CIS 1051 Introduction to Programming in Python **Summer II 2014**

Lecture 1: July 7

Lecturer: Anwar Mamat

1.1 Syllabus Overview

- programming assignments
- midterm exam
- final exam

1.2 Python and Eclipse Setup

1.3 C++ vs JAVA vs Python

1.4 Code Examples

Listing 1: Hello World: helloworld.py

```
1 #!/usr/bin/local/python3.4
2 print("hello world")
```

Listing 2: variables

```
1  #!/usr/bin/local/python3.4
2  a=10
3  print(a)
4  print(type(a))
5  print(id(a))
6  b=10
7  print(type(b))
8  print(id(b))
9  a="CIS1051"
10 print(a)
11 print(type(a))
12 print(id(a))
```

Listing 3: Fahrenheit to Celsius Convert

```
1 #!/usr/local/bin/python3.4
2 # This program converts Fahrenheit to Celsius
```

```
3  def F2C(f):
4      c = round(5/9 * (f - 32),2)
5      return c
6
7  def main():
8      fahrenheit = int(input("Enter Fahrenheit Value:"))
9      celsius = F2C(fahrenheit)    //call function F2C
10     print("Fahrenheit {} = Celsius {}".format(fahrenheit,celsius))
11
12 main()
```

Listing 4: Python Turtle Example

```
1  #!/usr/local/bin/python3
2  import turtle
3  def drawSquare(side,degree):
4      t = turtle.Turtle()
5      t.right(degree)
6      t.pencolor('red')
7      t.forward(side)
8      t.right(90)
9      t.forward(side)
10     t.right(90)
11     t.forward(side)
12     t.right(90)
13     t.forward(side)
14     t.right(90)
15
16 def drawTriangle(side):
17     t = turtle.Turtle()
18     t.forward(side)
19     t.right(120)
20     t.forward(side)
21     t.right(120)
22     t.forward(side)
23     t.right(120)
24
25 def main():
26     for i in range(1,360,10):
27         drawSquare(100,i)
28
29 main()
30 a= input("enter a number")
```

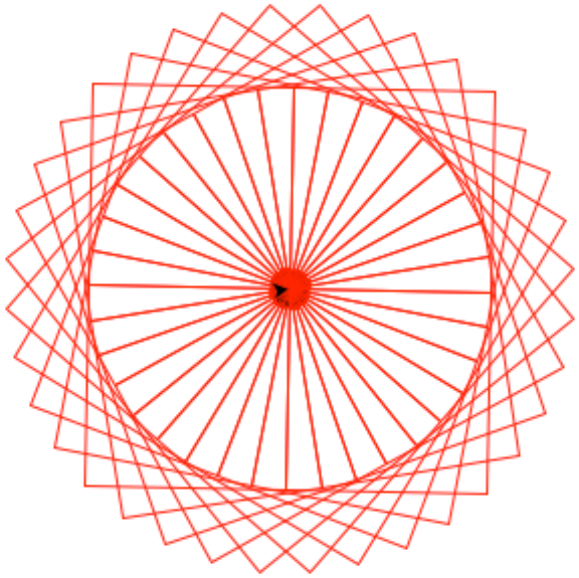

Figure 1.1: Python turtle output

Listing 5: Cubic number example

```
#!/usr/local/bin/python3
#List all 3-digit numbers, such that abc=a^3+b^3+c^3
def cubic():
    for i in range(100,1000,1):
        h = int(i / 100)
        t = int((i \% 100)/10)
        o = i \% 10
        if (h**3+t**3+o**3==i):
            print("{}^3+{}^{}^3={}".format(h,t,o,i))

cubic()

Output:

1^3+5^3^3=153
3^3+7^0^3=370
3^3+7^1^3=371
4^3+0^7^3=407
```

Listing 6: calculate pi

```
#!/usr/local/bin/python3
# calculate pi using Leibniz formula
# pi/4 = 1/1 - 1/3 + 1/5 - 1/7 + 1/9 + ...
```

```
4  def leibniz(n):
5          p = 0
6          sign = 1
7          for i in range(1,n,2):
8                  p += (1 / i) * sign
9                  sign = sign * -1
10         return p * 4
11
12 print(leibniz(10000))
13 ---------------------------------------
14 output:
15 3.141392653591791
```