Downloading and installing Python

**1. Getting Python 3**

* **Linux Users**:
  + Python 3 is often preinstalled because many Linux system components use it (e.g., package managers, GUI parts).
  + To check:
    1. Open terminal.
    2. Type: python3 and press **Enter**.
    3. If you see a version message (e.g., Python 3.4.5 ... >>>), Python 3 is already installed.
  + If absent:
    1. Use your Linux package manager (e.g., apt, yum, dnf, pacman) to install package named **python3**.
    2. Check your Linux documentation for exact commands.
* **Windows Users**:
  + Go to [python.org/downloads](https://www.python.org/downloads/).
  + Website detects your OS automatically.
  + Choose **Python 3** (latest version).
  + Download .exe installer.
  + Run it, **check “Add Python 3.x to PATH”** during setup.
  + Leave other settings as default.
* **macOS Users**:
  + May already have **Python 2**, but we need **Python 3**.
  + Download .pkg installer for macOS from [python.org/downloads](https://www.python.org/downloads/).
  + Install using default options.

**2. Starting Your Work with Python**

* **Tools Needed**:
  1. **Code Editor**: Helps with writing code (syntax highlighting, code suggestions).
  2. **Console/Terminal**: Runs your Python programs and can force-stop them.
  3. **Debugger**: Runs code step-by-step to check errors.
* **IDLE (Integrated Development and Learning Environment)**:
  1. Comes with Python’s standard installation.
  2. Has:
     + **Shell window**: Immediate Python command execution.
     + **Editor window**: Writing and editing code files.
  3. Found under "Python 3.x" in your OS menu.

**3. Writing and Running Your First Python Program**

1. Open **IDLE**.
2. Go to **File → New File** (opens the editor window).
3. Save the file:
   * **File → Save As…**
   * Choose location (e.g., Desktop).
   * Name file (e.g., snake.py).
   * Use default .py extension.
4. Write code:

python

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print("Hisssssss...")

1. Save (**File → Save**).
2. Run (**Run → Run Module** or press F5).
3. Output appears in Shell window:

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Hisssssss...

**4. Common Mistakes and How to Fix Them**

* **Missing Parenthesis**:
  + If closing parenthesis is missing in print(...), IDLE warns you or shows an **EOF (End of File)** error.
  + Parentheses are highlighted in pairs for easier debugging.
* **Spelling Errors**:
  + If print is misspelled (e.g., prin), Python throws a NameError saying the name is not defined.
* **Error Messages**:
  + Contain:
    1. **Traceback** – path through the program (ignore for now in simple code).
    2. **File name & line number** – where Python detected the error.
    3. **Erroneous line** – the code Python is complaining about.
    4. **Error type & explanation** – e.g., SyntaxError, NameError.

**5. Practice Ideas**

* Modify the output message:
  + "roar!", "meow", "oink!".
* Break and fix code intentionally to learn error types.
* Reopen and rerun your saved Python files.

**6. Key Takeaways**

* Python 3 is easily installed on all major OS.
* **Linux** likely already has it, Windows/macOS require downloading.
* **IDLE** is a beginner-friendly way to write and run Python.
* .py files store Python programs.
* Errors are part of the learning process—read error messages carefully.

**❓ Knowledge Check – Q&A**

**Q1.** How can a Linux user check if Python 3 is already installed?  
**A:** Open terminal, type python3, press Enter—if version info appears, it’s installed.

**Q2.** What checkbox should Windows users enable when installing Python?  
**A:** “Add Python 3.x to PATH”.

**Q3.** What does .py stand for in Python files?  
**A:** It’s the standard file extension for Python source code.

**Q4.** What is IDLE?  
**A:** Integrated Development and Learning Environment—comes with Python for writing and running code.

**Q5.** What kind of error will occur if you misspell print?  
**A:** NameError.

**Q6.** What does EOF mean in Python error messages?  
**A:** End Of File—Python expected more code but reached the end unexpectedly.

**Q7.** Why is it important to use straight quotation marks in Python code?  
**A:** Python does not accept curly/typographic quotes.