Days of programming can save you hours of planning.

Week 3
• Questions
• Functions, cont’d
• New data type: strings
• Input/Output
• Python modules
• Turtle graphics

An Algorithm for Succeeding in CIS 122
0. Skim the assigned reading
1. Reading and class prep work:
   1a. Read the assigned reading closely
   1b. Try Python code from assigned reading
   1c. Try the exercises at the end of the chapter.
2. Come to class with questions from step 1.
3. Project work outside of class:
   3a. Review solution key to prior problem set.
   3b. Start working on the weekly problem set.
   3c. Attend lab and lab help hours.

Functions Concepts Checklist
• Python built-in functions
• combining functions
• user-defined functions
• keywords (def, return)
• parameters, arguments
• local variables
• defining v. calling
• memory model/namespace
• function design recipe
• functions return a value

Another data type - Strings
>>> "97403"
'97403'

>>> type("97403")
<class 'str'>

Another data type - Strings
>>> "97403"
'97403'

>>> 'hello, world'
'hello, world'

Another data type - Strings
>>> 97403

>>> Lincoln
Another data type - Strings

```python
>>> str(97403)
'97403'

>>> "Lincoln"
'Lincoln'
```

String operators + and * are overloaded operators

```python
>>> "try" + "this"
"try this"

>>> "try this" * 4 + "ok"
```

Strings are sequences of characters

```
"hello, world"
0 1 2 3 4 5 6 7 8 9 10 11
```

```python
>>> greeting = "hello, world"
>>> len(greeting)
12
```
String methods

Methods are type-specific functions

Methods have syntax that shows their relationship to a specific type (object)

```python
>>> greeting = "Bonjour, tout le monde"
>>> str.index(greeting, 't')
```

Though more typically:

```python
>>> greeting.index('t')
```

Python Input and Output

Another function that works on strings:

```python
>>> print('hello, world')
```

Python 3 Output

print is a function – but different

it returns a special value
"Programs must be written for people to read, and only incidentally for machines to execute."

**Week 3**
- Questions
- New data type: strings
- Output/Input [print v. return]
- Python modules
- Turtle graphics

```python
def friendly(name):
    greeting = 'hello,' + name
    return greeting

>>> friendly('CIS122')
>>> message = friendly('CIS122')
>>> message
```

```python
def friendly(name):
    greeting = 'hello,' + name
    print(greeting)
    return greeting

>>> friendly('CIS122')
>>> message = friendly('CIS122')
>>> message
```

```python
>>> name = input()
```

```python
>>> name = input()
CIS 122
```
Python Input and Output

```python
>>> name = input('What is your name? ')
'What is your name? ' CIS 122

>>> name
'CIS 122'
```

Python Input and Output

```python
def hello():
    ""
    ""
    name = input('What is your name? ')
    print('hello,', name)
    return #None
```

Python Input and Output

```python
>>> days_in_month = input('How many days? ')
How many days? 30

>>> days_in_month
'30'
```

Python Input and Output

```python
>>> days_worked = int(input('How many days? '))
How many days? 30

>>> days_worked
30

>>> days_worked * 74
2220
```