```
l = [1,4,2,3,2,4,6,8,6,5,4,7,6,3,2,3]
lst = []
for i in l:
  if i not in lst:
    lst.append(i)
else:
  print(lst)
```

```
[1, 4, 2, 3, 6, 8, 5, 7]
```

```
l = [1,4,2,3,2,4,6,8,6,5,4,7,6,3,2,3]
lst = []
prev_value = None
for i in l:
  if i % 2 == 0:
    if prev_value == None:
      prev_value = i
      lst.append(i)
    else:
      prev_value = prev_value + i
      lst.append(prev_value)
  else:
    lst.append(i)
else:
  print(l)
  print(lst)
```

```
[1, 4, 2, 3, 2, 4, 6, 8, 6, 5, 4, 7, 6, 3, 2, 3]
[1, 4, 6, 3, 8, 12, 18, 26, 32, 5, 36, 7, 42, 3, 44, 3]
```

frozenset

frozenset is immutable

frozenset is a sequence

frozenset is iterable

frozenset can store any number of values or items

frozenset can store only immutable data type values or items

frozenset can not store duplicate values or items

frozenset does not support indexing

frozenset does not support slicing

frozenset is unordered

frozenset items enclosed with in frozenset({ , , , })

empty frozenset( )

```
s = {1,2,3,4,5}
fs = frozenset(s)
print(fs)
print(type(fs))
print(len(fs))
print(id(fs))
```

```
frozenset({1, 2, 3, 4, 5})
<class 'frozenset'>
5
139685424352384
```

```
fs = frozenset({1,5,4,3,2,7})
print(fs)
```

```
frozenset({1, 2, 3, 4, 5, 7})
```

frozenset.union( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.union(B))
```

```
frozenset({1, 2, 3, 4, 5})
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A|B)
```

```
frozenset({1, 2, 3, 4, 5})
```

frozeset.intersection( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.intersection(B))
```

```
frozenset({3})
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A&B)
```

```
frozenset({3})
```

frozenset.difference( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.difference(B))
```

```
frozenset({1, 2})
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A-B)
```

```
frozenset({1, 2})
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(B.difference(A))
```

```
frozenset({4, 5})
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(B-A)
```

```
frozenset({4, 5})
```

frozenset.symmetric_difference( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.symmetric_difference(B))
```

```
frozenset({1, 2, 4, 5})
```

frozenset.isdisjoint( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.isdisjoint(B))
```

```
False
```

frozenset.issubset( )

```
A = frozenset({1,2,3})
B = frozenset({3,4,5})
print(A.issubset(B))
```

```
False
```

```
A = frozenset({1,2,3})
B = frozenset({3,4,5,1,2})
print(A.issubset(B))
```

```
True
```

frozenset.issuperset( )

```
A = frozenset({1,2,3,4,5})
B = frozenset({3,4,5})
print(A.issuperset(B))
```

```
True
```

dict

dict is mutable

dict is a sequence

dict is iterable

dict can store any number of items or values

dict can not store duplicate keys

dict can store duplicate values

dict is unordered

dict can store any data type data as a value

dict can store only immutable data type data as a key

dict items enclosed within {key:value, key:value}

empty dict : { }

```
d = {
    'name':'venkat',
     'mobile':9390018934,
     'email':'venkat@gmail.com',
     'technology':'python'
     }

print(d)
print(type(d))
print(len(d))
print(id(d))
```

```
{'name': 'venkat', 'mobile': 9390018934, 'email': 'venkat@gmail.com', 'technology': 'python'}
<class 'dict'>
4
139685424073472
```

```
for i in d:
  print(i)
```

```
name
mobile
email
technology
```

```
for i in d:
  print(i,d[i])
```

```
name venkat
mobile 9390018934
email venkat@gmail.com
technology python
```

```
for i in d:
  print(i,' : ',d[i])
```

```
name  :  venkat
mobile  :  9390018934
email  :  venkat@gmail.com
technology  :  python
```

dict.keys( )

```
print(d.keys())
```

```
dict_keys(['name', 'mobile', 'email', 'technology'])
```

dict.values( )

```
print(d.values())
```

```
dict_values(['venkat', 9390018934, 'venkat@gmail.com', 'python'])
```

```
for i in d:
  print(i)
```

```
name
mobile
email
technology
```

```
for i in d.keys():
  print(i)
```

```
name
mobile
email
technology
```

```
for i in d.values():
  print(i)
```

```
venkat
9390018934
venkat@gmail.com
python
```

dict.items( )

```
print(d.items())
```

```
dict_items([('name', 'venkat'), ('mobile', 9390018934), ('email', 'venkat@gmail.com'), ('techn
```

```
for i in d.items():
  print(i)
```

```
('name', 'venkat')
('mobile', 9390018934)
('email', 'venkat@gmail.com')
('technology', 'python')
```

```
t = 1,2
a,b = t
print(a)
print(b)
```

```
1
2
```

```
for key,value in d.items():
  print(key,' : ',value)
```

```
name  :  venkat
mobile  :  9390018934
email  :  venkat@gmail.com
technology  :  python
```

```
list(d.items())[2]
```

```
('email', 'venkat@gmail.com')
```

```
print(d)
```

```
{'name': 'venkat', 'mobile': 9390018934, 'email': 'venkat@gmail.com', 'technology': 'python'}
```

```
print(d['technology'])
```

```
python
```

```
print(d['name'])
```

```
venkat
```

to modify dict value

```
d['technology'] = 'AI' # if key is already present
```

add item to dict

```
d['address'] = 'Hyderabad' # if key is not present, then
```

```
# new item will added with key and value


print(d)
```

```
{'name': 'venkat', 'mobile': 9390018934, 'email': 'venkat@gmail.com', 'technology': 'AI', 'add
```

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