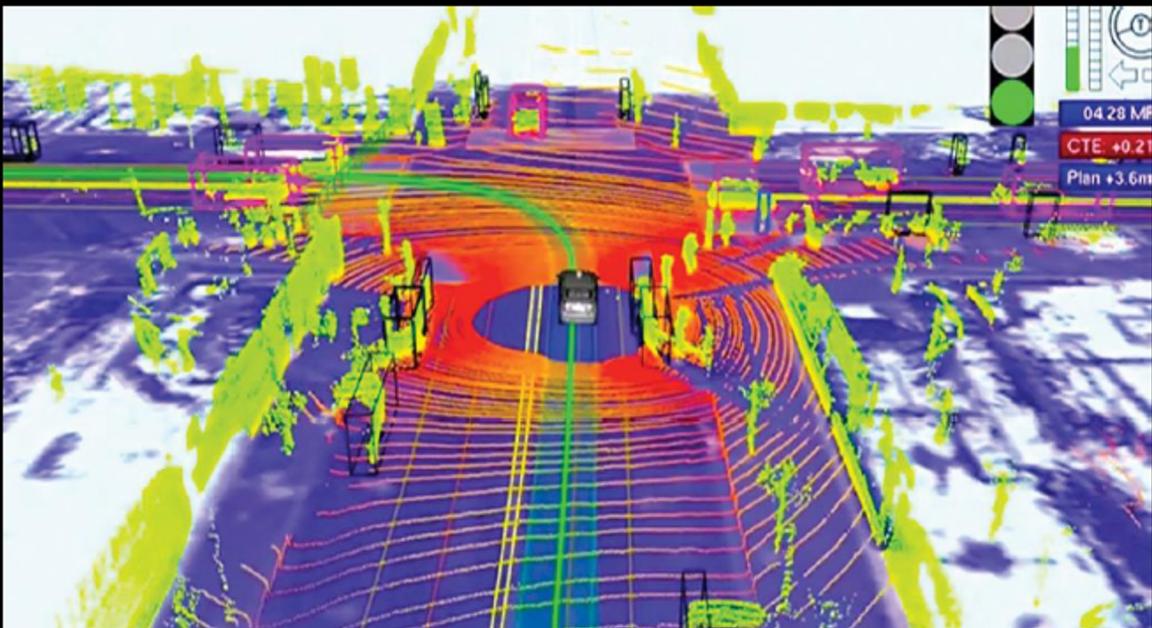
Left Panel: A man sits at a desk, interacting with a smartphone displaying a "FLIGHT BOT". The bot interface shows a conversation starting with "Let's look for tickets!", followed by travel details: "From New York To Seattle Departing on Sept 15 Returning on Sept 19 for 2 Adults". The user responds with "Is this info correct?" and "Yes". The bot then states "I have found 17 results" and offers to "See all results". A message input field at the bottom says "Type your message here...". The background features icons for travel, food, and business.

Top Right: Logos for Amazon Alexa (blue circle), Google Assistant (blue, red, and yellow circles), and Microsoft Cortana (blue circle).

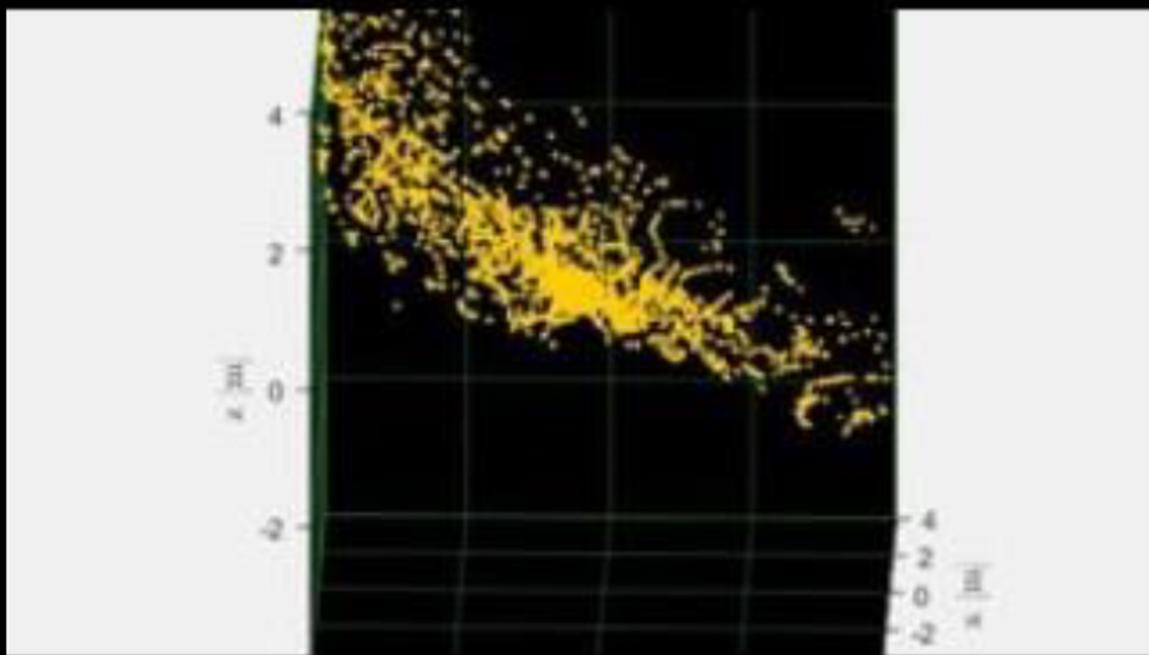
Middle Right: Logos for Bixby (blue and grey logo) and AliGenie (purple and blue logo).

Bottom Right: A screenshot of the Google Translate interface. It shows a translation from English to Spanish. The source text "Hello World!" is in the English section, and the translated text "Hola Mundo!" is in the Spanish section, accompanied by a checkmark. The interface includes tabs for "Text" and "Documents", and language selection dropdowns for English, Spanish, and Arabic.

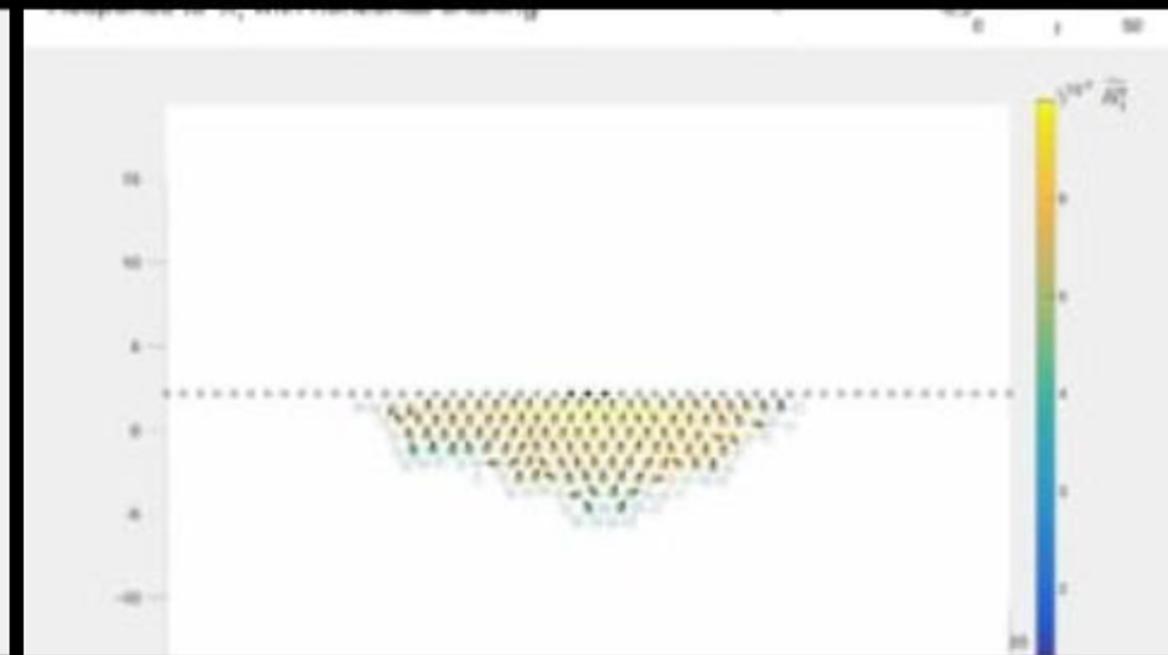
Applications: Robotics



Applications: Biological Behaviors



<https://www.peleglab.com/fireflies>



<https://www.peleglab.com/collective-mechanical-adaptation-in>

Application... Art?



**“A hand made
out of leaves”**



**“Earth being
crushed by the
closing lid of a
laptop”**



**“a cup of coffee that
has a man rowing a
boat through the ₁₅
coffee in the cup”**

What will we do in this course?

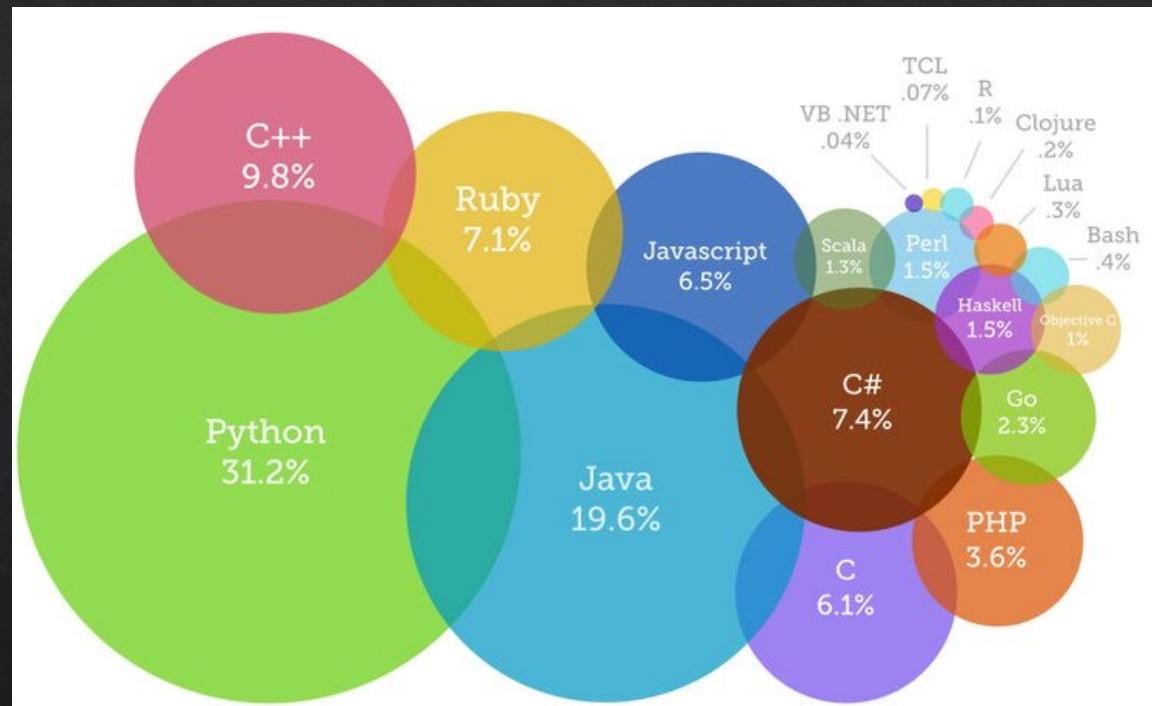
- ❖ Begin to learn computer science!
- ❖ The study of the principles and use of computers
- ❖ Discipline that spans **theory and practice**.
 - Think in both abstract and concrete terms
- ❖ Uses **computational thinking** to solve problems
- ❖ Makes computers do new things or accomplish tasks more efficiently

“Computer Science is no more about computers
than astronomy is about telescopes”

-Edsger Dijkstra

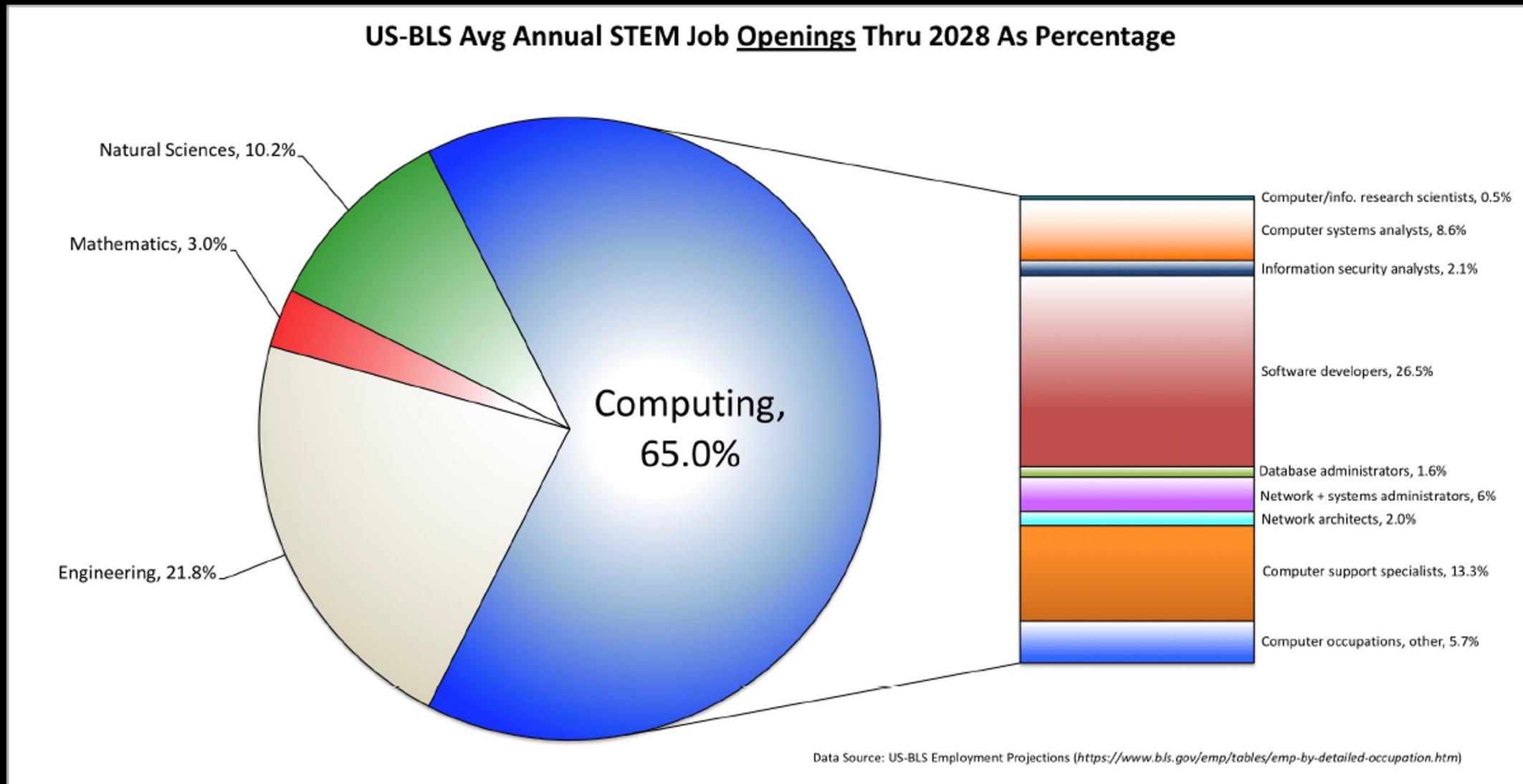
What is Computer Programming?

- ❖ The art/science of communicating and thinking with a computer
- ❖ Learning its languages
- ❖ Writing useful, maintainable, and extensible source code which can be interpreted by a computing system to perform a meaningful task
- ❖ Learned SKILL – everyone can do it



Job Openings Projection in STEM

<https://cs.calvin.edu/images/department/jobs/2028/>



Administrivia

Canvas

CSCI 1300 – CS 1: Starting Computing Fall 22

- ❖ Course syllabus
- ❖ Office Hours Calendar
- ❖ All assignments, lecture slides/videos and other course materials will be distributed through Canvas
- ❖ Check it regularly for updates!

Recent Announcements

[Home](#)[Course Materials](#)[Announcements](#)[Modules](#)[Assignments](#)[Quizzes](#)[Grades](#)[People](#)[My Media](#)[Zoom](#)

Welcome to Starting Computing!

Hello everyone, Welcome to Starting Computing! This is a 4 credit course with 3 lectures a...

Posted on:

Aug 21, 2022, 4:45 PM

CSCI 1300

Computer Science 1: Starting Computing

[!\[\]\(3bae9ad3e379f54a1004e2ee48ae35f1_img.jpg\) Start Here](#)[!\[\]\(e85be70154f341eceb83950a0b4ff5a0_img.jpg\) Syllabus](#)[!\[\]\(d3a27b594d1d5ac9aa58988501046ff2_img.jpg\) Schedule](#)[!\[\]\(263994d322ae2ba986be478731fe8606_img.jpg\) Office Hours](#)[!\[\]\(967be6d43b6c8f6921a979856ec23ba3_img.jpg\) Modules](#)[!\[\]\(78bc2f0aed5a74941394d8f9cb42a8ea_img.jpg\) Ed Discussion](#)[!\[\]\(12a743ddd08018d30bda7c8d48c9a0fc_img.jpg\) Instructional Team](#)[!\[\]\(45886135f152eb262d38c1c7e3bba9dc_img.jpg\) CU Resources](#)

Welcome to Computer Science 1: Starting Computing

CSCI 1300 is a 4 credit hour course that teaches techniques for writing computer programs in higher level programming languages to solve problems of interest in a range of application domains. The course is appropriate for students with little to no experience in

Communication

- ❖ Send ALL questions to csci1300@colorado.edu
- ❖ Eg: academic, accommodations, sports, travelling, health issues or concerns

The screenshot shows the syllabus page for CSCI 1300. At the top, there is a logo and the text "Syllabus: CSCI 1300". Below this, a callout box says "See all 6 tabs for all syllabus information". A red box highlights a specific section: "Please send all general course questions to: csci1300@colorado.edu". Below this, a note states: "As a member of the CU community you are expected to consistently demonstrate integrity and honor through your everyday actions." The page also includes sections for Professional Email Expectations, Tips for a professional email, and a list of guidelines for writing emails.

Syllabus: CSCI 1300

See all 6 tabs for all syllabus information

About the Course Assignments and Grading Course Requirements Collaboration Communication Course Policies

Please send all general course questions to: csci1300@colorado.edu

As a member of the CU community you are expected to consistently demonstrate integrity and honor through your everyday actions.

Professional Email Expectations

Respect faculty and staff policies regarding use of email and note that staff and faculty are not expected to respond to email outside of business hours. Send email messages to faculty and staff using a professional format.

Tips for a professional email include:

- Always fill in the subject line with a topic that indicates the reason for your email to your reader.
- Respectfully address the individual to whom you are sending the email (e.g., Dear Professor Smith).
- Avoid email or text message abbreviations.
- Be brief and polite.
- Add a signature block with appropriate contact information.
- Reply to email messages with the previously sent message. This will allow your reader to quickly recall the questions and previous conversation.

Computing

- ❖ We will use C++

Great mix of efficiency and ease of translating experience to other language later in your computing life

- ❖ Visual Studio Code

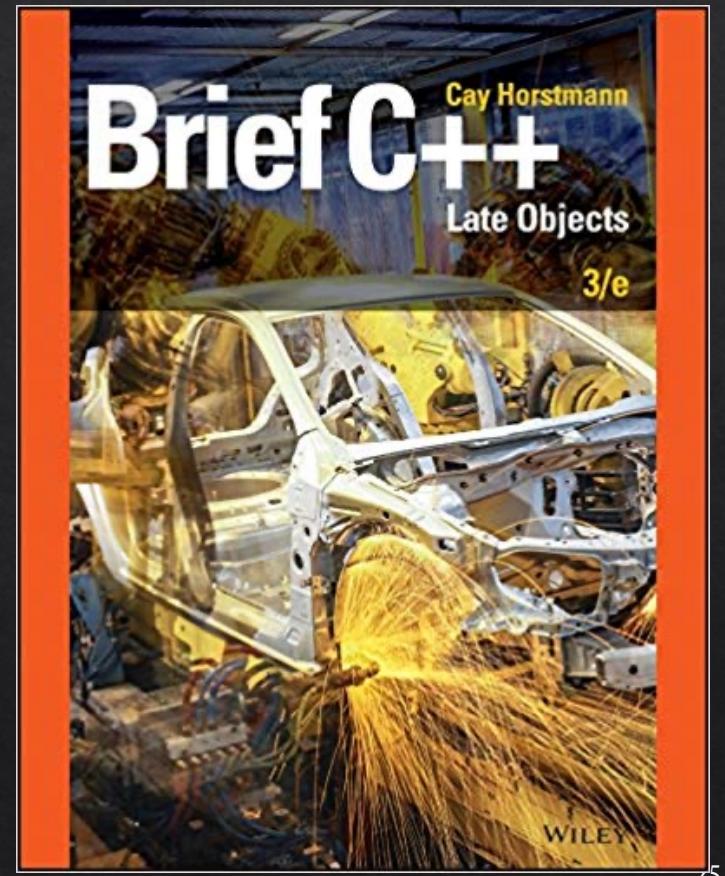
1. Nice interface to program
2. Debugger, all-in-one platform
3. Talk more later, and in recitation

Textbook – available through Canvas

Brief C++: Late Objects 3rd edition, by Cay Horstmann

- ❖ Only available in electronic form
- ❖ International, old and PDF editions are okay, but will lack online activities, which we will do in lecture and recitation

Additional reading will be linked to the course Modules as needed



Let's syllabus

You are responsible for knowing and reviewing:

- ❖ Practicum policy
- ❖ Assignments and late submission policy
- ❖ Attendance policy
- ❖ Classroom behavior
- ❖ Collaboration and honor code
- ❖ Office Hours policies
- ❖ Ed Discussion policies
- ❖ Interview policies
- ❖ Discrimination and harassment
- ❖ Disability accommodations
- ❖ Religious observances
- ❖ Sexual misconduct, discrimination, harassment and/or related retaliation

Let's syllabus

Workload:

- ❖ (380 points) homework, quiz, recitations -- weekly
- ❖ (325 points) projects -- 3x, worth 60p, 115p, 150p
- ❖ (250 points) programming practicums -- 50p, 100p, 100p
- ❖ (45 points) participation – Canvas quizzes and other activities

≥ 67% practicum average required to earn a C- or higher in the class – this means 167 total points (out of 250)

- ❖ Final exam – possibility of replacing practicum score(s)
- ❖ New score replaces old one even if lower

Let's syllabus

You are responsible for knowing and reviewing:

- ❖ Practicum policy
- ❖ **Assignments and late submission policy** →
- ❖ Attendance policy
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Back up your work!

- ☒ Google Drive
- ☒ Dropbox
- ☒ GitHub (private repository)
- ☒ No extensions in event where you didn't back up your work



Let's syllabus

You are responsible for knowing and reviewing:

- ❖ Practicum policy
- ❖ Assignments and late submission policy
- ❖ **Attendance policy** → **Recitation:**
 - Weekly, mandatory 75 minute lab with programming activities.
 - Ask questions about assignments and get extra help.
- ❖ Classroom behavior
- ❖ Collaboration and honor code
- ❖ Office Hours policies
- ❖ Ed Discussion policies
- ❖ Interview policies
- ❖ Discrimination and harassment
- ❖ Disability accommodations
- ❖ Religious observances
- ❖ Sexual misconduct, discrimination, harassment and/or related retaliation

Attendance Policy

- ❖ You must attend recitation each week
 - Your TA will take attendance
- ❖ Recitation materials will be posted on Friday the previous week
 - Weekly graded discussion will happen in recitation
 - Time to work on recitation assignments and ask questions
- ❖ If you need to miss recitation, make arrangements to go to another recitation: email both TAs and cscil300@colorado.edu
- ❖ If you need to quarantine, you need to email your TA, and cscil300@colorado.edu.

Getting help outside lectures

Office Hours calendar on Canvas (TAs, LAs, instructors) – in-person

- ❖ *Learning Assistants (LAs)*

- Undergrads who took this class and love programming. Many of them will lead recitations!

- ❖ *Teaching Assistants (TAs)*

- Graduate students who are enthusiastic and excited about teaching!

- Lead recitations, help grade, develop materials, field questions on ED, office hours

Ed Discussion

Invite link on Canvas

Announcements will be posted here

- ❖ Ask questions in Q & A forum (and answer other students' questions!)

There are hundreds of you and only a few of us -- get answers faster

- ❖ Discuss work, but **do not post solutions/vital code**
- ❖ Send **private** messages to TAs and faculty

Let's syllabus

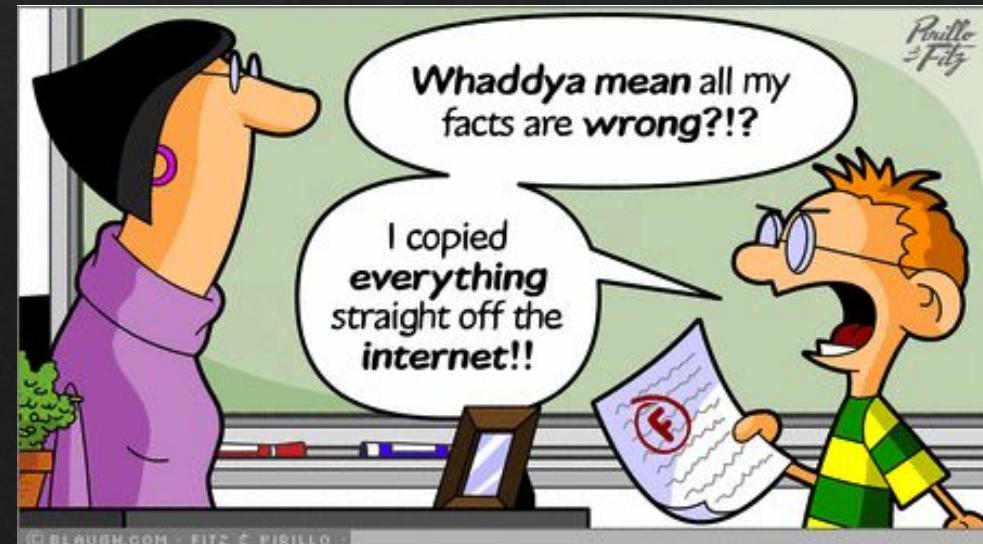
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Academic Integrity

See the Course Policies tab on the Syllabus page for more details. Here are some highlights.

- “Examples of cheating include: copying the work of another student during an examination or other academic exercise (includes computer programming)”
- “Examples of plagiarism include: [...] copying information from computer based sources
- If in doubt, ask us if it’s permitted.



Riding the struggle bus

It's ok to struggle (we all did and still do)

When you're asking for help, be sure to explain...

- what you're trying to do
- what you think should happen
- what you get instead (copy/pastes or screenshots work well)
- what all you have tried
 - if you haven't tried anything, try something first
- use **private** Ed posts (post a “Note”) to Instructors if it includes possible solution code



Don't be stuck! Post on Ed, get help during Office Hours!

New Thread

Search

Cancel

New Question

Schedule Post

COURSES



Welcome!

Filter

General Supriya Naidu INSTRUCTOR 5h

13

Title

Category

General Lecture Recitation Homework Project Practicum
Quiz Error Logistics

Subcategory

H0 H1 H2 H3 H4 H5 H6 H7 H8

Paragraph

Which part of the homework are you working on?

TODO

What problem are you having and what have you tried so far? Describe the problem in detail and include any relevant screenshots, error messages and small snippets of code

TODO

Pinned

Keep at top of thread list

Private

Visible to you and staff only

Anonymous

Hide your name from students

37

Riding the struggle bus

Life is hard. We want to help however we can.

- ❖ Reach out **before** things get too bad. After is also better than going at it alone.
- ❖ Students of Concern Team -- <https://www.colorado.edu/studentaffairs/student-concern>
- ❖ Student Support and Case Management --
<https://www.colorado.edu/studentaffairs/sscm>
- ❖ Counseling and Psychological Services -- <https://www.colorado.edu/counseling/>
- ❖ The **Red Folder** -- <https://www.colorado.edu/redfolder/>

Due this week

- Read the Syllabus on Canvas
 - Take the **Syllabus Quiz**.
- Homework 0 - **Install VS Code**
 - Tutorials and videos on Canvas, based on the operating system of your computer
- Recitation 0
 - Run example projects from last semester
- Quiz 1 on Canvas
 - Questions about content covered in lecture during week 1
- Check the due dates!!!

Next time

- ❖ Algorithms and Pseudocode

Pedagogy

How we teach

A

There is
a
problem
!



B

You have
solved the
problem
with a
program

Goal

- ❖ Develop *adaptive expertise* for problem solving with computers
- ❖ “The ability to apply meaningfully-learned knowledge and skills *flexibly and creatively in different situations*. This goes beyond acquiring mastery or routine expertise in a discipline...”
- ❖ “*Involves the willingness and ability to change core competencies* and continually expand the breadth and dept of one’s expertise”

Guided Learning: the teachers take the main relevant decisions about the goals of learning, learning strategies, and how to measure outcomes, while taking care of feedback, judgements and rewards.

- ❖ CodeRunner questions (homework, practicum, first two projects)
- ❖ Quizzes
- ❖ Some recitation activities

Action Learning: the learners play a much more active role in determining the objectives of the learning than in guided learning; there is a strong element of learner self-organisation and self-planning.

- ❖ Final Project
- ❖ Some recitation activities

Experiential Learning: this is not controlled by teachers and there are no predetermined objectives. What is learned is determined by context, learners' motivations, the others with whom they come in contact, discoveries made, etc. It is a by-product of the activities in which people are involved.

- ❖ This is up to you!

A

There is
a
problem
!



B

You have
solved the
problem
with a
program

Your Toolkit

- ❖ Your destination – the assignment description
- ❖ Your planned route – writing diagrams and pseudocode
- ❖ Your flashlight and binoculars – debugger
- ❖ Your guidebook – the internet! (Google, Stack Overflow, etc)
- ❖ Your travel partners – others students in the course (friends, study groups, etc)
- ❖ Private guides – teaching assistants and instructors

A

There is
a
problem
!



B

You have
solved the
problem
with a
program

