Register Number	192325140
Name	M.Reddy Jayasree

Title:

Config File Parser:

Problem Statement:

Create a Python program that parses configuration files in INI or YAML format using the `configparser` or `pyyaml` module, respectively, and extracts key-value pairs for use in other applications or scripts

Code:

```
import configparser

import yaml

import os


def parse_ini(file_path):

    config = configparser.ConfigParser()

    config.read(file_path)
```

```python
    data = {}
    for section in config.sections():
        data[section] = {}
        for key in config[section]:
            data[section][key] = config[section][key]

    return data


def parse_yaml(file_path):
    with open(file_path, 'r') as file:
        data = yaml.safe_load(file)

    return data


def parse_config(file_path):
    if not os.path.exists(file_path):
        raise FileNotFoundError(f"The file {file_path} does not exist.")

    _, file_extension = os.path.splitext(file_path)

    if file_extension.lower() == '.ini':
        return parse_ini(file_path)
    elif file_extension.lower() == '.yaml' or file_extension.lower() == '.yml':
        return parse_yaml(file_path)
    else:
        raise ValueError("Unsupported file format. Please provide an INI or YAML file.")
```

```python
if __name__ == "__main__":

    # Example usage

    file_path = 'config.yaml'  # Replace with your file path


    try:

        config_data = parse_config(file_path)

        print(config_data)

    except (FileNotFoundError, ValueError, yaml.YAMLError, configparser.Error) as e:

        print(f"Error: {e}")
```

Output Screen Shots:


```
Select Command Prompt                                                               —    □    ×
C:\Users\Admin>python --version
Python 3.12.5

C:\Users\Admin>python
Python 3.12.5 (tags/v3.12.5:ff3bc82, Aug  6 2024, 20:45:27) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Welcome")
Welcome
>>> exit
Use exit() or Ctrl-Z plus Return to exit
>>> ^Z

C:\Users\Admin>d:

D:\>cd python programs

D:\python programs>python first.py
welcome

D:\python programs>python first.py
Traceback (most recent call last):
  File "D:\python programs\first.py", line 2, in <module>
    import yaml
ModuleNotFoundError: No module named 'yaml'

D:\python programs>cd project1

D:\python programs\project1>pip install pyyaml
Collecting pyyaml
  Using cached PyYAML-6.0.2-cp312-cp312-win_amd64.whl.metadata (2.1 kB)
Using cached PyYAML-6.0.2-cp312-cp312-win_amd64.whl (156 kB)
Installing collected packages: pyyaml
Successfully installed pyyaml-6.0.2

D:\python programs\project1>python first.py
Error: The file config.yaml does not exist.

D:\python programs\project1>python first.py
{'general': {'app_name': 'ConfigParserApp', 'version': 1.0}, 'database': {'host': 'localhost', 'port': 3306, 'user': 'admin', 'password': 'secret'}}

D:\python programs\project1>_
```

Conclusion:

This Python program efficiently handles the parsing of configuration files in both INI and YAML formats, using the `configparser` and `pyyaml` modules, respectively. It reads these files, extracts key-value pairs, and provides a flattened dictionary of configurations suitable for use in various applications or scripts. This versatility allows for the integration of configuration management into different systems, making it easier to adapt and maintain configurations in a consistent format. Whether you are dealing with simple INI files or complex YAML structures, this approach ensures that your configuration data is accessible and manageable.