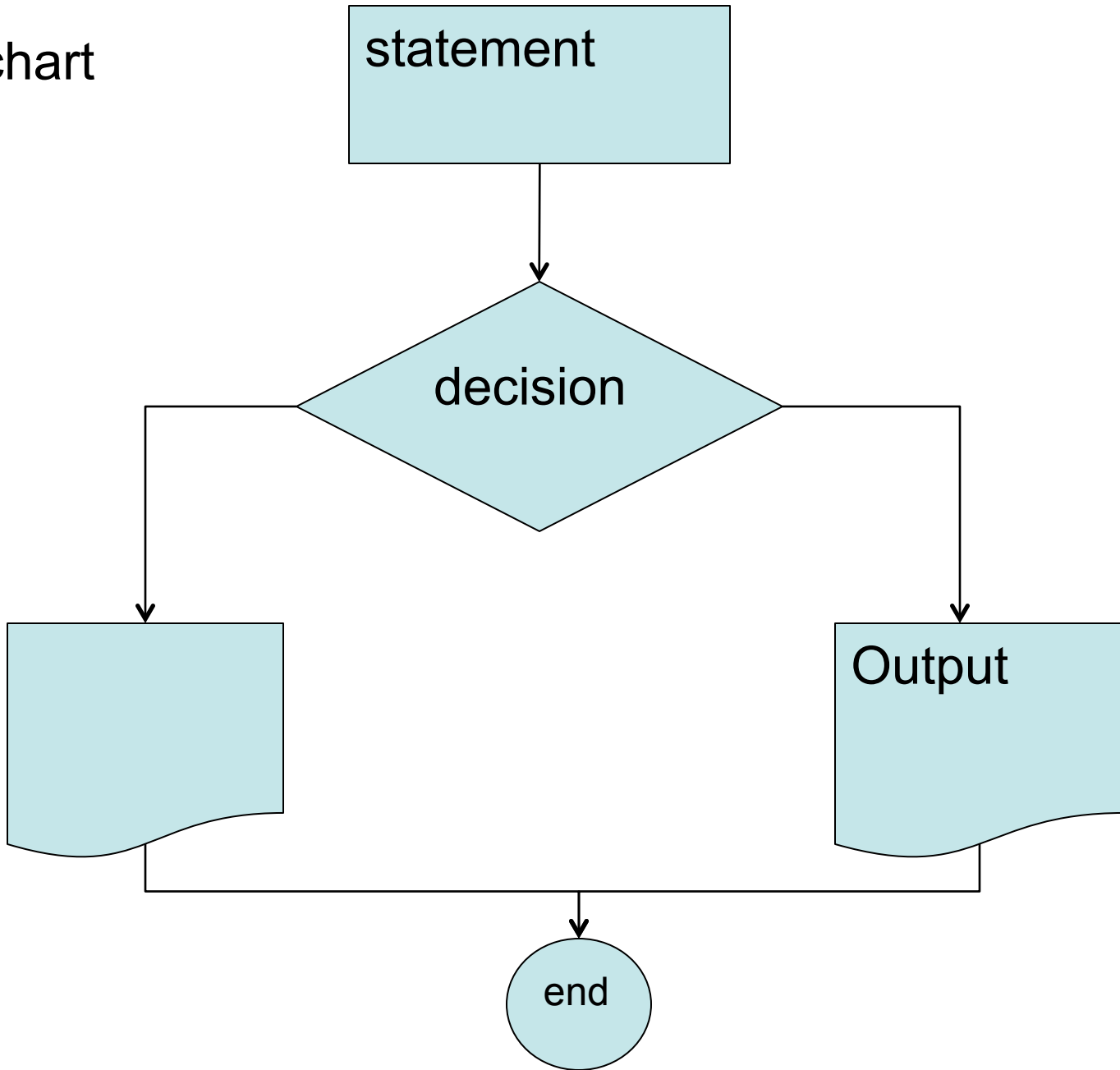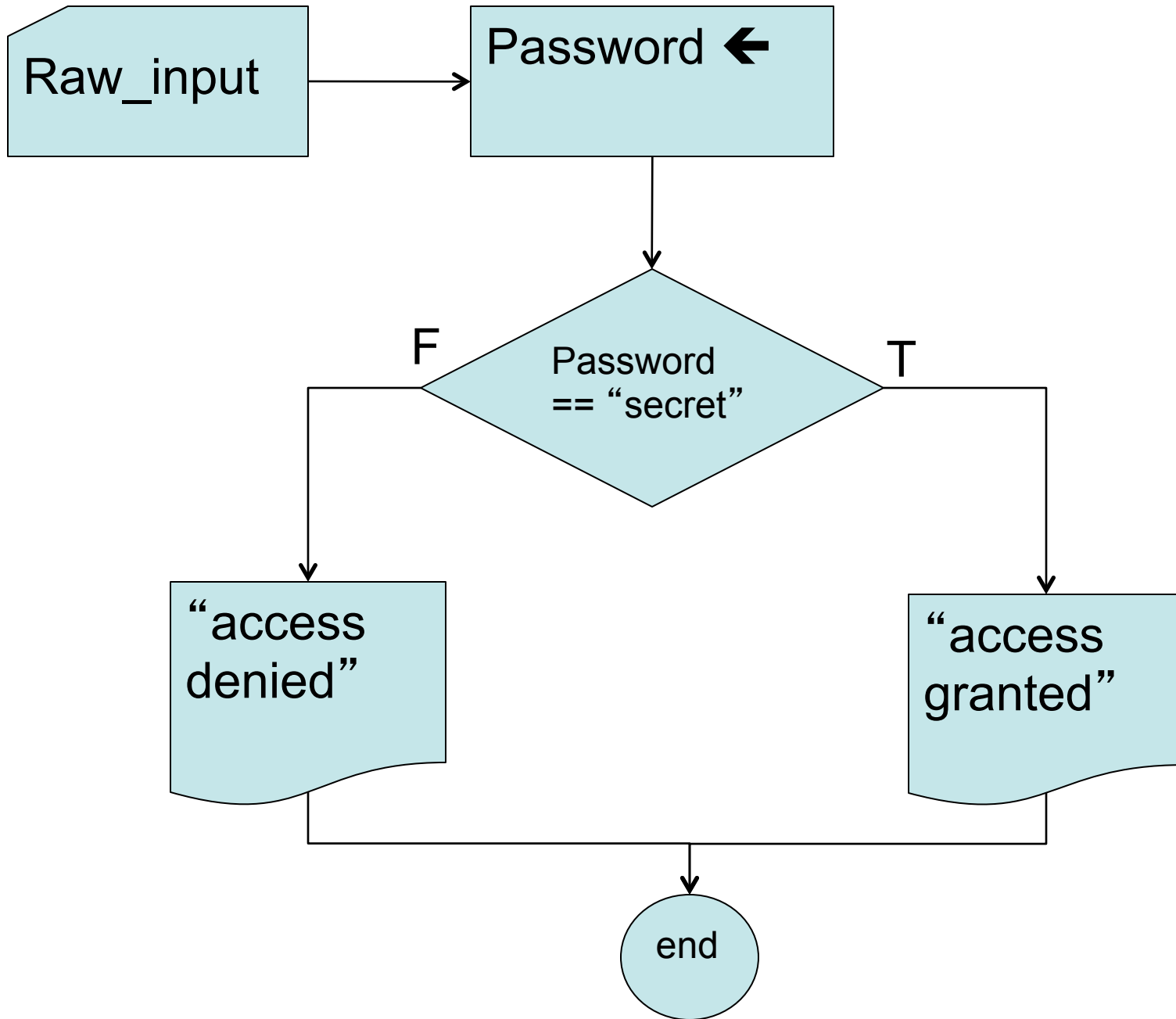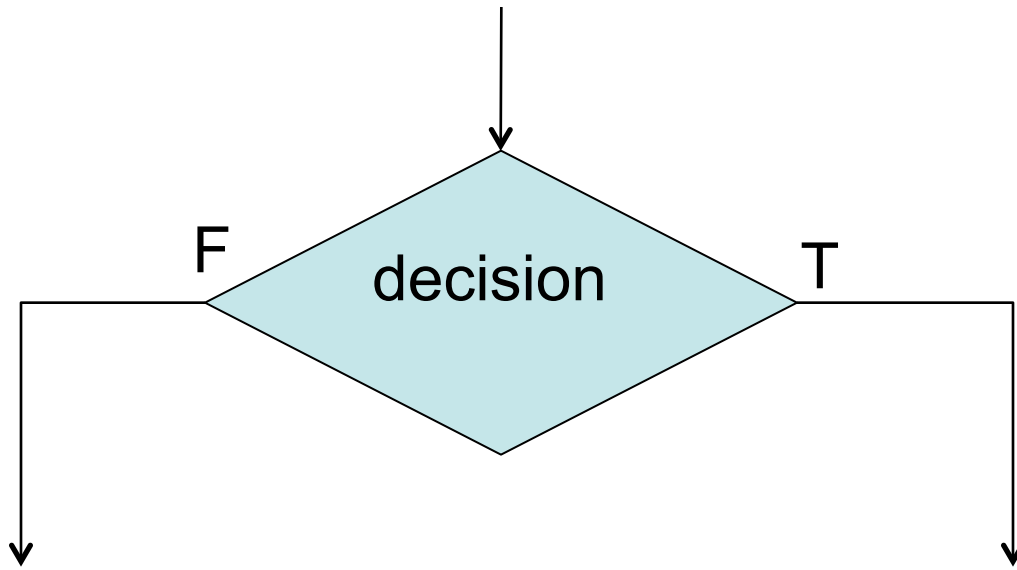Flow chart

statement

decision

Output

end

```python
print("Welcome to System Security Inc. ")
print("-- where security is our middle name\n")

password = input("Enter your password: ")

if password == "secret":
    print "Access Granted"

input("\n\nPress the enter key to exit.")
```
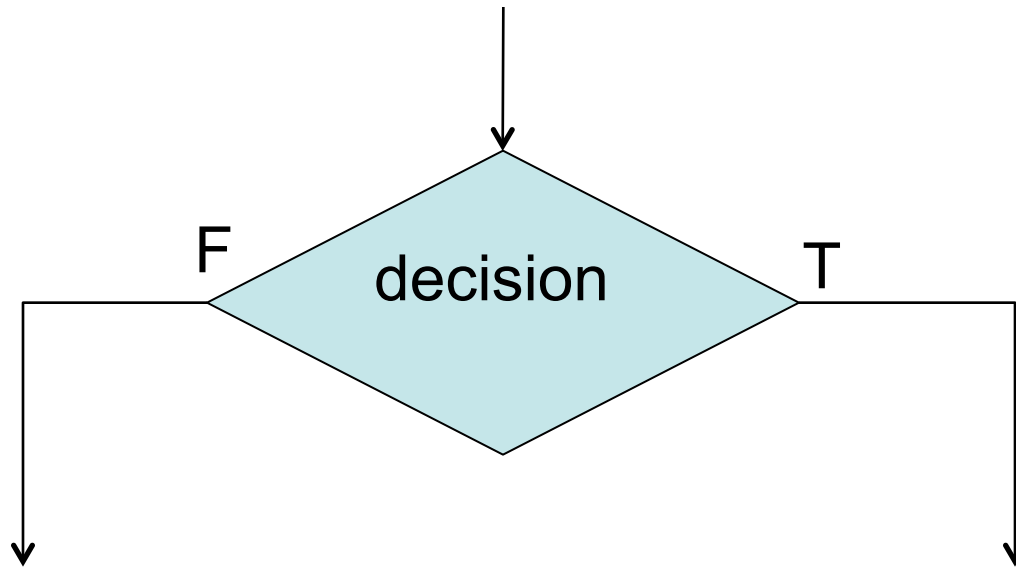
```
Raw_input ──────▶ Password ←

                  Password
              F   == "secret"   T

     "access                    "access
      denied"                    granted"

                    end
```

F   decision   T

if <proposition> :

    <statement>

    <statement> (optional)

else:

    <statement>

    <statement> (optional)

<other statements>

Propositions in Python

```
5 ==   5          equal
8 !=   5          not equal
3 >   10
5 <    8
5 >=  10
5 <=   5
```
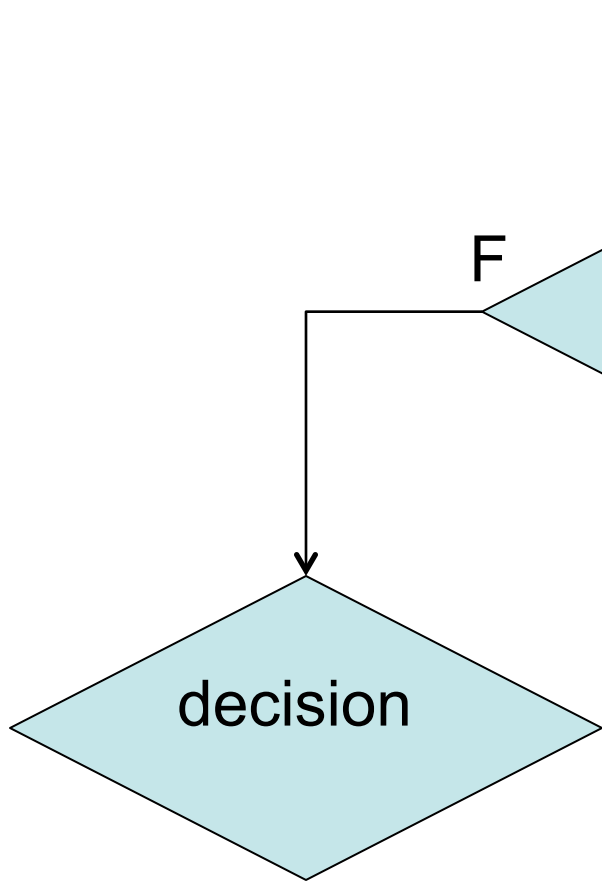
F ⟶ decision ⟵ T

decision

if <proposition> :
	<statement>
	<statement> (optional)
elseif <proposition>:
	<statement>
	<statement> (optional)
…
else:
	<statement>
	<statement> (optional)
<other statements>

```
# Three Year-Old Simulator
# Demonstrates the while loop

print("\tWelcome to the 'Three-Year-Old Simulator'\n")
print("This program simulates a conversation with a three-
year-old child.")
print("Try to stop the madness.\n")

response = ""
while response != "Because.":
    response = input("Why?\n")

print("Oh.  Okay.")

input("\n\nPress the enter key to exit.")
```
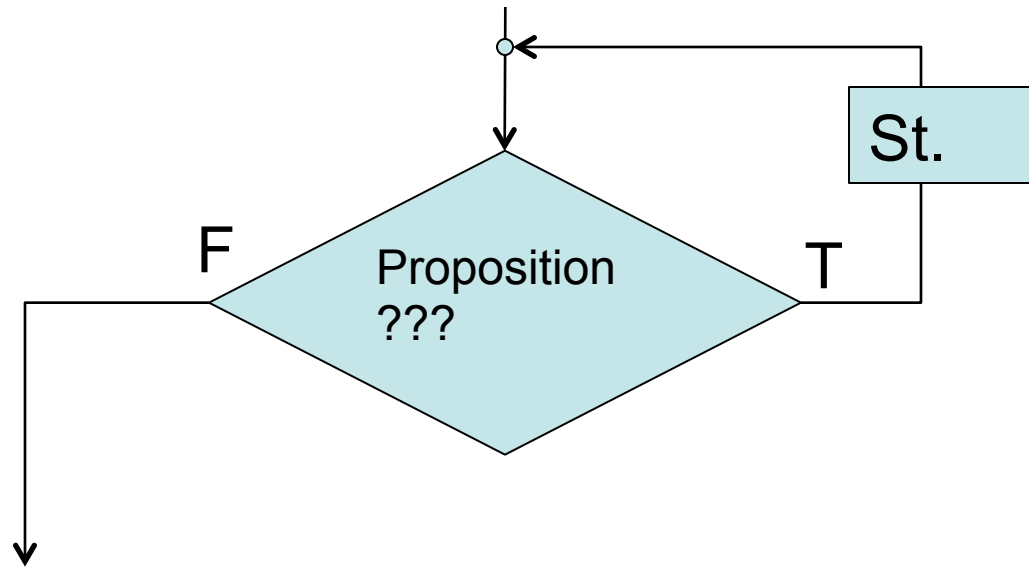
"????????"
←input

while \<proposition\> :
    \<statement\>
    \<statement\> (optional)
\<other statements\>

```
print("Welcome to System Security Inc. ")
print("-- where security is our middle name\n")

password = ""
count = 0
while (password != "secret") & (count <= 3):
        print "Access Denied"
        count = count + 1
        password = input("Enter your password: ")

If …
print("Access Granted")

input("\n\nPress the enter key to exit.")
```

Modify this program to give more chances..

- P1   P2   & |
- T   T   T   T
- T   F   F   T
- F   T   F   T
- F   F   F   F

```
# Password
# Demonstrates the if structure
print("Welcome to System Security Inc.")
print("-- where security is our middle name\n")

password = input("Enter your password: ")
numberOfTry = 1;
while (password.lower() != "secret") & (numberOfTry < 3):
    print("Access Denied -- tried ", numberOfTry, " times.")
    password = input("Enter your password: ")
    numberOfTry = numberOfTry + 1;

if password.lower() != "secret":
    print("Access Denied after ", numberOfTry, " times.")
else:
    print("Access Granted")

input("\n\nPress the enter key to exit.")
```

```python
# Password
# Demonstrates the if structure
print("Welcome to System Security Inc.")
print("-- where security is our middle name\n")

password = input("Enter your password: ")
numberOfTry = 1;
while (password.lower() != "secret") & (password.lower() !=
"secret2") & (numberOfTry < 3):
    print("Access Denied -- tried ", numberOfTry, " times.")
    password = input("Enter your password: ")
    numberOfTry = numberOfTry + 1;

if password.lower() != "secret":
    print("Access Denied after ", numberOfTry, " times.")
else:
    print("Access Granted")

input("\n\nPress the enter key to exit.")
```

```python
print("\tExclusive Computer Network")
print("\t\tMembers only!\n")

security = 0

username = ""
while not username:
    username = input("Username: ")

password = ""
while not password:
    password = input("Password: ")

if username == "M.Dawson" and password == "secret":
    print("Hi, Mike.")
    security = 5
elif username == "S.Meier" and password == "civilization":
    print("Hey, Sid.")
    security = 3
elif username == "S.Miyamoto" and password == "mariobros":
```

Counting

- While loop
- For loop

```python
# Counter
# Demonstrates the range() function

print("Counting:")
i = 10
while i > 0:
    print i,
    i = i - 1

for i in range(10): // (0, 10, 1) (start, exit, change)
    print(i, end=" ")

print("\n\nCounting by fives:")
for i in range(0, 50, 5):
    print(i, end=" ")

print("\n\nCounting backwards:")
for i in range(10, 0, -1):
    print(i, end=" ")

input("\n\nPress the enter key to exit.\n")
```
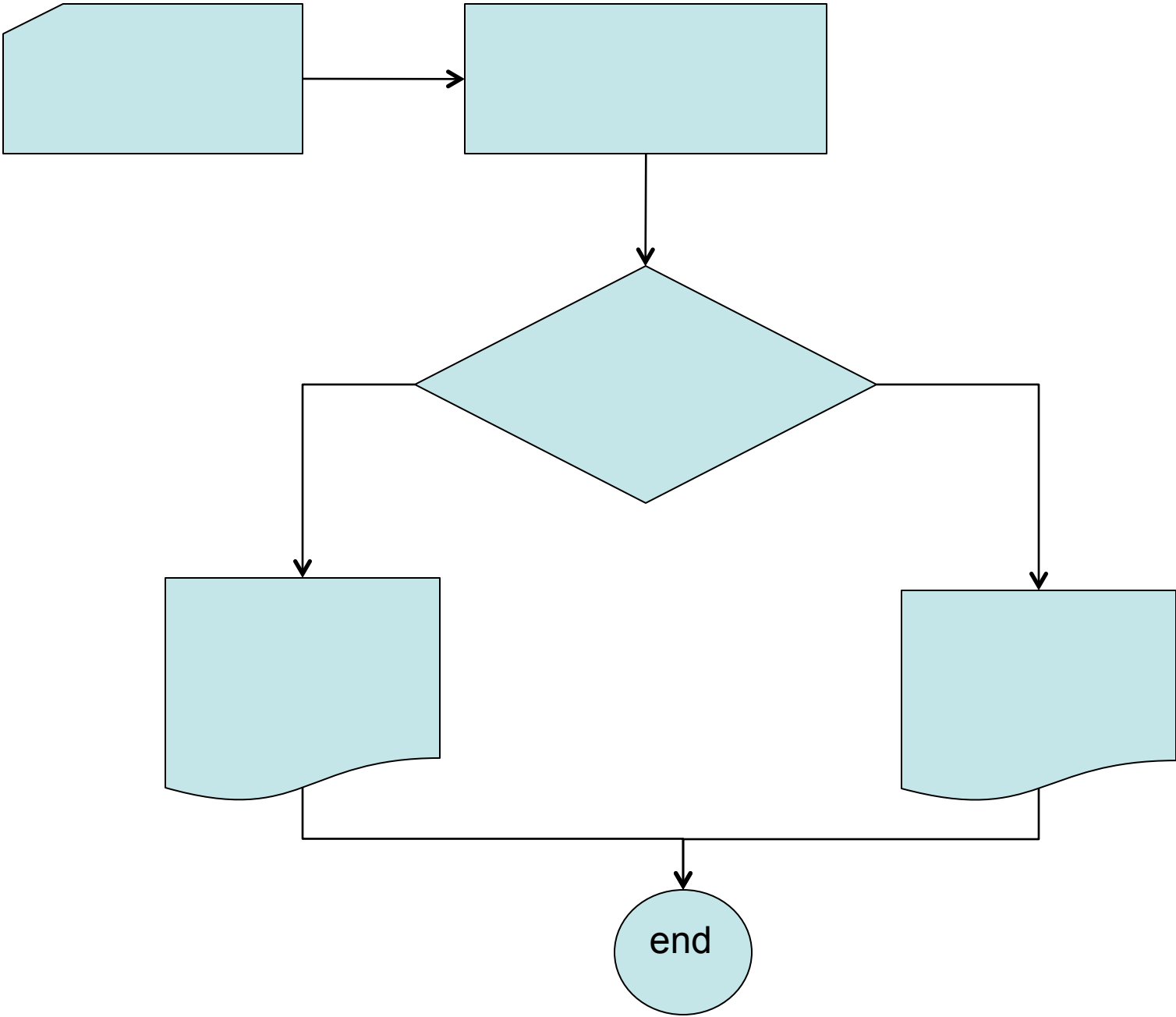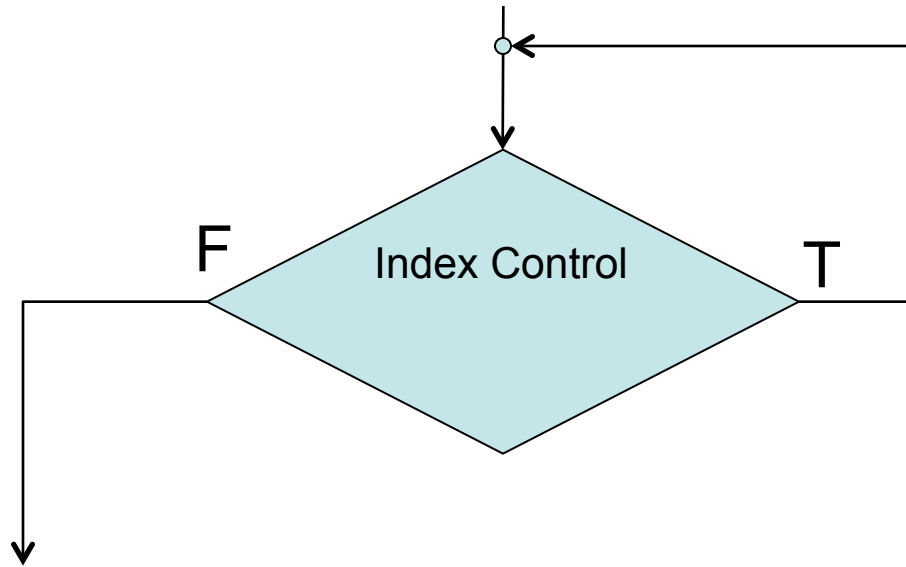
```python
# Loopy String
# Demonstrates the for loop with a string

word = input("Enter a word: ")

print("\nHere's each letter in your word:")
for letter in word:
    print(letter)

input("\n\nPress the enter key to exit.")
```
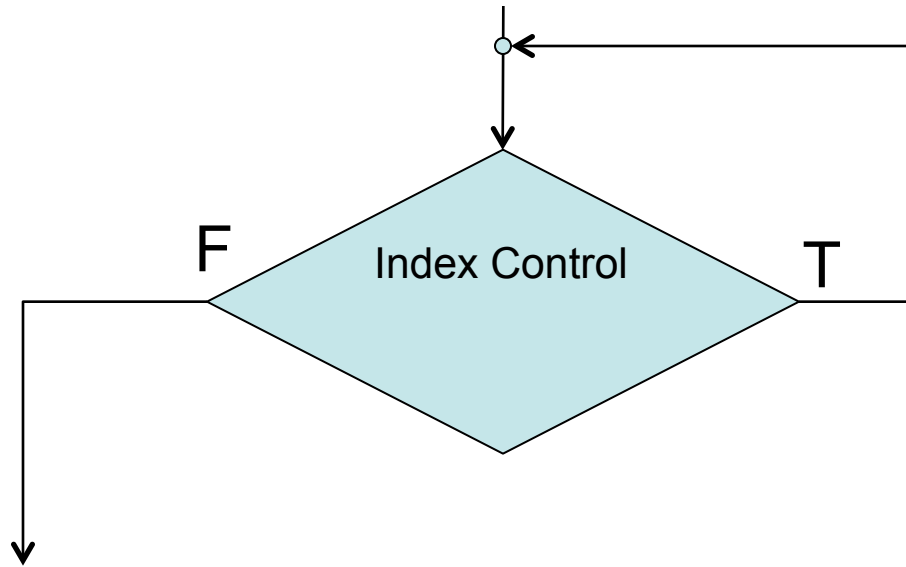
for <index_variable> in <index control>:
        <statement>
        <statement> (optional)
<other statements>

for <integer_variable> in range (start, end, skip):
    <statement>
    <statement> (optional)
<other statements>

```python
# Password
# Demonstrates the if structure
print("Welcome to System Security Inc. ")
print("-- where security is our middle name\n")

password = input("Enter your password: ")
numberOfTry = 1;
while (password.lower() != "secret") & (numberOfTry < 3):
    print("Access Denied -- tried ", numberOfTry, " times.")
    password = input("Enter your password: ")
    numberOfTry = numberOfTry + 1;
    if (pass… == "secret"):
        break

if password.lower() != "secret":
    print("Access Denied after ", numberOfTry, " times. ")
else:
    print("Access Granted")

input("\n\nPress the enter key to exit.")
```
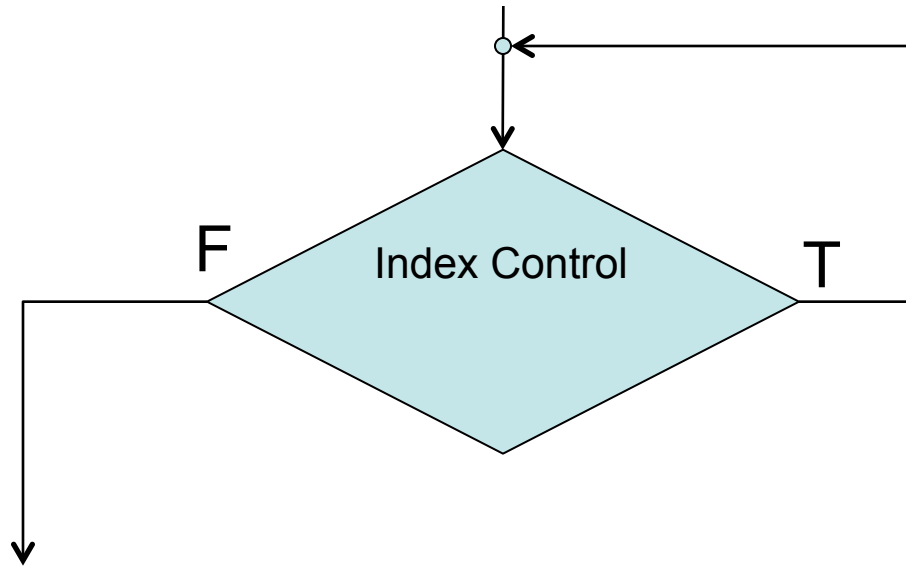
Use For Loop!!!

for <index_variable> in <index control>:
    <statement>
    <statement> (optional)
<other statements>

```python
# Password
# Demonstrates the if structure
print("Welcome to System Security Inc.")
print("-- where security is our middle name\n")

for i in range(0,3,1):
    password = input("Enter your password: ")
    if password.lower() == "secret":
        print("Access Granted")
        break
    print("Access Denied -- tried ", (i+1), " times.")

input("\n\nPress the enter key to exit.")
```

```python
# Random Access
# Demonstrates string indexing

import random

word = "pizza"
print("The word is: ", word, "\n")

high = len(word)
low = -len(word)

for i in range(10):
    position = random.randrange(low, high)
    print("word[", position, "]\t", word[position])

input("\n\nPress the enter key to exit.")
```

0	1	2	3	4
P	i	z	z	a
-5	-4	-3	-2	-1

```python
print("Enter the beginning and ending index for your
slice of 'pizza'. ")
print("Press the enter key at 'Begin' to exit.")

begin = None
while begin != "":
    begin = (input("\nBegin: "))

    if begin:
        begin = int(begin)

        pend = int(input("End: "))

        print("word[", begin, ":", pend, "]\t\t",
end=" ")
        print(word[begin:end])

input("\n\nPress the enter key to exit.")
```

```python
# create a tuple with some items
inventory = ("sword",
             "armor",
             "shield",
             "healing potion")

# print the tuple
print("\nThe tuple inventory is:\n", inventory)

# print each element in the tuple
print("\nYour items:")
for item in inventory:
    print(item)
    if "UCDavis" in item:
        print("Google ", item)
        GoogleList += item

GoogleList.sort()
```