COMP 312 Assignment 4

Daniel Braithwaite

April 4, 2016

1 Python

1.1 Problem A

```
from SimPy.Simulation import *

class Person(Process):
        def visit(self, timeInMuseum):
                print now(), self.name, " This is new"
                yield hold, self, timeInMuseum
                print now(), self.name, " Nice Place!"

maxTime = 100.0
timeInMuseum = 10.0;

print "Kathy (a)"
initialize()
c = Person(name="Kathy")
activate(c, c.visit(timeInMuseum), at=0.0)
simulate(until=maxTime)
```

1.1.1 Output

Kathy (a) 0 Kathy This is new 10.0 Kathy Nice Place!

1.2 Problem B

```
from SimPy.Simulation import *

class Person(Process):
        def visit(self, timeInMuseum):
                print now(), self.name, " This is new"

                for i in range(len(timeInMuseum)):
                        print now(), self.name, " Look!, number", i
                        yield hold, self, timeInMuseum[i]

                print now(), self.name, "mm"

maxTime = 100.0
timeInMuseum = [4.5, 5.5];

print "Kathy (b)"
initialize()
c = Person(name="Kathy")
activate(c, c.visit(timeInMuseum), at=0.0)
simulate(until=maxTime)
```

1.2.1 Output

Kathy (b) 0 Kathy This is new 0 Kathy Look!, number 0 4.5 Kathy Look!, number 1 10.0 Kathy mm

1.3 Problem C

```
from SimPy.Simulation import *
import random

class Person(Process):
        def visit(self, timeInMuseum, p):
                print now(), self.name, " This is new"

                print now(), self.name, " Look!, number 0"
                yield hold, self, timeInMuseum[0]

                c = random.random()
                i = 1
                if c > p:
                        i = 2


                print now(), self.name, " Look!, number ", i
                yield hold, self, timeInMuseum[i]

                print now(), self.name, "mm"

random.seed(99999)
maxTime = 100.0
p = 0.4
timeInMuseum = [4.5, 5.5, 7.5];

print "Kathy (c)"
initialize()
c = Person(name="Kathy")
activate(c, c.visit(timeInMuseum, p), at=0.0)
simulate(until=maxTime)
```

1.3.1 Output

Kathy (c) 0 Kathy This is new 0 Kathy Look!, number 0 4.5 Kathy Look!, number 1 10.0 Kathy mm

1.4 Problem D

```
from SimPy.Simulation import *
import random

class Person(Process):
        def visit(self, timeInMuseum, p):
                print now(), self.name, " This is new"

                print now(), self.name, " Look!, number 0"
                yield hold, self, timeInMuseum
                print now(), self.name, "mm"

                c = random.random()
                while c < p:
                        print now(), self.name, " number 0"
                        yield hold, self, timeInMuseum
                        print now(), self.name, "mm"

                        c = random.random()


random.seed(99999)
maxTime = 100.0
p = 0.4
timeInMuseum = 4.5

print "Kathy (d)"
initialize()
c = Person(name="Kathy")
activate(c, c.visit(timeInMuseum, p), at=0.0)
simulate(until=maxTime)
```

1.4.1 Output

Kathy (d) 0 Kathy This is new 0 Kathy Look!, number 0 4.5 Kathy mm 4.5 Kathy number 0 9.0 Kathy mm 9.0 Kathy number 0 13.5 Kathy mm