


# COMP 141

CS1: Programming Fundamentals



1

## What is Computer Science?

### What do you hope to learn in this class?

2

## What is Computing?


Computing: Word, Excel, etc.

Computing: internet, e-mail, network...

Computing: Digital Photography

Computing: Entertainment...

Computing: Entertainment...



4


## Cutting Edge Computer Science

Measuring the Edge

2011 Jeopardy!

Google's Autonomous Car

3D PRINTING



- In February 2011, IBM Watson (winner) and Ken Jennings (longest streak) currently applying Watson research
- Nvidia made announcements made in June California is similar bill

4

## Areas in Computer Science

Artificial Intelligence

Robotics

Human-Computer Interaction

Computer Graphics

Computer Vision

Operating Systems

Computer Networking

Databases

Computer Security

Ubiquitous Computing

5

## What is Computer Science?

**Computer science** is the study of **solving problems** using **computation**.

- Computers are part of it, but the emphasis is on the problem solving aspect.

A computer scientist is a **problem-solver**.

**Computer Scientists work across disciplines**

Mathematics	Geoscience	Medicine/Surgery
Biology (bioinformatics)	Archeology	Engineering
Chemistry	Psychology	Linguistics
Physics	Sociology	Art
Geology	Cognitive Science	...

6

## Why Study Computer Science?

1,000,000 more jobs than students by 2020

Computer science is a **top paying college degree** and computer programming jobs are growing at **2X the national average**.

<http://code.org/promote>

7

## Computing is Consistently Ranked Among the Best Occupations

The value of a computer science education

A computer science major can earn **40% more** than the college average.

Code.org

Top 10 Best Jobs in America 2017 – money.cnn.com

1. Mobile App Developer	6. QA Coordinator
2. Risk Management Director	7. Clinical Applications Specialist
3. Landman	8. Hospital Administrator
4. Product Analyst	9. Database Analyst
5. Info Assurance Analyst	10. Director, Finance & Administration

**CS Careers Rank Highly In:**

- Job satisfaction
- Growth potential
- Salary
- Employment rate
- Work/life balance
- Work environment

## Why Study CS at Rhodes?

"Everyone should learn how to program a computer, because it teaches you how to think. I view computer science as a liberal art, something everyone should learn to do." -Steve Jobs

- Liberal arts background is great!
- Employers want to see:
  - Communication skills (written & verbal)
  - Strong work ethic
  - Teamwork skills (works well with others)
  - Initiative
  - Interpersonal skills (relates well to others)
  - Problem-solving skills

10

## Things to Remember

1. Computers are dumb!
2. Computers only do what you tell them to do.
3. Computer do what you tell them to do really fast, so they appear smart (but they are not).
4. Computer don't remember anything unless you tell them how to remember.
5. Computers take your instructions literally. If you tell them to do something dumb, they do it.
6. A computer only does what it is told and in exactly the order you tell it.

11

## Syllabus

- <http://cs.rhodes.edu/welshc/CS141/F19/syllabus.pdf>



12

## Fun Activity

- Go to **Start -> All Programs -> Computer Science and Math Programs -> Python 3.4**
- Open **IDLE (Python 3.4 GUI -32-bit)**
- Type the following (use the exact capitalization as shown):
 

```
>>> import turtle
>>> turtle
>>> sven = turtle.Turtle()
>>> sven.forward(100)
>>> sven.right(90)
>>> sven.forward(50)
```
- Try other commands
  - forward, backward, right, left
  - sven.color('blue')
  - sven.pensize(3)

13

## Homework 0

- Tell me about yourself.
  - Fill out the “Getting to Know You” worksheet
- Make sure you have this class in your course list on Moodle.
- Due Friday, 8/23 at beginning of class

14