

# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

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## DEPARTMENT OF INFORMATION TECHNOLOGY

### EXPERIMENT – 1: Install NLP TOOLKIT

#### Process::

To download Python, you need to visit [www.python.org](http://www.python.org), which is the official Python website.



Click on the Downloads tab and then select the Windows option.



This will take you to the page where the different Python releases for Windows can be found. Since I am using a 64bit system, I'll select "Windows x86-64 executable installer".

## Stable Releases

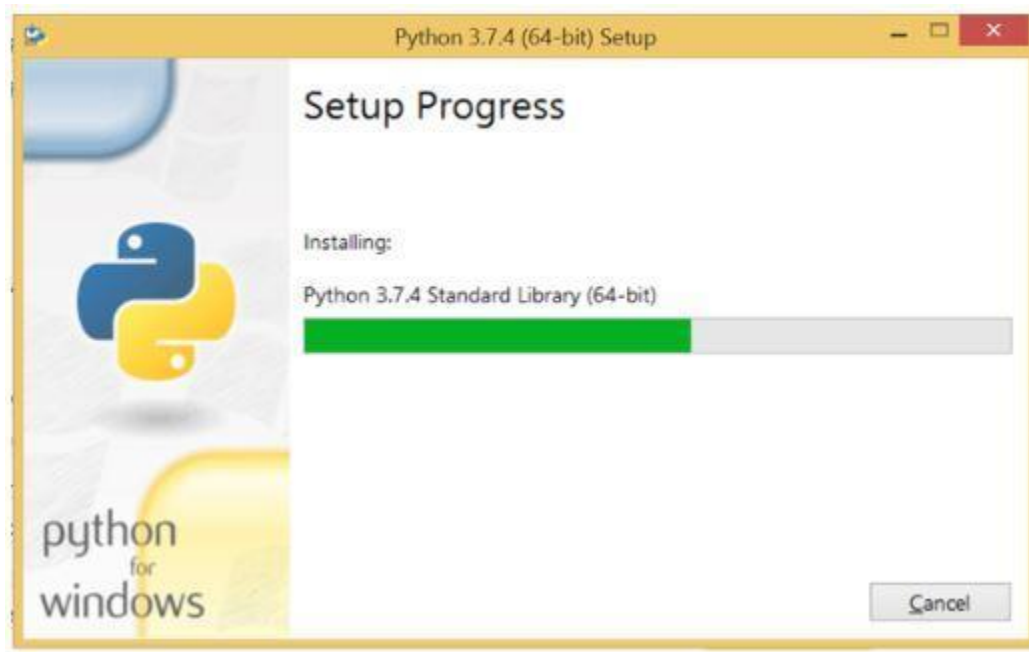
- [Python 3.7.4 - July 8, 2019](#)  
**Note that Python 3.7.4 cannot be used on Windows XP or earlier.**
  - Download [Windows help file](#)
  - Download [Windows x86-64 embeddable zip file](#)
  - Download [Windows x86-64 executable installer](#)
  - Download [Windows x86-64 web-based installer](#)
  - Download [Windows x86 embeddable zip file](#)
  - Download [Windows x86 executable installer](#)
  - Download [Windows x86 web-based installer](#)

Once the executable file download is complete, you can open it to install Python.

Click on Run, which will start the installation process.



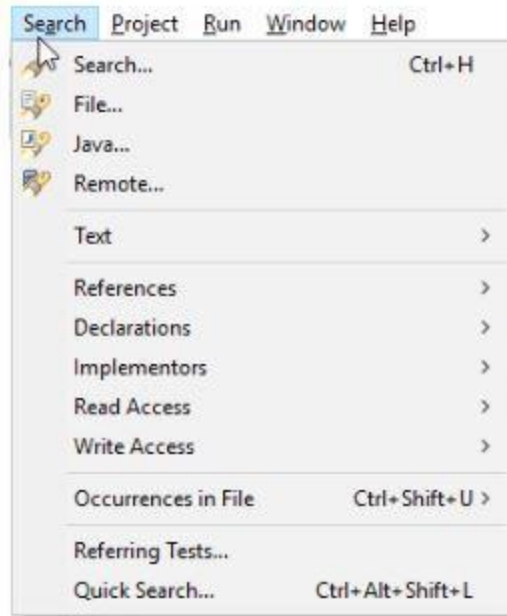
If you want to save the installation file in a different location, click on Customize installation; otherwise, continue with Install Now. Also, select the checkbox at the bottom to Add Python 3.7 to PATH.



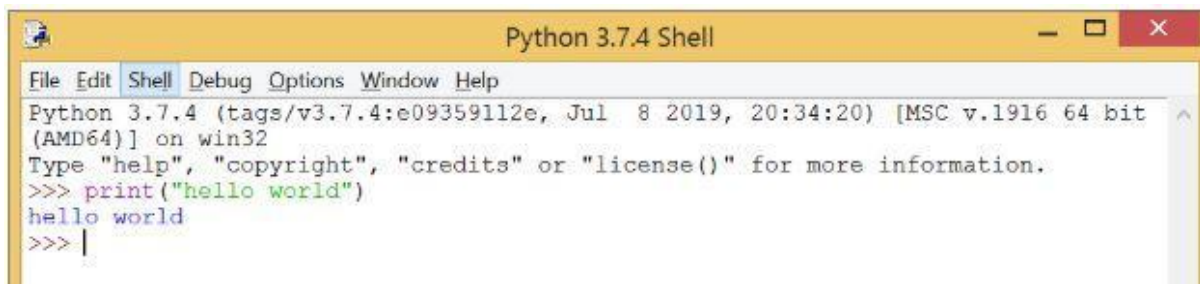
Once the installation is complete, the below pop-up box will appear: Setup was successful.

Now that the installation is complete, you need to verify that everything is working fine.

Go to Start and search for Python.



You can see Python 3.7 (64-bit) and IDLE. Let's open IDLE, which is the short form for Integrated Development Environment, and run a simple print statement.



Now , Python is successfully installed on your windows

As the same install jupyter notebook by typing the following in Command Prompt

```
C:\Users\DE LAB>pip install jupyter notebook
Collecting jupyter
  Downloading jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)
Collecting notebook
  Obtaining dependency information for notebook from https://files.pythonhosted.org/packages/f3/2b/b904c57709b83c6cbd818d21040db36719207f3d17db9b124c60cd483d94/notebook-7.0.6-py3-none-any.whl.metadata
  Downloading notebook-7.0.6-py3-none-any.whl.metadata (10 kB)
Collecting qtconsole (from jupyter)
  Obtaining dependency information for qtconsole from https://files.pythonhosted.org/packages/24/e2/7f22137bbb7270b016f6b0efa55d7598fef6ef354ba77515956bb28e8e54/qtconsole-5.4.4-py3-none-any.whl.metadata
  Downloading qtconsole-5.4.4-py3-none-any.whl.metadata (5.0 kB)
Collecting jupyter-console (from jupyter)
  Downloading jupyter_console-6.6.3-py3-none-any.whl (24 kB)
Collecting nbconvert (from jupyter)
  Obtaining dependency information for nbconvert from https://files.pythonhosted.org/packages/5b/08/6af17268360385f767c7a53dd2b71b9718c61911464fb34f5453c80cfe48/nbconvert-7.9.2-py3-none-any.whl.metadata
  Downloading nbconvert-7.9.2-py3-none-any.whl.metadata (7.9 kB)
Collecting ipykernel (from jupyter)
  Obtaining dependency information for ipykernel from https://files.pythonhosted.org/packages/c8/7d/2df9b38e2310e36a1b4a92bfe85f53ce24c638f9b7d9bd992bdeed11ce604/ipykernel-6.26.0-py3-none-any.whl.metadata
```

To install nltk type command in cmd as

## Pip install nltk

```
C:\Users\DE LAB>pip install nltk
Collecting nltk
  Downloading nltk-3.8.1-py3-none-any.whl (1.5 MB)
----- 1.5/1.5 MB 4.0 MB/s eta 0:00:00
Collecting click (from nltk)
  Obtaining dependency information for click from https://files.pythonhosted.org/packages/00/2e/d53fa4befbf2cfa713304affc7ca780ce4fc1fd8710527771b58311a3229/click-8.1.7-py3-none-any.whl.metadata
  Downloading click-8.1.7-py3-none-any.whl.metadata (3.0 kB)
Collecting joblib (from nltk)
  Obtaining dependency information for joblib from https://files.pythonhosted.org/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl.metadata
  Downloading joblib-1.3.2-py3-none-any.whl.metadata (5.4 kB)
Collecting regex>=2021.8.3 (from nltk)
  Obtaining dependency information for regex>=2021.8.3 from https://files.pythonhosted.org/packages/d3/10/6f2d5f8635d7714ad97ce6ade7a643358c4f3e45cde4ed12b7150734a8f3/regex-2023.10.3-cp312-cp312-win_amd64.whl.metadata
  Downloading regex-2023.10.3-cp312-cp312-win_amd64.whl.metadata (41 kB)
----- 42.0/42.0 kB 1.0 MB/s eta 0:00:00
Collecting tqdm (from nltk)
  Obtaining dependency information for tqdm from https://files.pythonhosted.org/packages/00/e5/f12a80907d0884e6dff9c16d0c0114d81b8cd07dc3ae54c5e962cc83037e/tqdm-4.66.1-py3-none-any.whl.metadata
  Downloading tqdm-4.66.1-py3-none-any.whl.metadata (57 kB)
----- 57.6/57.6 kB 1.0 MB/s eta 0:00:00
Requirement already satisfied: colorama in c:\users\de lab\appdata\local\programs\python\python312\lib\site-packages (from click->nltk) (0.4.6)
Downloaded regex-2023.10.3-cp312-cp312-win_amd64.whl (268 kB)
----- 268.0/268.0 kB 5.5 MB/s eta 0:00:00
Downloaded click-8.1.7-py3-none-any.whl (97 kB)
----- 97.9/97.9 kB 1.0 MB/s eta 0:00:00
Downloaded joblib-1.3.2-py3-none-any.whl (302 kB)
----- 302.2/302.2 kB 4.6 MB/s eta 0:00:00
Downloaded tqdm-4.66.1-py3-none-any.whl (78 kB)
----- 78.3/78.3 kB 723.6 kB/s eta 0:00:00
Installing collected packages: tqdm, regex, joblib, click, nltk
Successfully installed click-8.1.7 joblib-1.3.2 nltk-3.8.1 regex-2023.10.3 tqdm-4.66.1

[notice] A new release of pip is available: 23.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\DE LAB>
```

## EXPERIMENT: 2

### NLTK Tokenize: Words and Sentences Tokenizer with Example

Tokenization is one of the first step in any NLP pipeline. Tokenization is nothing but splitting the raw text into small chunks of words or sentences, called tokens. If the text is split into words, then its called as 'Word Tokenization' and if it's split into sentences then its called as 'Sentence Tokenization'. Generally 'space' is used to perform the word tokenization and characters like 'periods, exclamation point and newline char are used for Sentence Tokenization. We have to choose the appropriate method as per the task in hand. While performing the tokenization few characters like spaces, punctuations are ignored and will not be the part of final list of tokens.

### Types of Tokenization:

- Sentence tokenization
- Word tokenization

**Aim:** a) Write a python program to perform tokenization by word and sentence using nltk.

### Program for sentence tokenization:

```
import nltk

nltk.download('punkt') # Download the necessary tokenization models

from nltk.tokenize import sent_tokenize

def tokenize_sentences(text):

    sentences = sent_tokenize(text)

    return sentences
```

```
# Example text
```

```
text = "NLTK is a leading platform for building Python programs to work with human language data. It
```

```
provides easy-to-use interfaces to over 50 corpora and lexical resources such as WordNet, along with a
```

```
suite of text processing libraries for classification, tokenization, stemming, tagging, parsing, and semantic
```

```
reasoning, wrappers for industrial-strength NLP libraries, and an active discussion forum."
```

```
# Tokenize sentences
```

```
sentences = tokenize_sentences(text)
```

```
# Print tokenized sentences
```

```
for i, sentence in enumerate(sentences):
```

```
    print(f'Sentence {i+1}: {sentence}')
```

**Output:**

**Program for word Tokenization:**

```
import nltk
```

```
nltk.download('punkt') # Download the necessary tokenization models
```

```
from nltk.tokenize import word_tokenize
```

```
def tokenize_words(text):
```

```
    words = word_tokenize(text)
```

```
    return words
```

```
# Example text
```

```
text = "NLTK is a leading platform for building Python programs to work with human language data."
```

```
# Tokenize words
```

```
words = tokenize_words(text)
```

```
# Print tokenized words
```

```
print(words)
```

Output: