

# Εισαγωγή στην Επιστήμη των Υπολογιστών

# Χρήση While

```
count = 0
```

```
while (count < 5):
```

```
    print 'The count is:', count
```

```
    count = count + 1
```

The count is: 0

The count is: 1

The count is: 2

The count is: 3

The count is: 4

# Παράδειγμα

```
principal = 1000 # Αρχικό ποσό  
rate = 0.05 # Επιτόκιο  
numyears = 5 # Χρόνια  
year = 1  
while year <= numyears:  
    principal = principal * (1 + rate)  
    print year, principal  
    year += 1
```

## Παράδειγμα (2)

1 1050.0

2 1102.5

3 1157.625

4 1215.50625

5 1276.2815625

# Παράδειγμα

```
principal = 1000 # Αρχικό ποσό  
rate = 0.05 # Επιτόκιο  
numyears = 5 # Χρόνια  
year = 1  
while year <= numyears:  
    principal = principal * (1 + rate)  
    print "%3d %0.2f" % (year, principal)  
    year += 1
```

## Παράδειγμα (2)

1 1050.00

2 1102.50

3 1157.62

4 1215.51

5 1276.28

# Χρήση for

```
prefixes = 'JKLMNOPQ'
```

```
suffix = 'ack'
```

```
for letter in prefixes:
```

```
    print letter + suffix
```

- Jack
- Kack
- Lack
- Mack
- Nack
- Oack
- Pack
- Qack

## Χρήση for (2)

```
word = 'banana'
```

```
count = 0
```

```
for letter in word:
```

```
    if letter == 'a':
```

```
        count = count + 1
```

```
print count #3
```



# Χρήση for (3)

```
a = "Hello World"
```

```
for c in a:
```

```
    print c
```



H  
e  
l  
l  
o  
  
W  
o  
r  
l  
d

# Χρήση continue

```
for num in range(2, 6):  
    if num % 2 == 0:  
        print "Found an even number", num  
        continue  
    print "Found a number", num
```

```
Found an even number 2  
Found a number 3  
Found an even number 4  
Found a number 5
```

# Χρήση break

```
for n in range(2, 12):  
    for x in range(2, n):  
        if n % x == 0:  
            print n, 'equals', x, '*', n/x  
            break  
    else:  
        print n, 'is a prime number'
```

# Χρήση break (2)

2 is a prime number

3 is a prime number

4 equals  $2 * 2$

5 is a prime number

6 equals  $2 * 3$

7 is a prime number

8 equals  $2 * 4$

9 equals  $3 * 3$

10 equals  $2 * 5$

11 is a prime number

# Πρώτοι αριθμοί

```
for num in range(10,20):  
    for i in range(2,num):  
        if num%i == 0:  
            j=num/i  
            print '%d equals %d * %d' % (num,i,j)  
            break  
    if num%i != 0:  
        print num, 'is a prime number'
```

# Πρώτοι αριθμοί (2)

10 equals  $2 * 5$

11 is a prime number

12 equals  $2 * 6$

13 is a prime number

14 equals  $2 * 7$

15 equals  $3 * 5$

16 equals  $2 * 8$

17 is a prime number

18 equals  $2 * 9$

19 is a prime number

# Πρώτοι αριθμοί (3)

```
i = 2
```

```
while(i < 30):
```

```
    j = 2
```

```
    while(j <= (i/j)):
```

```
        if not(i%j): break
```

```
        j = j + 1
```

```
    if (j > i/j) : print i, " is prime"
```

```
    i = i + 1
```

# Πρώτοι αριθμοί (4)

2 is prime

3 is prime

5 is prime

7 is prime

11 is prime

13 is prime

17 is prime

19 is prime

23 is prime

29 is prime