# Python Functions, Sequences and Strings

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## 1 Python Programming Functions

[1]:
```
x = 1
y = 2
x + y
```

[1]:
```
3
```

[2]:
```
x
```

[2]:
```
1
```

[6]:
```
def add_numbers(x, y, z = None):
    if(z == None):
        return x + y
    else:
        return x + y + z

print(add_numbers(1, 2))
print(add_numbers(1, 2, 3))
```

```
3
6
```

## 2 Python Types and Sequences

[2]:
```
x = (1, 'a', 2, 'b')
type(x)
```

[2]:
```
tuple
```

[3]:
```
x = [1, 'a', 2, 'b']
type(x)
```

[3]:
```
list
```

[4]:
```
x.append(3)
print(x)
```

```
[1, 'a', 2, 'b', 3]
```

[5]:
```
for item in x:
    print(item)
```

```
1
a
2
b
3
```

[7]:
```
i = 0
while(i != len(x)):
    print(x[i])
    i = i + 1
```

```
1
a
2
b
3
```

[8]:
```
[1, 2] + [3, 4]
```

[8]:
```
[1, 2, 3, 4]
```

[9]:
```
[2, 3] * 3
```

[9]:
```
[2, 3, 2, 3, 2, 3]
```

[10]:
```
2 in [2, 3]
```

[10]:
```
True
```

[12]:
```
2 in [1, 4]
```

[12]:
```
False
```

[15]:
```
x = 'This is a string'
print(x[0])
print(x[0 : 1])
print(x[0 : 2])
```

```
T
T
Th
```

[16]:
```
x[-1]
```

[16]:
```
'g'
```

[18]:
```
x[-4 : -2]
```

[18]:
```
'ri'
```

[19]:
```
x[ : 3]
```

[19]:
```
'Thi'
```

[20]:
```
x[3 : ]
```

[20]:
```
's is a string'
```

[22]:
```
firstname = "Govind"
lastname = "Saxena"
print(firstname + " " + lastname)
print(firstname * 3)
print("Govind" in firstname)
```

```
Govind Saxena
GovindGovindGovind
True
```

[23]:
```
firstname = "Govind Saxena".split(" ")[0]
lastname = "Govind Saxena".split(" ")[-1]
print(firstname)
print(lastname)
```

```
Govind
Saxena
```

[41]:
```
x = {"Govind Saxena" : "govindsaksenaji@gmail.com",
     "Suryansh Sinha" : "Suri@reddit.com"
    }
print(type(x))
x['Govind Saxena']
```

```
<class 'dict'>
```

[41]:
```
'govindsaksenaji@gmail.com'
```

[30]:
```
for name in x:
    print(x[name])
```

```
govindsaksenaji@gmail.com
Suri@reddit.com
```

[31]:
```
for email in x.values():
    print(email)
```

```
govindsaksenaji@gmail.com
Suri@reddit.com
```

[34]:
```
for name, email in x.items():
    print(name)
    print(email)
```

```
Govind Saxena
govindsaksenaji@gmail.com
Suryansh Sinha
Suri@reddit.com
```

[40]:
```
x = ("Govind", "Saxena", "govindsaksenaji@gmail.com")
print(type(x))
fname ,lname, email = x
```

```
<class 'tuple'>
```

[36]:
```
fname
```

[36]:
```
'Govind'
```

[37]:
```
lname
```

[37]:
```
'Saxena'
```

[38]:
```
email
```

[38]:
```
'govindsaksenaji@gmail.com'
```

## 3 More on Strings

[42]:
```
print("Govind" + str(21))
```

```
Govind21
```

[46]:
```
sales_record = {
    "price" : 3.24,
    "num_items" : 4,
    "person" : "Govind"
}

sales_statement = "{} bought {} item(s) at a price of {} Rupees each for a␣
 ↪total of {} Rupees."
print(sales_statement.format(
    sales_record["person"],
    sales_record["num_items"],
```

```
    sales_record["price"],
    sales_record["num_items"] * sales_record["price"]
    ))
```

```
Govind bought 4 item(s) at a price of 3.24 Rupees each for a total of 12.96
Rupees.
```

[ ]: