

\$ Python Boot Camp I

Basic Programming

Computational Biology

Lecture 5

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Why learn computer programming?

- Create software to analyze your data
- Precise control of analysis
- Anybody, anywhere can reproduce your findings.



```
return portNext;

prevItem: function( portPostId ){
  var portPrev = '';
  var hasPrev = $('#'+ portPostId).prev()
  if( hasPrev.length != 0 ) {
    portPrev = hasPrev.attr('id');
  }
  return portPrev;
}

initializeAjax: function( portPostId ){
  postPortId = $('#'+ portPostId);
  prevPortId = $('#'+ portPrev);
  prevPortId.attr('id', portPrev);
}
```

How I chose the computer languages for this course

- The languages I use in Biology
 - Bash, R, Python
- The languages other professors at TAMUCC use
 - See the languages I use
- The top languages desired by companies that are hiring data scientists
 - Python, R, MySQL



Each Language Has Strengths and Weaknesses

- Bash
 - Control the computer
 - Simple file manipulation
- Python
 - Modern, Easy-to-learn
 - Data manipulation
 - Prototyping
 - Small-scale programming tasks
- R
 - Statistics and mathematics
- All are slow compared to primary languages like C



The Second Third of Course is on Python

- Great text string manipulation
- Free and well documented
- Enforces good programming style and practices
- Topics covered in this chapter
 - Variable assignment
 - Data structures
 - Program flow
- Concepts are relevant to all languages

