PYTHON

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MySelf

- 17+yrs experience in Consulting, Training and Software designing and development.
- Masters in Computer Science (Delhi Uni.), PGDIT ,PGDCA.
- Active Member -TOASTMASTERS International club (U.S.)
- Involved in consulting, Training with International and Indian organization
- Actively involved with Corporates and Educational Institutes on Trainings
- Key Skills : Python ,Angular JS, C++,JAVA, Angular JS , Node JS , JQuery, HTML 5, CSS, J2EE, XML, Struts, JBOSS, Tomcat, JPA
- Successfully Delivered more than 50+ Training in Python.

About IT

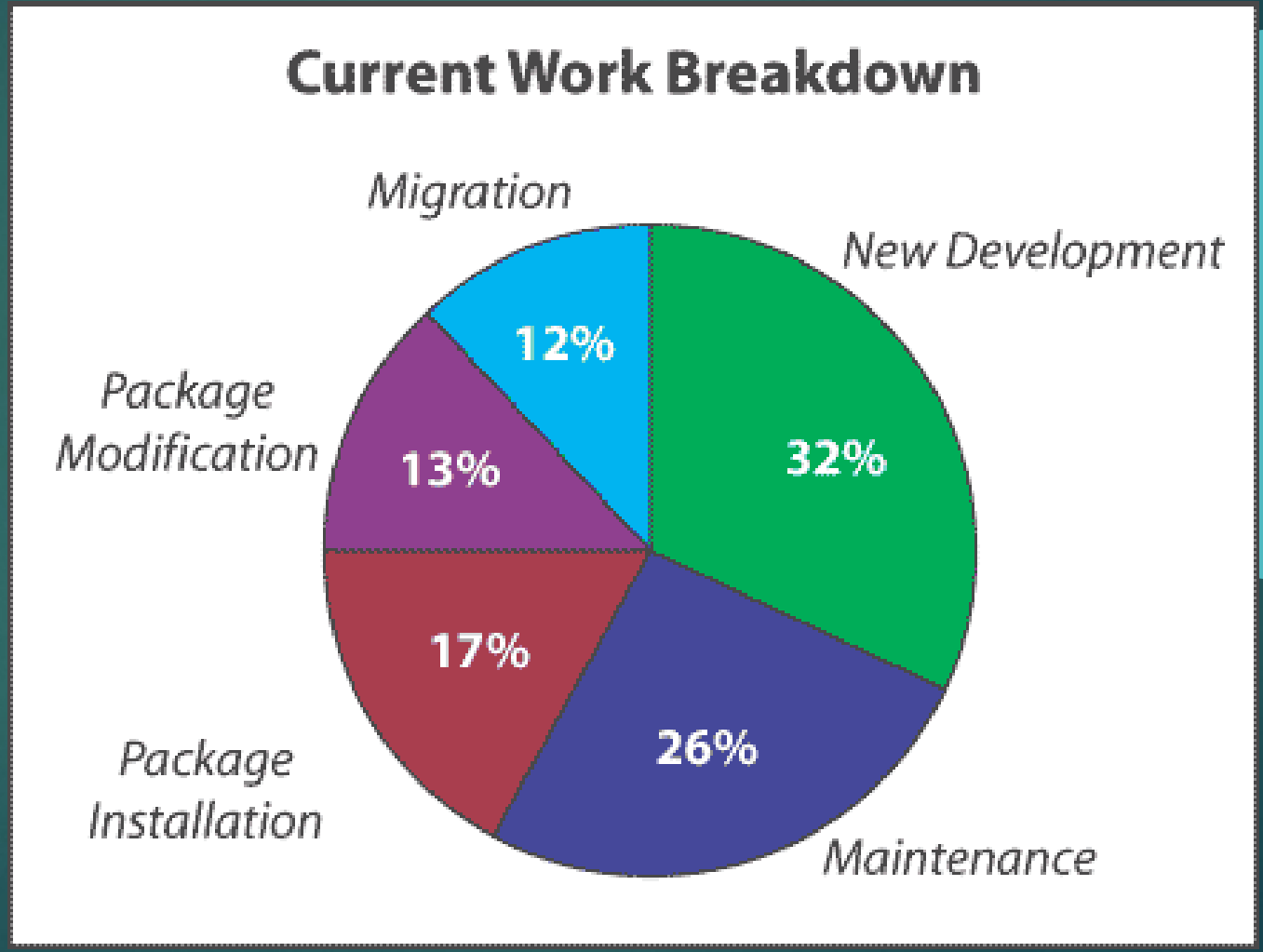
- IT refers to the use of technology, be it hardware or software, for data processing, business solutions & day-to-day functioning of companies.

- In India & globally, the IT industry is large & continuously growing. The IT-BPO industry is poised to grow in terms of industry revenues to USD 225 billion by 2020*. The IT services sector is growing at a rate of 18% to touch Rs. 589 billion in revenues* during 2012-13.

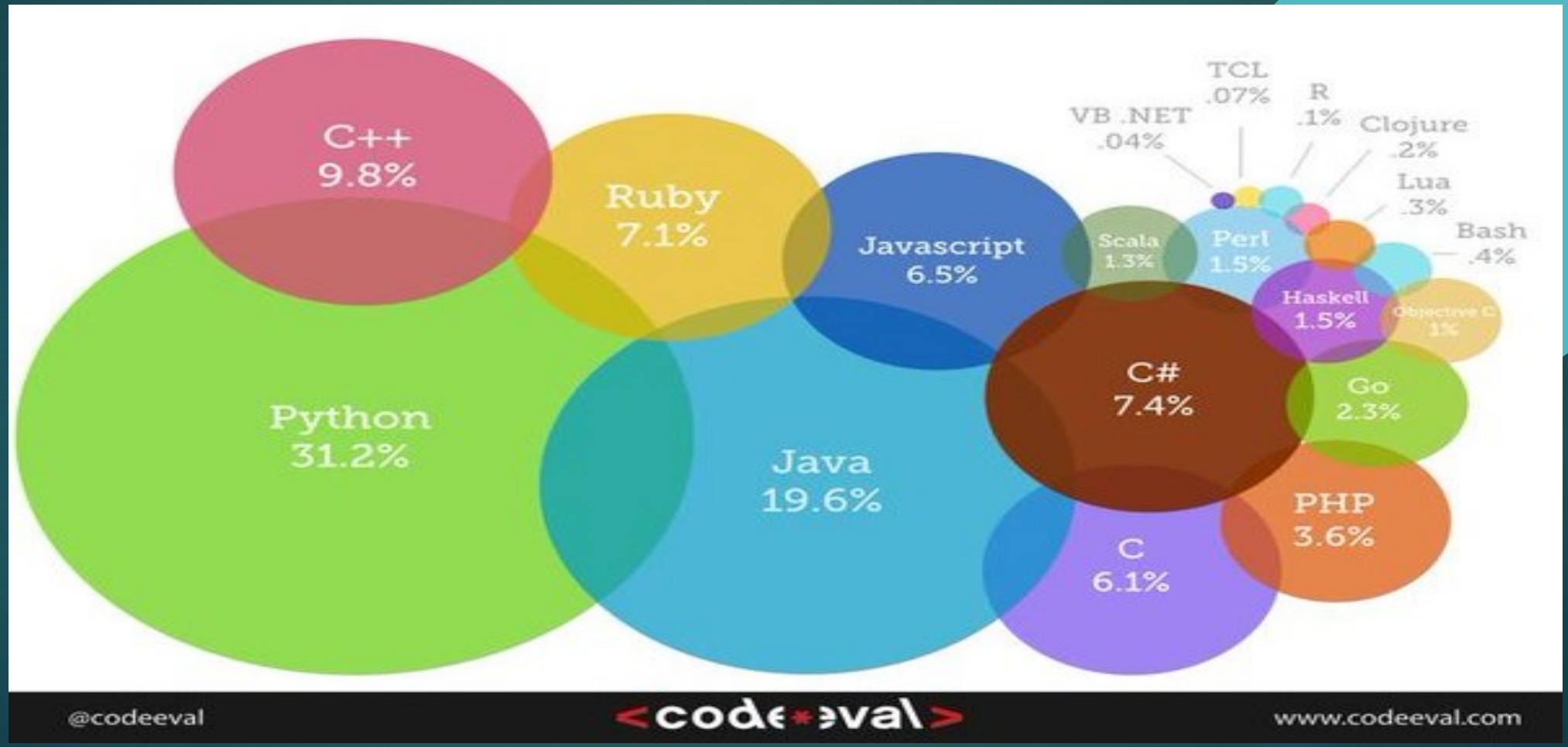
Role of IT

- BFSI (Banking & Financial Services industry):
- Health care:
- Airlines:
- Manufacturing:

IT


Current Work Breakdown
Migration
New Development
Package Modification
Package Installation
Maintenance
12%
32%
13%
17%
26%

Programming Trends



INTRODUCTION

- Created in 1990 by Guido van Rossum
  - While at CWI, Amsterdam
  - Now hosted by centre for national research initiatives, Reston, VA, USA
- Free, open source
  - And with an amazing community
- Object oriented language
  - “Everything is an object”

Features

Python is a high level interpreted object oriented language. Python is interpreted that means code do not need to compile. It is interactive that means we can run the program as well.

1) Simple
2) Easy to Learn
3) Free and Open Source
4) Portable
5) Interpreted
6) Object Oriented

Application of Python

- GUI based desktop applications
  - Image processing and graphic design applications
  - Scientific and computational applications
  - Games
- Web frameworks and web applications
- Enterprise and business applications
- Operating systems
- Language development
- Prototyping

Scientific Python

- Main so-called *scientific Python libraries* we put to use when performing elementary machine learning tasks:

- **numpy** -*mainly* useful for its *N*-dimensional array objects
- **panda**- Python data analysis library, including structures such as dataframes
- **matplotlib** - 2D plotting library producing publication quality figures
- **scikit-learn** - the machine learning algorithms used for data analysis and data mining tasks

Scientific Python

- Numpy is the core library for scientific computing in Python. It provides a high-performance multidimensional array object, and tools for working with these arrays.

- Search an element in array –1 line
- Transpose – 1line
- Change shape of array -1 Line
- Swap the values – 1 line
- And more……

Scientific Python

- **SciPy** provides a large number of functions that operate on numpy arrays and are useful for different types of scientific and engineering applications.
- Image operations and processing
- **Matplotlib**

  2-D or 3-D plotting of images

- Python in combination with Numpy, Scipy and Matplotlib can be used as a replacement for MATLAB.

How To Install

- Download the Python(installer package)
- Run Setup
- IDLE is environment for python

- Set Path(Environment variable) for Python

HOW CAN WE USE PYTHON

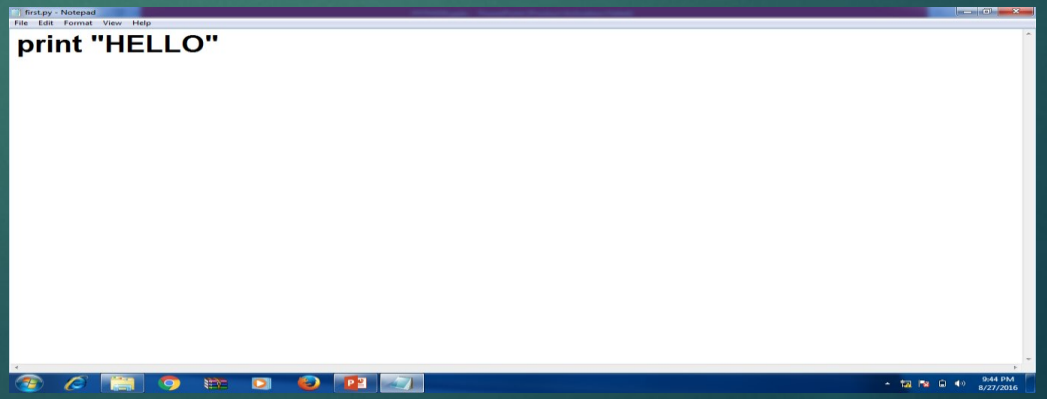
There are two ways to use the python language.

- Using Python Command Line

  On the command line we can run the commands directly.eg:
  print 'HELLO PYTHON'

- Using Command Prompt We can use and run the python commands easily.

  In this method first create a notepad file and write a program in python and save the file with extension (.py) . On the command prompt to run a python file we can use the command
  python filename.py



Data Types And variables

Python variables do not need explicit declaration to reserve memory space. The declaration happens automatically when you assign a value to a variable. The equal sign (=) is used to assign values to variables.

There are five standard data types in Python.

- Number
- String
- List
- Tuple
- Dictionary

Data Types And variables

```
counter = 100 # An integer assignment
miles = 1000.0 # A floating point
name = "John" # A string
print counter
print miles
print name
```

Multiple Assignment

Python allows you to assign a single value to several variables simultaneously. For example:

```
a = b = c = 1
```

TYPES OF NUMBER

There are four types of number.

int (signed integers) 10

long (long integers, they can also be represented in octal and hexadecimal) 51924361L

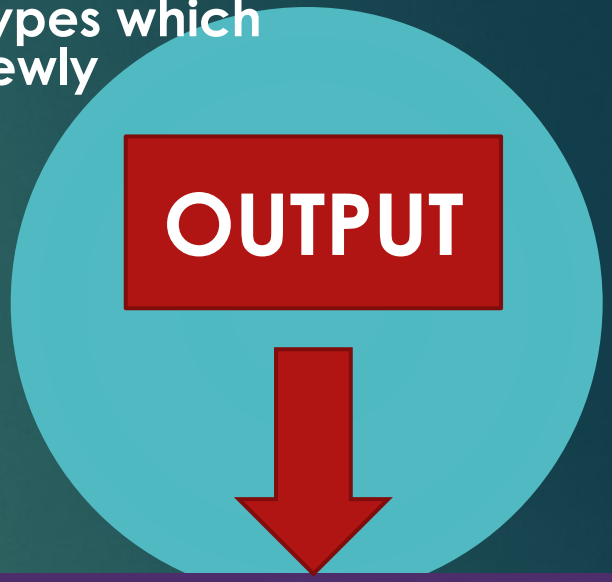
float (floating point real values) 0.2

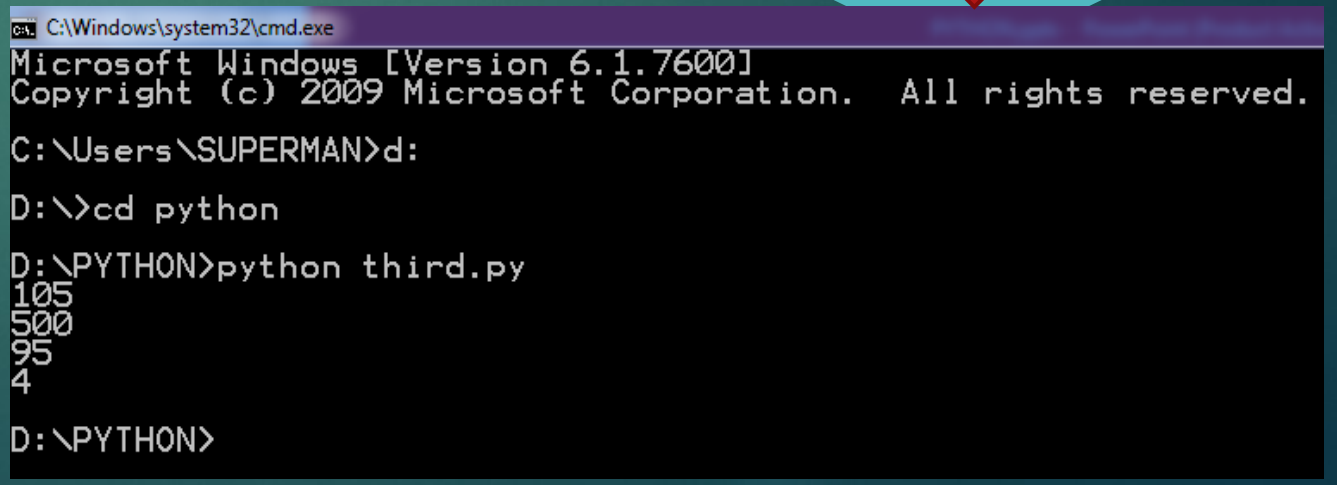
complex (complex numbers) 3.14j

NUMBER

Number data type store numeric value. They are immutable data types which means that changing the value of a number data type result in a newly allocated. Example :

```
a=100
b=5
c=a+b
d=a*b
e=a-b
f=d/c
print c
print d
print e
print f
```



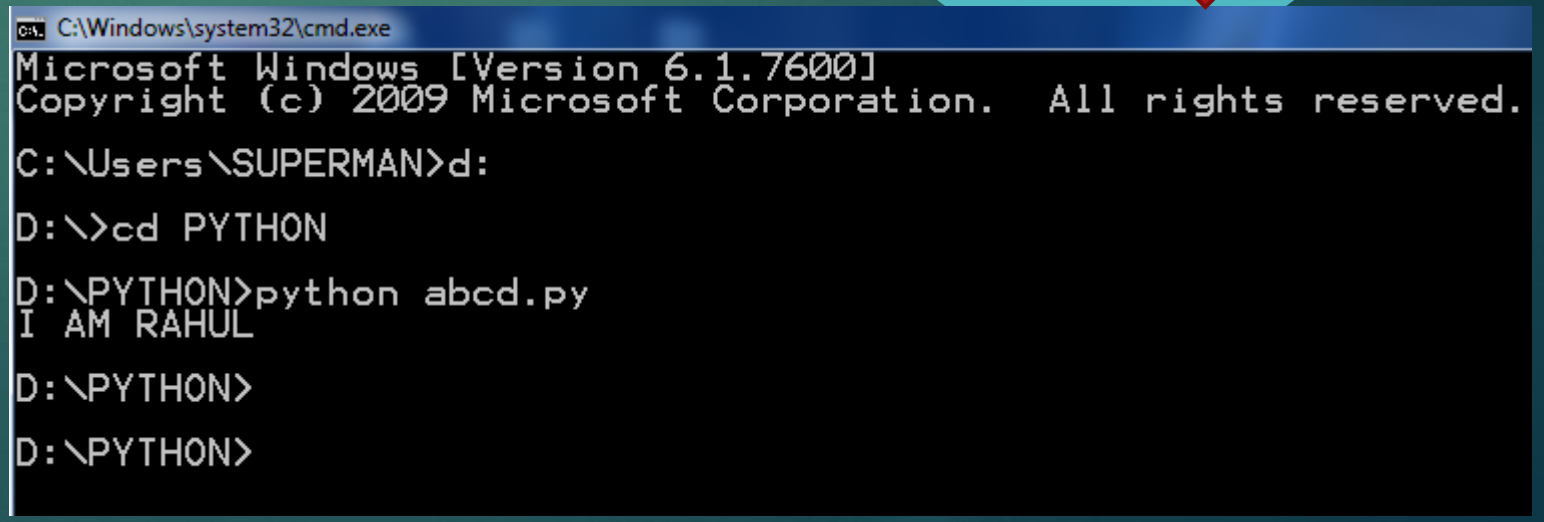


STRING

String is most popular data types in python. We can create them simply by enclosing characters in quotes. Python treat single quotes same as double quotes. Example:

```
str='I AM RAHUL'
print str
```

OUTPUT



LIST

List is a an array like structure in python.The values are seprated by(,).
It can have different type of data. Example:

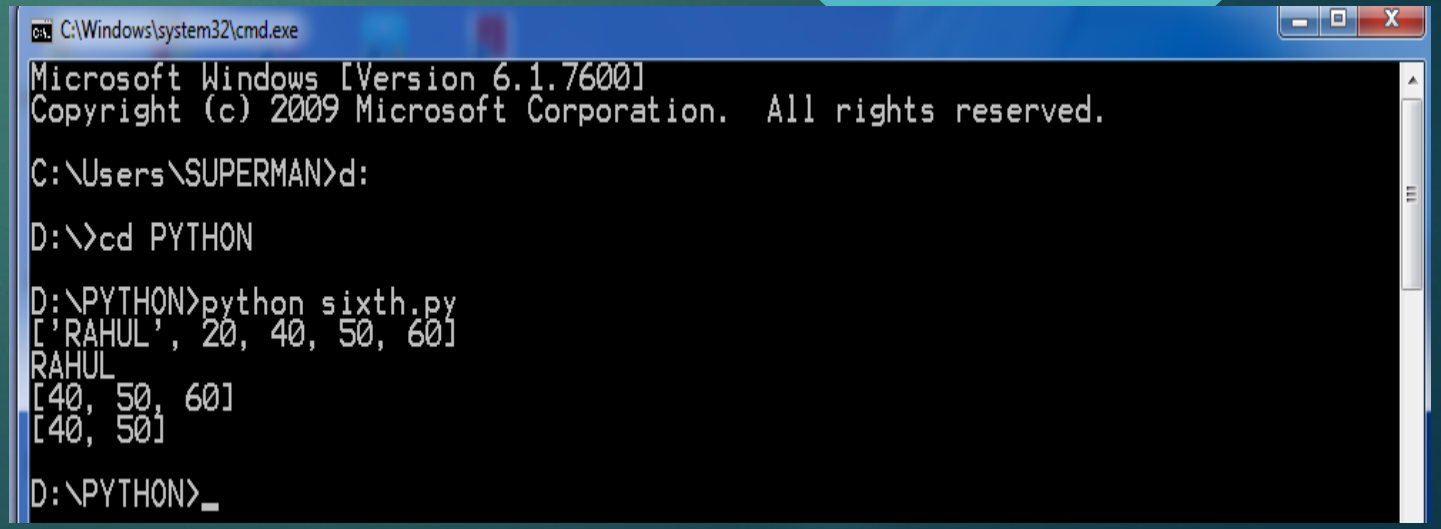
```
l=['RAHUL',20,40,50,60]
print l

print l[0]

print l[2:]

print l[2:4]
```

OUTPUT



Data type conversion

- Data Type Conversion

Function	Description
int(x)	Converts x to an integer.
long(x)	Converts x to a long integer.
float(x)	Converts x to a floating-point number.
str(x)	Converts object x to a string representation.

Tuple

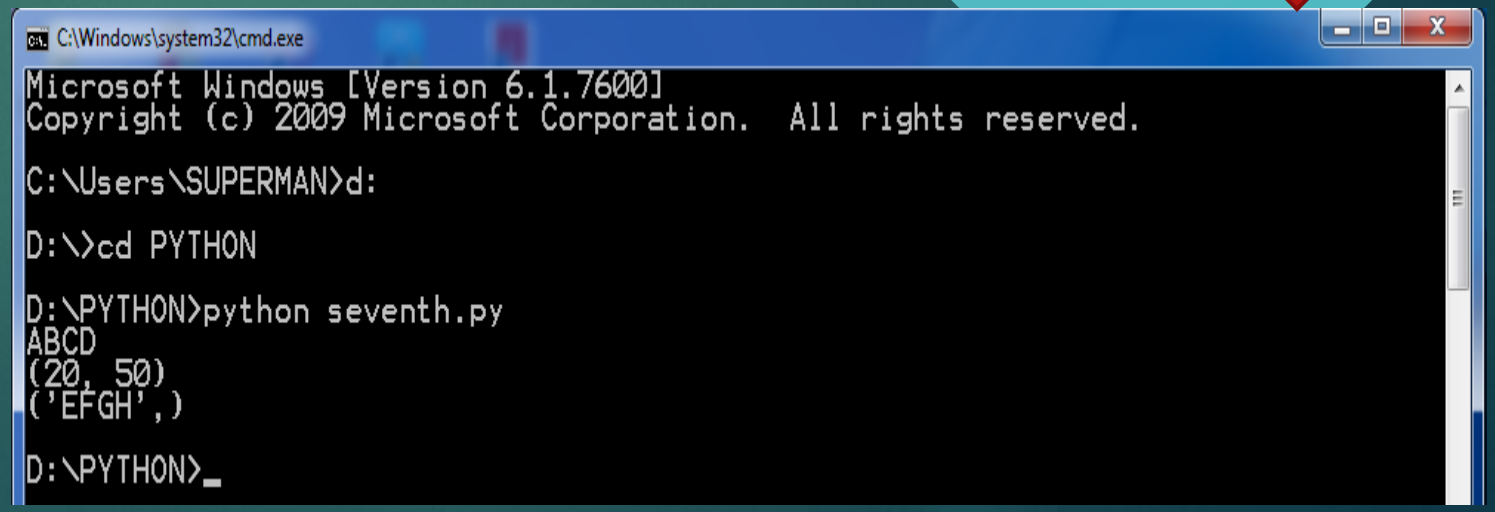
A tuple is a sequence of Python objects. Tuples are sequences, just like lists. The main differences between lists and tuples are: Lists are enclosed in brackets ([ ]) and their elements and size can be changed, while tupl
are enclosed in parentheses (( )) and cannot be updated. Tuples can b
thought of as read-only lists.

OUTPUT

```
t=('ABCD',20,50,'EFGH')
print t[0]

print t[1:3]

print t[3:]
```



Dictionary

Dictionary is an associative array. Any key of dictionary is associated with the any value. It is used to store key value pairs.Dictionary are un-ordered key value pair. Example:

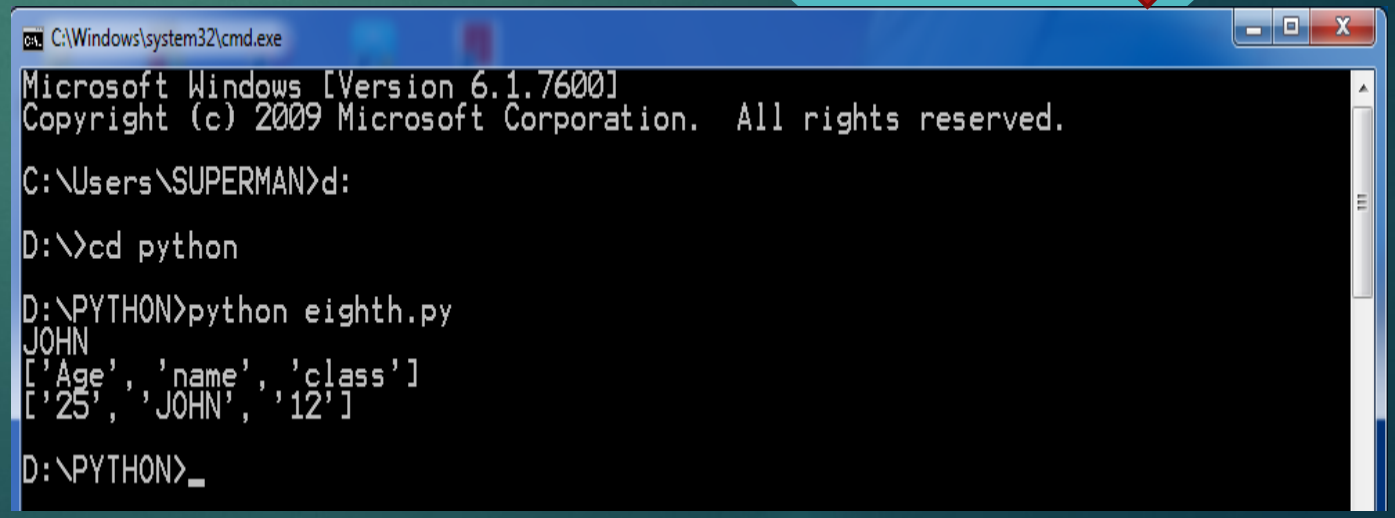
```
list={'name':'JOHN','class':'12','Age':'25'}

print list['name']

print list.keys()

print list.values()
```

OUTPUT



Main Keywords

And	or	Not
Assert	finally	Break
for	Class	print
Continue	raise	def
if	return	del
import	try	elif
in	while	else
except