

# Chapter 11 :



## Computer Science

**Class XI (As per  
CBSE Board)**

**Tuples**

**New  
Syllabus  
2019-20**

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# Tuples

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It is a sequence of immutable objects. It is just like list. Difference between the tuples and the lists is that the tuples cannot be changed unlike lists. Lists uses square bracket where as tuples use parentheses.

## Creating A Tuple

A tuple is enclosed in parentheses () for creation and each item is separated by a comma.

e.g.

```
tup1 = ('comp sc', 'info practices', 2017, 2018)
```

```
tup2 = (5,11,22,44)
```

**NOTE:-** Indexing of tuple is just similar to indexing of list.

# Tuples

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## Accessing Values from Tuples

Use the square brackets for slicing along with the index or indices to obtain the value available at that index.

e.g.

```
tup1 = ("comp sc", "info practices", 2017, 2018)
```

```
tup2 = (5,11,22,44,9,66)
```

```
print ("tup1[0]: ", tup1[0])
```

```
print ("tup2[1:5]: ", tup2[1:5])
```

Output

```
('tup1[0]: ', 'comp sc')
```

```
('tup2[1:5]: ', (11, 22, 44, 9))
```

# Tuples

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## Iterating Through A Tuple

Element of the tuple can be accessed sequentially using loop.

e.g.

```
tup = (5,11,22)
for i in range(0,len(tup)):
    print(tup[i])
```

## Output

5

11

22

# Tuples

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## Updating Tuples

Tuples are immutable, that's why we can't change the content of tuple. Its alternate way is to take contents of existing tuple and create another tuple with these contents as well as new content.

E.g.

```
tup1 = (1, 2)
```

```
tup2 = ('a', 'b')
```

```
tup3 = tup1 + tup2
```

```
print (tup3)
```

Output

```
(1, 2, 'a', 'b')
```

# Tuples

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## Delete Tuple Elements

Direct deletion of tuple element is not possible but shifting of required content after discard of unwanted content to another tuple.

e.g.

```
tup1 = (1, 2,3)
tup3 = tup1[0:1] + tup1[2:]
print (tup3)
```

Output

(1, 3)

NOTE : Entire tuple can be deleted using del statement.

e.g. `del tup1`

# Tuples

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## Basic Tuples Operations

Python Expression	Results	Description
<code>len((1, 2))</code>	2	Length
<code>(1, 2) + (4, 5)</code>	<code>(1, 2, 4, 5)</code>	Concatenation
<code>('CS',) * 2</code>	<code>('CS', 'CS')</code>	Repetition
<code>5 in (1, 2, 3)</code>	False	Membership
<code>for x in (4,2,3) : print (x, end = ' ')</code>	4 2 3	Iteration

# Tuples

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## Tuple Functions

S.No.	Function & Description
1	<u><a href="#">tuple(seq)</a></u> Converts a list into tuple.
2	<u><a href="#">min(tuple)</a></u> Returns item from the tuple with min value.
3	<u><a href="#">max(tuple)</a></u> Returns item from the tuple with max value.
4	<u><a href="#">len(tuple)</a></u> Gives the total length of the tuple.
5	<u><a href="#">cmp(tuple1, tuple2)</a></u> Compares elements of both tuples.



# Tuples

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**\*Fibonacci series in tuple.**

```
nterms = 10
n1 = 0
n2 = 1
count = 0
tup=()
# check if the number of terms is valid
if nterms <= 0:
    print("Please enter a positive integer")
elif nterms == 1:
    print("Fibonacci sequence upto",nterms,":")
    print(n1)
else:
    print("Fibonacci sequence upto",nterms,":")
    while count < nterms:
        tup=tup+(n1,)
        nth = n1 + n2
        # update values
        n1 = n2
        n2 = nth
        count += 1
    print (tup)
```