

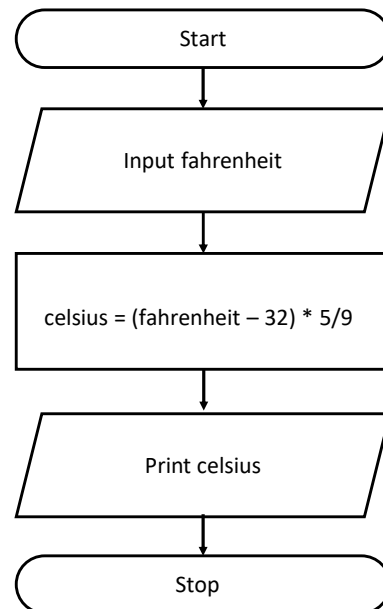
Introduction to Flowcharting

CSE 101: Lab 5

1

Flowcharts

- A flowchart is a diagram that represents an algorithm or the steps of an entire program
- The example here represents a Fahrenheit to Celsius program

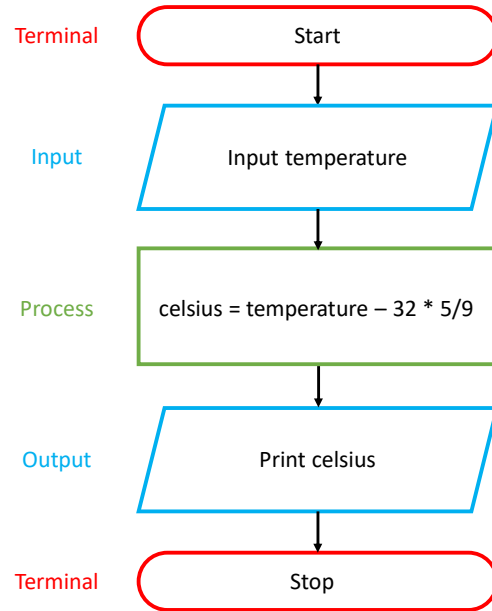


2

Parts of a Flowchart

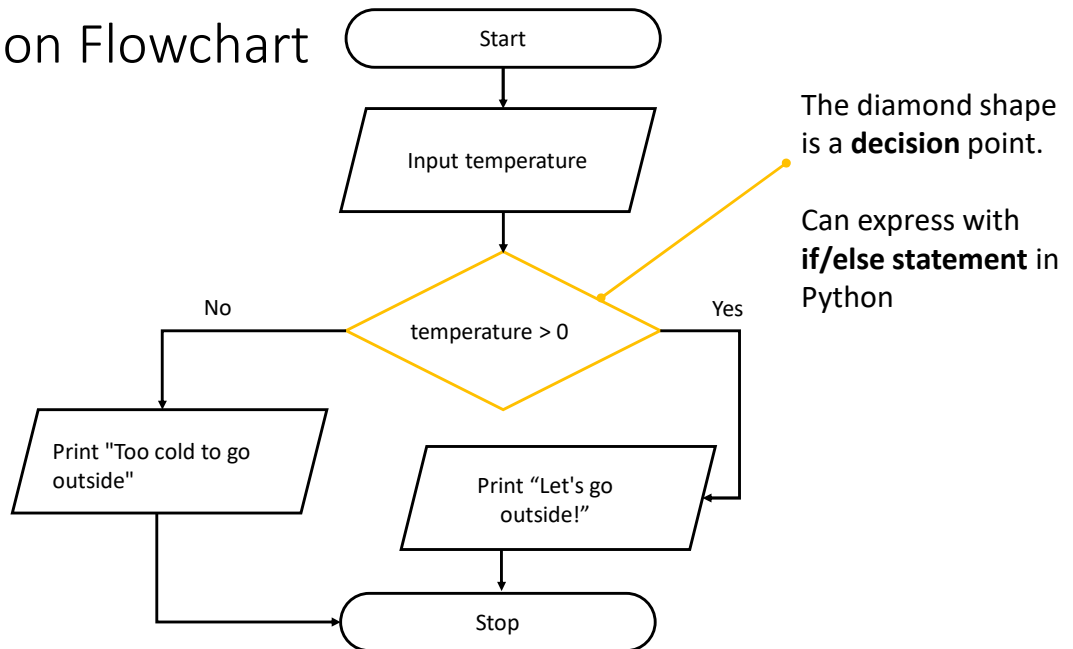
- Terminal: start or end of a flowchart
- Input/Output: input or output operations
- Process: indicates computations or data manipulations (e.g. assigning a variable)

Note that each part has a defined shape



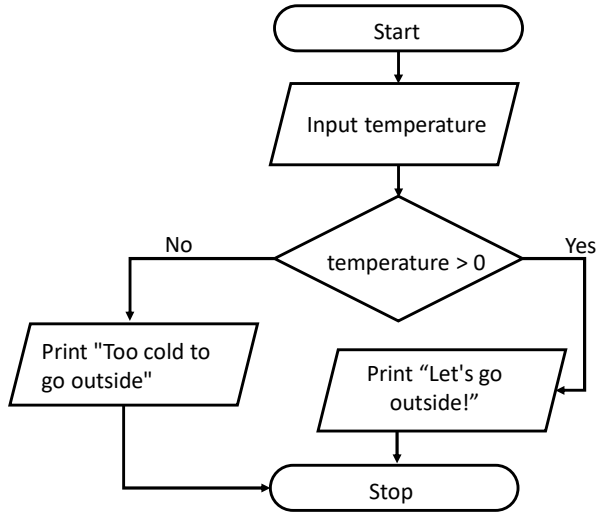
3

Decision Flowchart



4

Decision Flowchart



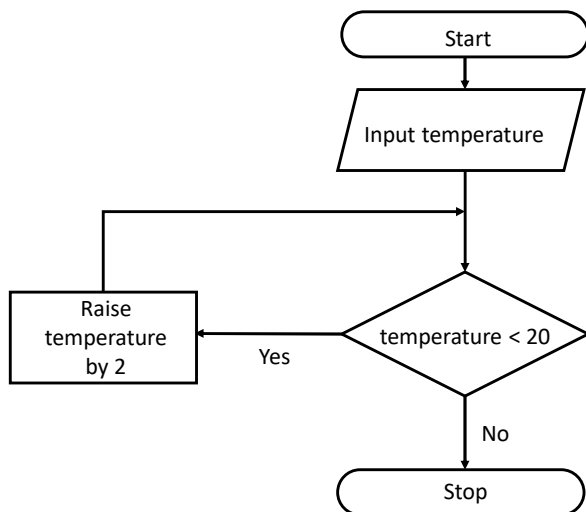
Python Code

```

temperature = float(input("Temperature: "))
if temperature > 0:
    print("Let's go outside!")
else:
    print("Too cold to go outside")
  
```

5

Repetition Flowchart

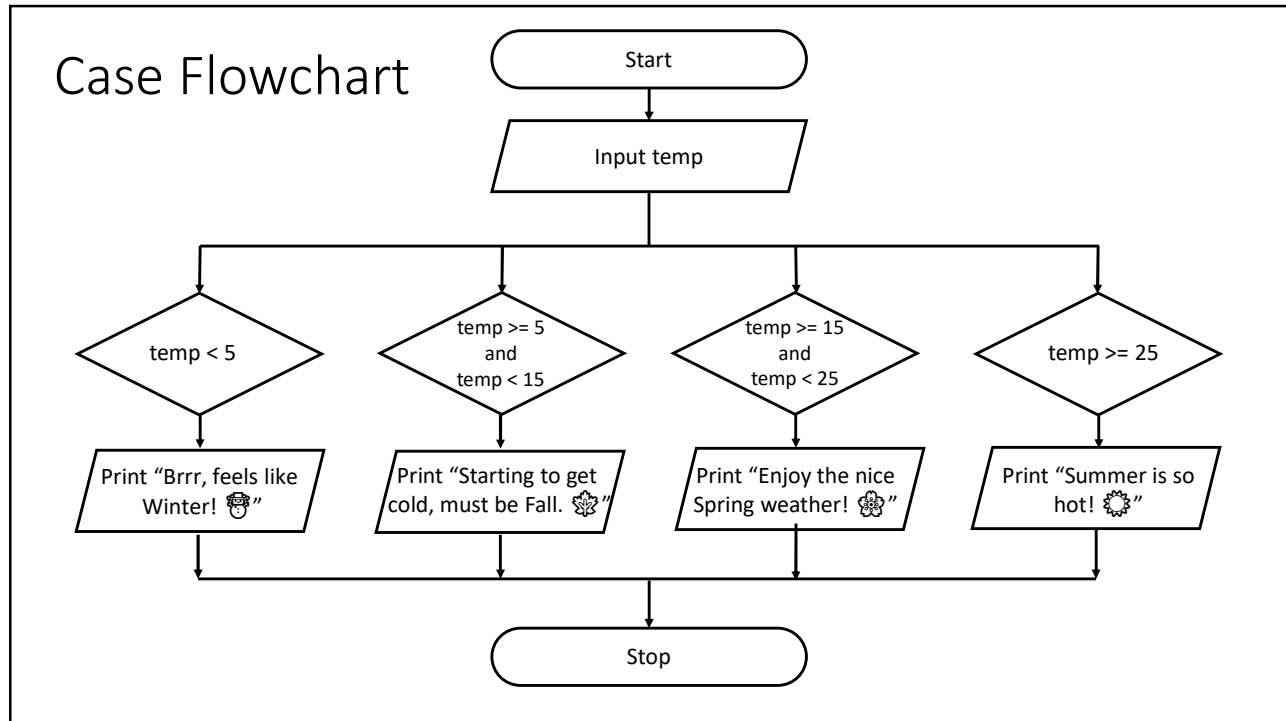


Python Code

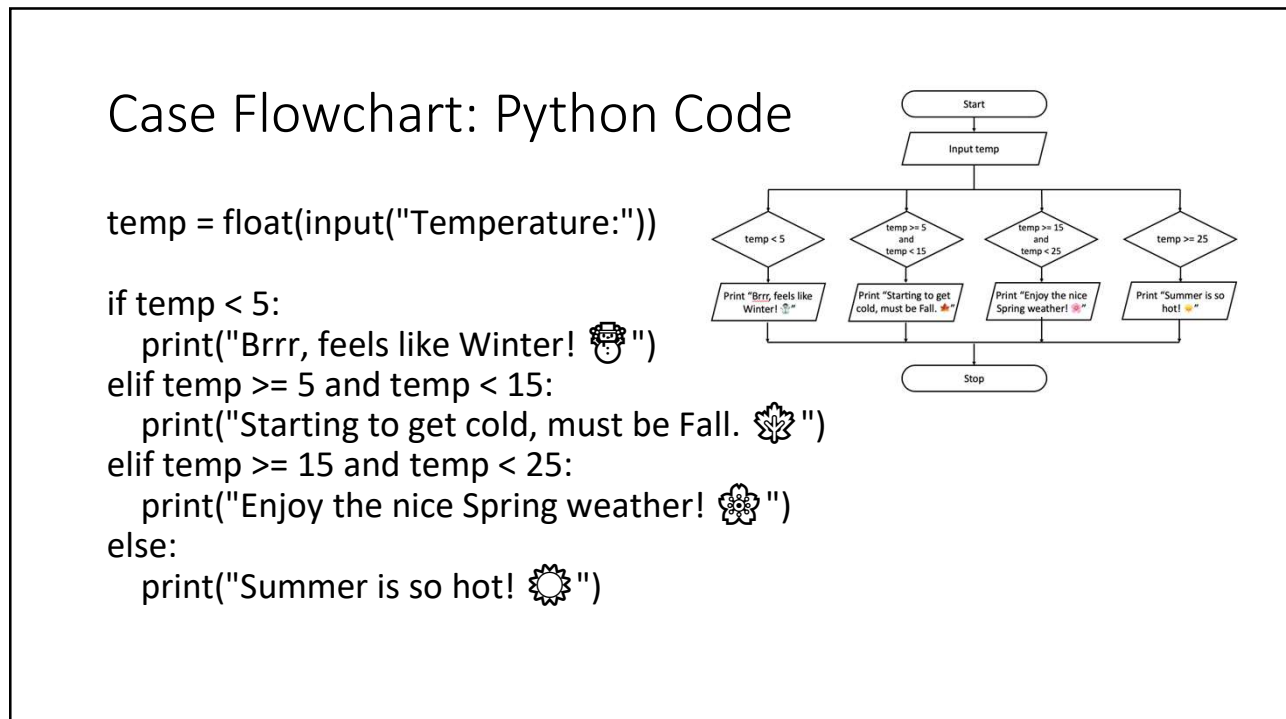
```

temperature = float(input("Temperature: "))
while temperature < 20:
    temperature += 2
  
```

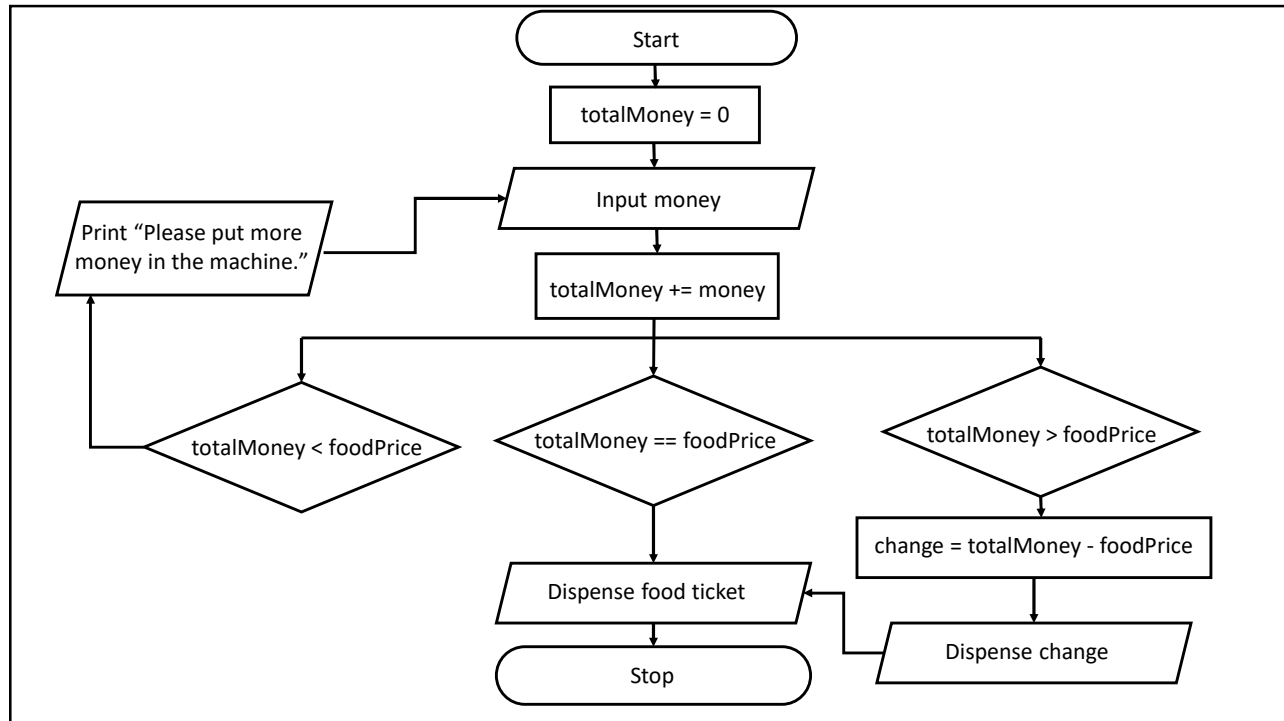
6



7

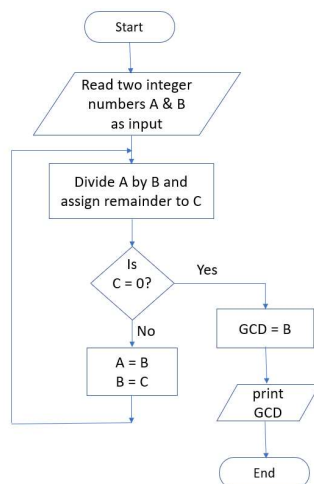


8



9

Write a program for the following flowchart:



- This flowchart corresponds to calculation of the greatest common divisor (GCD) of two numbers using the Euclidian method
- Write Python code (without using a function) to calculate the greatest common divisor of two integers A & B following this flowchart

10

Solution – gcd.py

```
a = int(input("Enter A: "))
b = int(input("Enter B: "))
gcd = 0

while(a > 0 and b > 0):
    c = a%b
    if c == 0:
        gcd = b
        break
    a = b
    b = c

print("The greatest common divisor is: ", gcd)
```