CS177 Python Programming

Recitation 1 – All you need to know
Welcome to CS177
Course Instructors

• Prof. Vernon Rego
  E-mail: rego@cs.purdue.edu

• Ruby Tahboub (Course Coordinator)
  E-mail: rtahboub@purdue.edu
  Office: LWSN 2149 #20
GTA Information

http://courses.cs.purdue.edu/cs17700:spring16:start
Course Syllabus

• http://courses.cs.purdue.edu/cs17700:spring16:syllabus

• Class notes, labs and projects will be posted there.
Course Structure

• Lecture 2 times a week
• Recitation once a week.
• Lab once a week.
• We will take attendance
Textbook

Labs

- Weekly lab consists of 3-4 problems
- Lab exercises focus on the material covered the week before
- Sometimes a new concept might be introduce in lab, follow up with your lab TA
- You are encouraged to do the prelab
Projects

• Four projects + Project 0
• You will be writing longer programs than those of labs
• Use language features you learned in class
• Start early!
## Grade Distribution

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterms</td>
<td>25%</td>
</tr>
<tr>
<td>Laboratories</td>
<td>25%</td>
</tr>
<tr>
<td>Projects</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
</tbody>
</table>
Attendance Policy

- A total of 4 absences whether in recitation or lecture will incur a 2% penalty.
What do you need?

• Download Python (highly recommended) https://www.python.org/download

• Piazza – Sign up by visiting CS17700 on Piazza.
Piazza

• We want to hear about your issues and get feedback, a good piazza post is:

subjective, states the facts, addresses the shortcomings, proposes solutions with a positive tone.

• Notice that post authors are not anonymous to class instructors
Academic Integrity Policy

• All CS 177 course work must be done individually
• CS 177 uses MOSS tool to verify the integrity of submissions
• In CS 177 a first instance of academic dishonesty will result in a zero for that assignment plus a letter grade deduction at the end of the semester.
• A second instance of academic dishonesty will result in a grade of F.
Objectives

• To learn how to write computer programs.
• To learn how to use the Python programming language.
What is a Computer Program

- What is a *computer program*?
  - A detailed, step-by-step set of instructions telling a computer what to do.
  - If we change the program, the computer performs a different set of actions or a different task.
  - The machine stays the same, but the program changes!
Using python

- Go to Start > Search “python”
- Click on IDLE (Python GUI)
- First window opens
- Click File > New Window
- Second window open
- Always write code in this window
- Don’t forget to save
What can python do?

- Simple calculations
  >>> a=5
  >>> b=4
  >>> 4=x  **(WRONG)**
  >>> c=a+b
  >>> c
  9

- Print Statement
  >>> print(“Hi”)
  Hi
  >>> print(c)
  9
  >>> print(a,c)
  5 9
Let’s write a simple program

# by John Smith
# This program calculates sum of # 2 numbers

def main():
    a = 4
    b = 5
    c = a + b
    print(a,"+",b,"="\n    main()

main() 

Output

>>>4 + 5 = 9

main function serves as an entry point to your program

invoking main within program, what happens in case this statement is omitted?
Reading input from User

- `input` ("prompt message") is used to read input from user:

```python
myInput = input("Type something\n")
print ("This is what you typed:"")
print ("You typed:" , myInput)
```

Output:

```
Type something
Welcome to CS177
This is what you typed:
You typed: Welcome to CS177
```

Tip: the type (or representation) of the outcome of input is “text”, you need to used function `eval` to convert text to numeric
Reading “numeric” input from User

```python
value = input("Type value\n")
value = eval(value)
print (value)
print(value + 10)
```

Output:
```
Type value
10
10
20
```

What happens if eval (i.e., the second line) was omitted?
Exercise: Simple Calculator

• Write a simple Calculator program that prompts the user to input two numbers and then performs addition, subtraction, multiplication and division

Sample output

Enter First number: 5
Enter Second number: 10
Result after ADD: 15
Result after SUB: -5
Result after MUL: 50
Result after DIV: 0.5
Project 0

http://courses.cs.purdue.edu/cs17700:spring16:projects:project0

• A Warm up exercise.
• You will exercise writing a python program on your own
• You will learn how to correctly submit your work using turn-in command.
• After Project 0, incorrect submissions will be penalized 5% of grade
Finally …

- Learning programming is fun and can be useful regardless major.
- IDLE is your friend
- Ask a lot of Questions