Assignment #1: Golden Ratio, Olympics, & Stars

- Variables and assignment
- Mathematical computations
- Vectors
- Plotting
Assignment #2: Conditionals, Colon Notation, Analyze/Visualize Ocean/Smartphone Data

- Conditionals
- Cell arrays
- Indexing & colon notation
- Logical values and expressions
- Data analysis and visualization

Assignment #3: Mystery, Thatcher Illusion, Gradesheets, Energy Data & Face Recognition

- Matrices
- Real and synthetic images
- Tables of data
- Image processing
Assignment #4: Spirograph, Pole Vault, cftool, Spread of Disease

- Curve fitting & parameterized equations
- Loops
- User-defined functions
- Regression models
- Simulating models

Assignment #5: Facebook Friends, Favorite Songs, Rising Data

- Structures & storing structures in a vector
- while loops
- colormaps

```matlab
>> printStudentInfo(students)
andrea’s favorite song is "Dark Horse" and she has 43 Facebook friends

>> mostFacebookFriends(students)
nora has the most Facebook friends, with 142
```

Average Monthly Temperatures in Baton, 1980-2014

Daily Dow Jones Industrial Averages, 51 Weeks
Assignment #6: GUI Sketchpad & Making Music

- Structures
- Graphics handles
- Properties
- GUIs
- Layout editor

Assignment #7: Thumbnails & Parlez-vous Francais?

- Reading/writing files
- Working with directories
- Analyzing textual data
- Cell arrays
- Frequency statistics

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Spanish 19.19: entre bruma y bruma, la verdad se asoma
German 36.33: viele kuchen werden den brei
Finnish 21.68: ihmekakselkin voi toivossa mutta alla lutea nihkin
French 13.04: il faut boire le fer pendant qu’il est chaud
English 10.55: this great english sentence is too long and trite
Italian 10.28: con piacere volgo l’occasione di ringraziare tutti gli amici italiani che con i loro consigli
Assignment #8: Mobius Strip, Campus Places, Reaching for the Stars

- Types of numbers
- Color images & colormaps
- 3D visualization

What else is there in CS?

- Having taken CS112, you have the tools to solve fundamental problems with computer programs
- In future computational courses, you can investigate more complex and creative problems
What next in CS?

- CS 111 Computer Programming and Problem Solving
  - CS 112 Computation for the Sciences
    - CS 220 Human-Computer Interaction
      - CS 240 Introduction to Machine Organization
        - CS 332 Visual Processing by Computer and Biological Vision Systems
  - CS 249 Data Analytics and Visualization
    - CS 313 Computational Biology