Control Structures. Control structures are blocks of code that determine the direction a program takes. In particular, they allow us to iterate calculations. They are best illustrated via examples.

(i)
```
for <variable> in <sequence>:
    <statements>
```

EXAMPLE:
```
x = 0
for i in range(10):
    x = x + i
    print(x)
```

(ii)
```
if <condition>:
    <statements>
else:
    <statements>
```

EXAMPLE:
```
# This code determines the maximum of two integers x1,x2.
if x1 >= x2:
    max = x1
else:
    max = x2
```

(iii)
```
if <condition>:
    <statements>
elif <condition>:
    <statements>
elif <condition>:
    <statements>
elif <condition>:
    <statements>
else:
    <statements>
```

EXAMPLE:
```
# This code determines the maximum of three integers x1,x2,x3.
if x1 >= x2 and x1 >= x3:
    max = x1
elif x2 >= x1 and x2 >= x3:
    max = x2
else:
    max = x3
```

(iv) `while <condition>:`

      `<statements>`

EXAMPLE:

```
# This code computes the factorial of a positive integer n.
factorial = 1
while n > 0:
    factorial = factorial*n
    n = n-1
print(factorial)
```

(v) `while <condition>:`

      `if <condition>:`

         `break`

      `else:`

         `<statements>`

EXAMPLE:

```
# This while loop breaks (and thus the program in which it is embedded, proceeds)
  if n is positive, and otherwise it prints a statement that n must be positive,
  and asks for a new input.
while True:
    n = int(input("Enter a positive integer: "))
    if n>0:
        break
    else:
        print("The number must be positive.")
```