



DEXAR

2021-22

**“Creativity Comes from a
Conflict of
IDEAS”**

**Department of
Computer Science And Engineering**

VISION

- **To provide technical education in the field of Computer Science and Engineering by imparting employability, research capabilities, entrepreneurship with human values.**

MISSION

- **Adopting innovative teaching learning practices through the state-of-the-Infrastructure.**
- **Establishing a conducive environment for innovations and research activities.**
- **Inculcating leadership skills, moral and social values through extension activities.**

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1

The graduates will excel in their chosen technical domains in Computer Science and Engineering.

PEO 2

The graduates will solve real world problems in computer science and engineering by applying logical and coding skills considering ethical values.

PEO 3

The graduates will work enthusiastically as a team and engage in lifelong learning.



-Mr.S.VIKASH (IV - CSE)

A few years ago, Mark Reinhold, Chief Architect of the Java Platform Group at Oracle, wrote in a blog post titled "Moving Java ForwardFaster" that Java needed to advance more quickly in order to become competitive.

A Java framework is specific to the Java programming language and serves as a platform for creating Java applications and web applications. The aim of frameworks is to provide a common structure so that developers don't have to redo it from scratch and can reuse the code provided. It also allows designers and developers to focus on creating unique features for their web-based projects rather than re-inventing the wheel through coding. Spring is one of the most widely-used Java frameworks primarily for the development of web applications. Spring supports such things as application events and listeners, externalized configuration, YAML, and type-safe configuration. Micro service frameworks can be used for deploying Java. Spring Boot is probably the best Microservice in the Java framework that works on top languages for Inversion of Control, Aspect-Oriented Programming, etc

JavaScript (js) is a light-weight object-oriented programming language. JavaScript is so popular that it's the most used programming language in the world, used as a client-side programming language by 98.0% of all websites. Apache Parquet is an open source, column-oriented data file format designed for efficient data storage and retrieval. It has seen widespread adoption for fast analytical querying. The required skill for the upcoming years is to understand the basics on Java frameworks, JavaScript and microservices can enrich the developing knowledge of each and everyone.

Editorial Student Member : Mr.S.VIKASH (IV - CSE)

Table of Contents

01.

AI in a simple way

P.01

02.

Designing hardware for Detecting
Traffic speed using AI

P.04

03.

Blockchain Impact

P.07

04.

Do it Learn it Activity

P.09

05.

Hugging face model Using
PYTHON

P. 13

06

Whatsapp message automation
using PYTHON

P. 15

07

NEO Setup Your Private Blockchain

P.18

08

Python-based 3D Surface Plot

P.22

09.

Using Modin, Scale Your Pandas
Workflow

P.24

10.

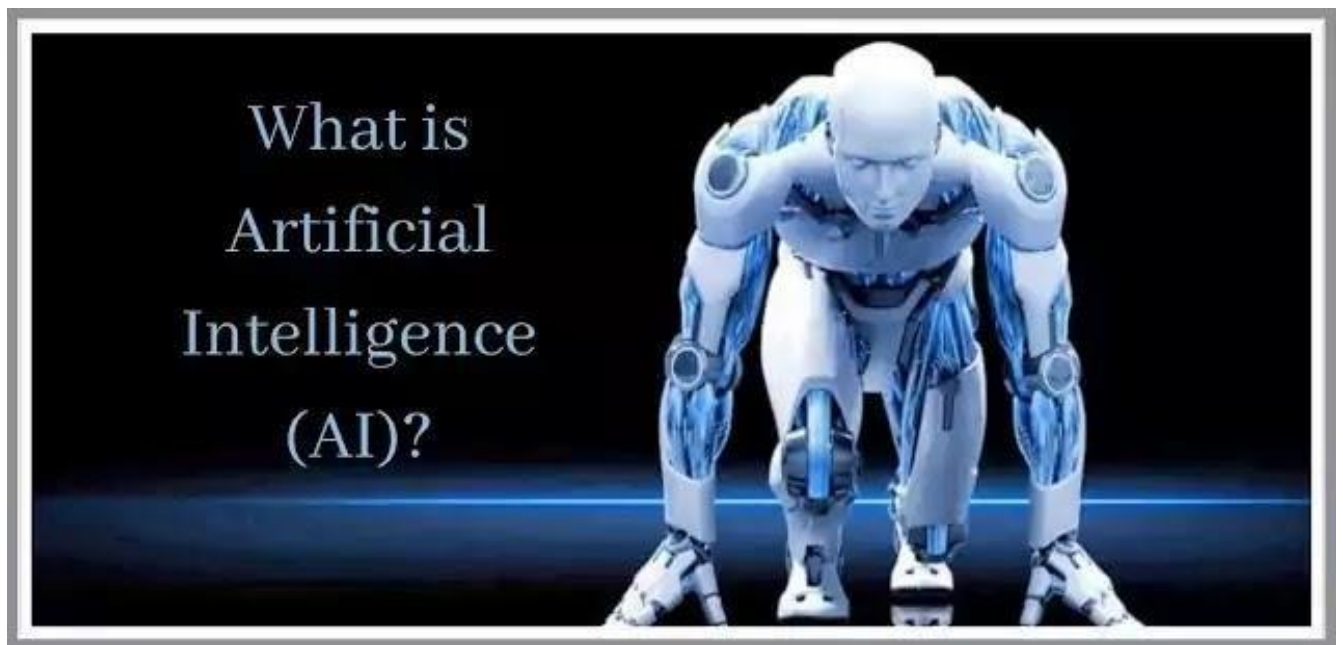
Project Glimpses

P.28

11.

Do it Learn it Activity - SOLUTIONS

P.30



AI in a simple way

AI (in Communication) AI, a wide branch of Computer Science, is used to create intelligent machines that can recognize human speech, detect objects, solve problems and learn like humans. Humans can write and read text-data in any language.

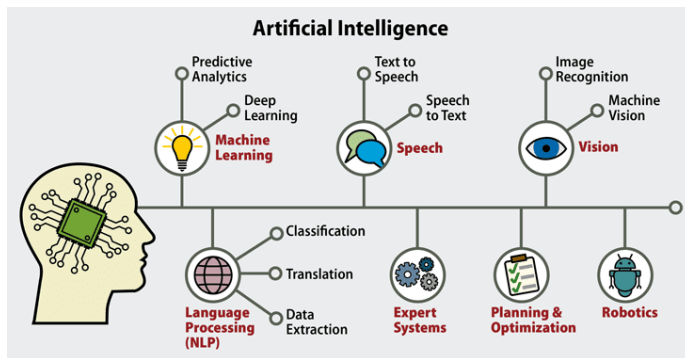


AI Server, AI made simple

INTRODUCTION:

“CodeProject” A locally installed, independently hosted, quick, cost-free, and open-source artificial intelligence server, AI Server supports any platform and any language. It may be utilised from any platform and in any language with no off-device or out-of-network data transmission required. It runs in a Docker container or as a Windows service.

EXAMPLES OF ARTIFICIAL INTELLIGENCE



The 'What' is simple:

- ❖ An AI server that can be used by any app and in any language that is locally installed, self-hosted, quick, free, and open source. Install CodePrect.AI, and an AI server will be available.Done.

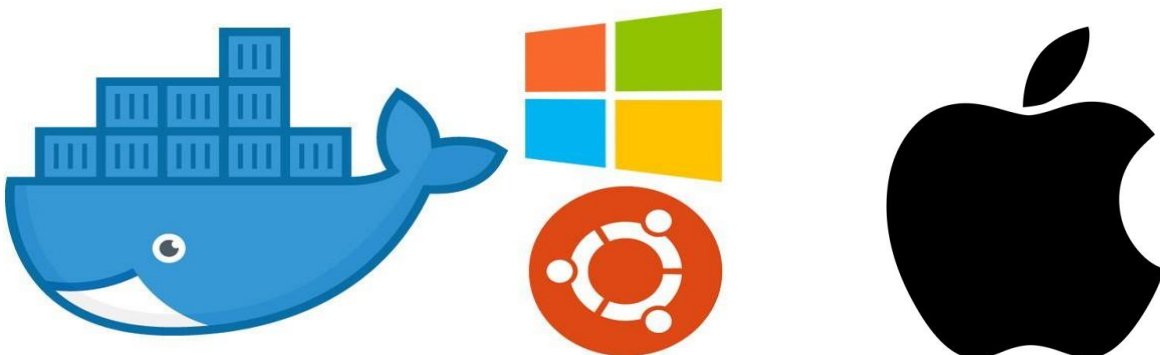
The 'Why':

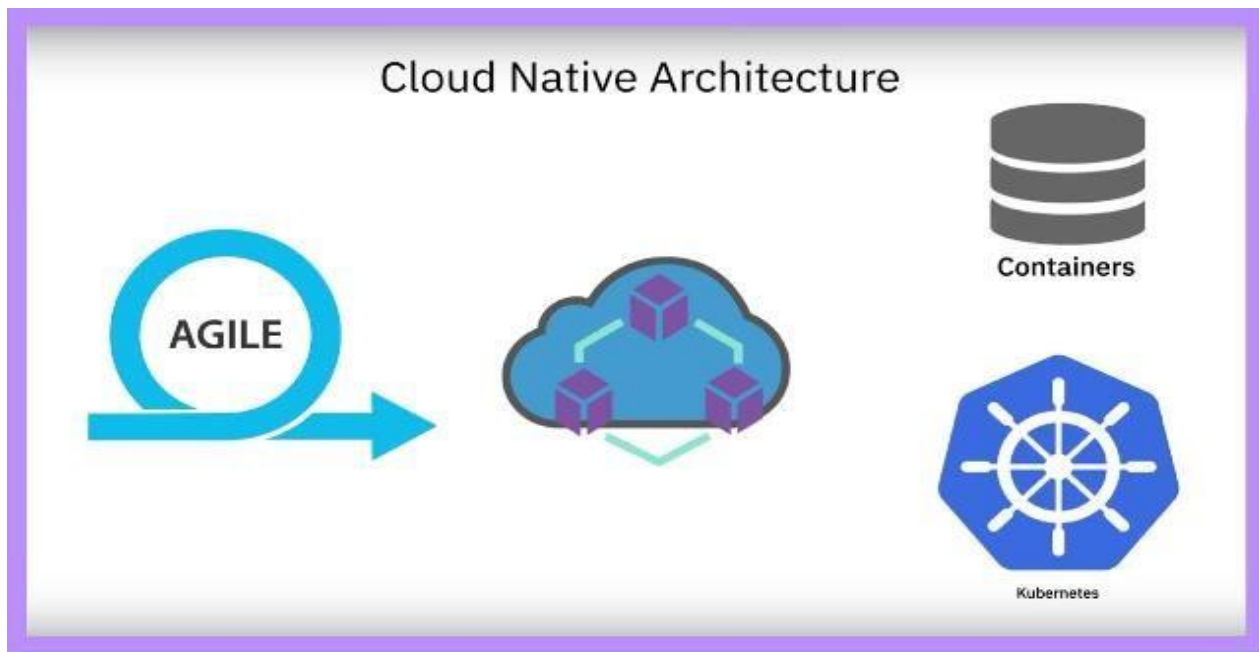
- ❖ The use of AI programming is something that every developer should be familiarwith.

Examples of AI coding contain too many moving components.

The utilization of cloud services is frequently necessary for AI solutions.

SUPPORTED PLATFORM:





How can I use it to play?

- Using the features when running
- Install and Run

For a Windows Service, **Download the latest version**, install, and launch the shortcut to the server's dashboard on your desktop or open a browser to <http://localhost:5000>.

- For a Docker Container for 64 Bit Linux run ***docker run -p 5000:5000 --name CodeProject.AI-Server -d -v <local directory>:/usr/share/CodeProject/AI codeproject/ai-server*** where <local directory> is some existing directory on the host machine such as
 - ***C:\ProgramData\CodeProject\AI*** on Windows
 - ***/usr/share/CodeProject/AI*** on Linux
- On the dashboard, at the bottom, is a link to the demo playground. Open that and play!
- Code execution and debugging
- Clone the repository for CodeProject

CodeProject.AI Server

- Verify your installation of Visual Studio Code or Visual Studio 2019+.

Start the setup programme in /Installers/Dev.

- Debug the front-end server application.

CONCLUSION:

Thus the "CodeProject" of AI Server can currently

- Detect objects in images
- Detect faces in images
- Detect the type of scene represented in an image
- Recognize faces that have been registered with the service
- Perform detection on custom models.

- Kiruba.E(III CSE)

Designing hardware for Detecting Traffic speed using AI



INTRODUCTION:

Traffic speed detection is a lucrative industry. Municipalities use it all throughout the world to discourage speeders and make money by issuing speeding citations. However, the traditional RADAR or LIDAR-based speed detectors are highly expensive. This article series demonstrates how to create a passably accurate traffic speed detector using only deep learning and run it on a Raspberry Pi or other edge device. The TrafficCV Git repository makes the code for this series available for download. We will assume that you are familiar with neural networks and AI fundamentals. The gear for our edge computing project, including the Raspberry Pi 4, the ArduCam 5MP camera, and the Coral USB AI accelerator, was covered in the previous article.

Raspberry Pi OS

We'll use the most recent 32-bit release of the armhf Debian ARM port-based Raspberry Pi OS (formerly Raspbian). Although there are 64-bit versions of the Raspberry Pi OS, 64-bit support for the Pi is still in testing. Although 64-bit code could considerably enhance performance in programmes like OpenCV, we are more concerned about base component reliability at this point of prototyping. After downloading, we'll use the

official Raspberry Pi Imager or a third-party imager like Balena Etcher to write the OS image to the 32GB microSD card from our LABISTS kit.

Since remote access is restricted by default, we'll need to connect a USB keyboard, mouse, and HDMI-capable monitor to the Raspberry Pi before we can use it for the first time. The card may then be inserted into the case slot, revealing the Raspberry Pi's microSD slot, and the power supply can be turned on. Red indicates power and green indicates microSD access on the Pi's two status LEDs. As the Raspberry Pi starts up from its microSD card, assuming everything is in order, you should observe a steady red LED and a flickering green LED. There are numerous tutorials available for bootup problems, using the startup wizard, and first-time Raspberry Pi setup.

Security Considerations:

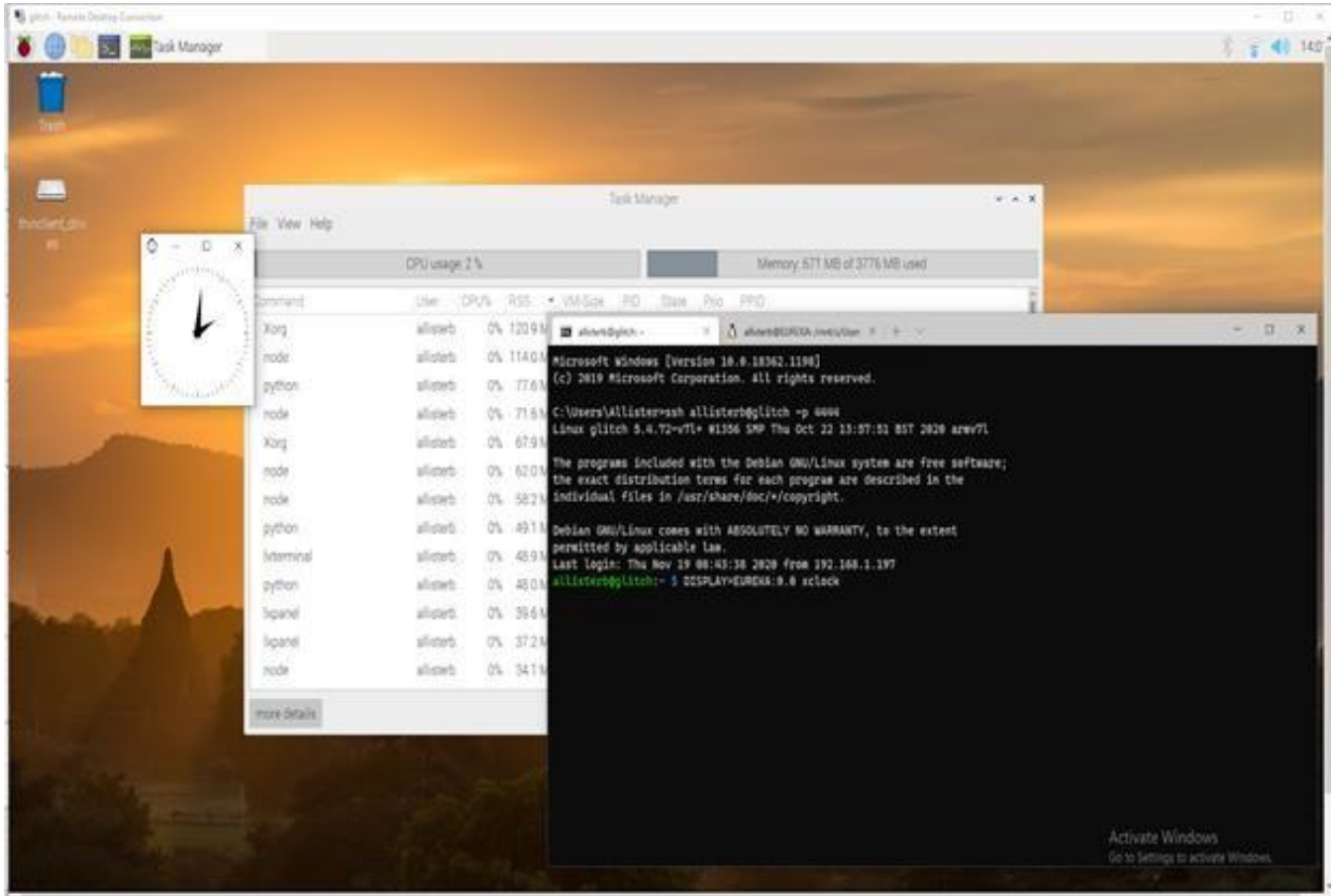
In 2020, there will reportedly be 26.66 billion active IoT devices. Many of these gadgets are unlocked, making them susceptible to hacking and theft. Municipalities and local governments will use our technology, which may have access to sensitive data and systems, when it is deployed in public areas. As a result, it is crucial that we incorporate security into our whole design. IoT prototyping programmes are designed to put off thinking about device security until "later." In many situations, "later" never comes, as IoT devices are made available to the public without even the most basic security precautions, making them an easy target for hackers. It's advised that we take at least nine of the basic security measures listed in the "Securing your Raspberry Pi" page.

- For the default Pi user, create a secure password. When the Pi device boots up for the first time, this should be done.
- Turn off auto-login. Pi will automatically log in as the pi user to the Pi's LXDE desktop by default, but we should always request a password at login.
- Turn off Bluetooth. The Bluetooth capabilities of the Pi 4 should be disabled since we don't currently require them.
- Wi-Fi security connection A WiFi router with basic security features activated, such as WPA2-PSK authentication, not broadcasting its SSID, and employing a MAC filter to limit access to only known network devices, should ideally be connected to the Raspberry Pi.

The /etc/wpa supplicant/wpa supplicant.conf file contains the Pi WiFi setup, and command-line editing is preferable to using the raspi-config utility.

- Add the most recent packages and security updates to your Debian installation.

- Install a firewall on the Pi. Only within a private subnet should remote access to services be permitted.
- A non-standard port should be used for SSH.
- Instead of using the default Pi user, make a new user and utilise it for all development tasks. Put the pi user's SSH access on hold.
- Disable password authentication over SSH and solely use key authentication.



CONCLUSION:

This article explains how to set up the Raspberry Pi for remote access via WiFi using SSH and RDP from a Windows 10 computer, secure it, and install the operating system on it.

-Karunya.M(II CSE)

Blockchain Impact

As we move away from the age of the pandemic and towards the era of the „new normal,“ it's likely that blockchains will be front and center of the progress we make in addressing these new societal concerns and redefining the true meaning of wealth in the brave new world of digital finance.



INTRODUCTION:

Blockchain marketplaces are naturally more secure than their traditional counterparts. The nature of the public ledger is that the data within the blockchain is fully encrypted and protected, meaning that no single party has the power to manipulate the information within, making the technology ideal for startups to leverage.

Furthermore, blockchain can also combat the circulation of fraudulent drugs and treatments, due to its immutable qualities.

How Will Blockchain Impact You in the Future?

Data integrity, traceability, and autonomous execution are the three main focuses of blockchain/DLT. I hope this article may provide you some ideas for a data challenge you wish to work on.

This content was paid for by a company. These kind of articles are meant to inform you about goods and services that we believe are beneficial and worthwhile for developers.

THE UNDERLYING LOGIC:

Breaking up the phrase "blockchain" into its two components, "block" and "chain," makes it simpler to comprehend. The chain illustrates the connections between the data, whereas the block represents the data itself. These distinctions aid in classifying blockchain into the public blockchain and the private blockchain, which are the two main divisions. The public version allows users to trace the beginning of a data chain thanks to their data structures, and the algorithmic linkage ensures the data's immutability and integrity. With traceable and immutable data integrity now available, autonomous contract execution offers a potent method for securely storing data.

In ten years, how will blockchain technology integrate into everyone's lives? Are you fascinated about the blockchain's fundamental logic? Ever ponder how someone with your background as a software engineer might take part in such cutting-edge technology?

As a software developer working in the blockchain business, I offer my vision in this post. I go through what you may anticipate as well as how to adopt this cutting-edge technology.

BLOCK CHAIN CAN WORK IN EVERY INDUSTRY:

Let's examine a straightforward health care use case on a private blockchain. In this scenario, patient records serve as the data blocks and the chains are the transactions that update the data blocks. This implies that the data block contains a record of every patient's data as well as any modifications to that data. The data block, for instance, keeps track of patient operations and medication information.

Blockchain technology makes it simple and secure to transfer a patient's medical records across hospitals. The data block, for instance, keeps track of patient operations and medication information. The patient's record's details may automatically result in insurance claims. The insurance company can be sure that the data they get is accurate because this procedure is automated.

THE FUTURE AHEAD

You now understand that the core principles of blockchain are reliable data integrity and prompt contract execution. What are the advantages then? This brings us to the contemporary global infrastructure for data sharing: the internet.

The difficulty of connecting and exchanging data has risen recently, as internet infrastructures become more sophisticated. Both good and bad aspects of this friction may be found: on the positive side, businesses are retaining customer data to protect security and privacy. On the other hand, businesses deliberately block data exchange with other businesses in order to benefit themselves. The automated technology that will enable engineers like you and me to manage data more effectively in the future is called blockchain.

CONCLUSION:

Data accuracy, traceability, and autonomous execution are the three main tenets of blockchain/DLT. It establishes a setting where data may be trusted and sent automatically. It offers an option for data stuck in overly complex IT infrastructures, which lowers the operating expenses of processing data. I hope this article might provide you some ideas for a data issue you wish to solve.

- Ajmal.S(III CSE)

‘DO IT LEARN IT’- ACTIVITY

FREQUENCY OF LETTER’S

Problem Description:

Find the frequency of the characters and edit the original String in such a way that it depicts each character with its frequency

Input Format

The Input Line should be String

Constraints

NULL

Output Format:

Output Line should be a String

Sample Input:

aaaabbrrt

Sample Output:

a4b2r2t

Explanation:

There are four 'a's in the given string so a4 There are two 'b's in the given string so b2 There are two 'r's in the given string so r2 There is one 't' in the given string so t.

For Solutions Refer Page No:30

---Mr.PUGAZHENDHI (III CSE)

TROOP SELECTION

Problem Description:

Commander-in-chief of Indian Army Wing-I wants to select jawans for west punjab troop. To ensure reliable security in west punjab Commander-in-chief needs P level of strength in west punjab. Every Jawan is represented by a Decimal code d_i and his strength level is number of set bits(1) in the decimal code d_i . Now Commander-in-chief wants to know the strength level of his troop consists of N Jawans in West punjab.

Input Format:

- First Line Contains Two space separated Integers P(Strength required in West Punjab) and N(Number of Jawans inTroop).
- Second Line Contains Decimal Code ofJawans[$d_1, d_2, \dots, d_{n-1}, d_n$]

Constraints

$$1 \leq P \leq 100$$

$$1 \leq N \leq 100$$

$$1 \leq d_i \leq 100$$

Output Format:

Print weak, if Calculated strength of Troop is less than P
Print enough, if Calculated strength of Troop is equal to P
Print strong, if Calculated strength of Troop is greater than P

Sample Input:

10 3

5 6 7

Sample Output:

week

Explanation:

Strength of decimal code 5,6 and 7 are 2, 2 and 3 respectively. Total Strength is 7, required is 10. So the output is "week".

For Solutions Refer Page No:31

---Mr.THRISHAN (III CSE)

Reverse the String without affecting special characters

Problem Description:

Get a String from the user and reverse the characters of the string without affecting the positions of special characters

Input Format:

string

Constraints

NULL

Output Format:

String

Sample Input:

hi!KITZ

Sample Output:

ZT!IKih

Explanation:

Special character '!' is retained in the same position.

For Solutions Refer Page No:32

---Mr.Revan.R (II CSE)

Frequency of Vowels

Problem Description:

Get a String from the user and display the vowels in the string with its frequency
If there is no vowels in the input string the output should be empty.

Input Format:

String

Constraints:

NULL

Output Format:

String

Sample Input:

i am a programmer

Sample Output:

a3e1i1o1

Explanation:

In the given string vowels 'a' is occurred 3 times 'e' is occurred 1 time 'i' is occurred 1 time 'o' is occurred 1 time

For Solutions Refer Page No:33

-Ms Archana.A(II CSE)



Hugging Face Datasets

Model using python azure ML SDK

HUGGING FACE MODEL:

- This article will demonstrate how simple it is to call and use hugging face models in an AMLworkspace.
- Additionally, observe how simple it is to download pre-trained models from embracingface.
- After downloading, we may use the data in Python code.
- Demonstrate the creation of a pipeline to consume the models.



STEPS:

First, apply this version's update to the transformer package.

```
%pip install transformers==4.17.0
```

The generating code was unable to locate the configuration json files without them. now imports from transformers import GPT2Config, GPT2Tokenizer, GPT2LMHeadModel, pipeline

Let's get the model of a hugging face

```
tokenizer = GPT2Tokenizer.from_pretrained("gpt2")
```

```
tokenizer.save_pretrained("./model/tokenizer")
```

```
model = GPT2LMHeadModel.from_pretrained("gpt2")
```

```
model.save_pretrained("./model/weights")
```

```
config = GPT2Config.from_pretrained("gpt2")
```

```
config.save_pretrained("./model/config")
```

Create the pipeline

```
generator = pipeline(
```

```
    "text-generation",
```

```
    model="./model/weights",
```

```
tokenizer="./model/tokenizer",  
config="./model/config",  
)
```

To send, package up some text.

The text to transmit is prompt.

The resulting text can only be as long as max length.

Number of generated and returned sentences is indicated by the variable num return sequences.

```
prompt = "what is the best place in world"
```

```
max_length = 50
```

```
num_return_sequences = 3
```

utilising model inference

```
generator(prompt, max_length=max_length,  
num_return_sequences=num_return_sequences)
```

OUTPUT:

```
[{'generated_text': 'what is the best place in world to learn and be educated about  
the best fields of life?' he asks. "I believe that what is considered what is  
considered to be more dangerous is not what the best would do." The question of  
whether or not'},
```

```
{'generated_text': 'what is the best place in world to buy a book so you can make  
your own? How is it different if the author is not interested in doing a single book  
or reading a couple of books in advance because they are not sure what a novel  
is'},
```

```
{'generated_text': 'what is the best place in world for young scientists (myself  
included) to study the environment and to think about our planet and the future in  
the interest of other people?\n\nIn a world with a lot of different weather events  
and muchmore'}]
```

-Ms Rajeshwari.M(III CSE)



WhatsApp is used by millions of people, yet we frequently become weary of reacting to the same messages over and over again. Wouldn't it be wonderful if there was a simpler method? Would you want to text your mother, lover, or friend while you were asleep? Why not make this work automated?



Introduction:

Python is a high-level programming language that practically all major corporations in the world, including Google, Facebook, NASA, and others, employ. In recent years, Python has surpassed all other languages to emerge as the most well-liked and commonly utilized programming language worldwide. The Times of India said that Python was one of the top 5 highest-paid programming languages in 2021.

WHY PYTHON

Python was developed by Guido van Rossum in 1991 and it is an interpreted, object-oriented programming language.

Everything from web development to machine learning, artificial intelligence, and data science can be done using Python.

Python does not need you to be concerned about syntax, in contrast to several other programming languages. Python writing is almost as good as English writing. Use the appropriate "modules" or "functions" and let Python take care of therest.

Python's simple syntax makes it ideal for both experienced developers who want to swiftly produce software prototypes and earn a respectable wage as well as beginners who are learning how to code.

Let's get to the point without wasting any more time!

❖ Create a new project inPyCharm

A Python IDE for professional development is PyCharm.With intelligent aid, coding assistance, and error avoidance, it makes it easier for you to create code. After installing PyCharm, create a new project in your chosen file type and give it the name you choose. Selecting Python as a file type is the step that is most important. You may get it from their website if you don't already have it.

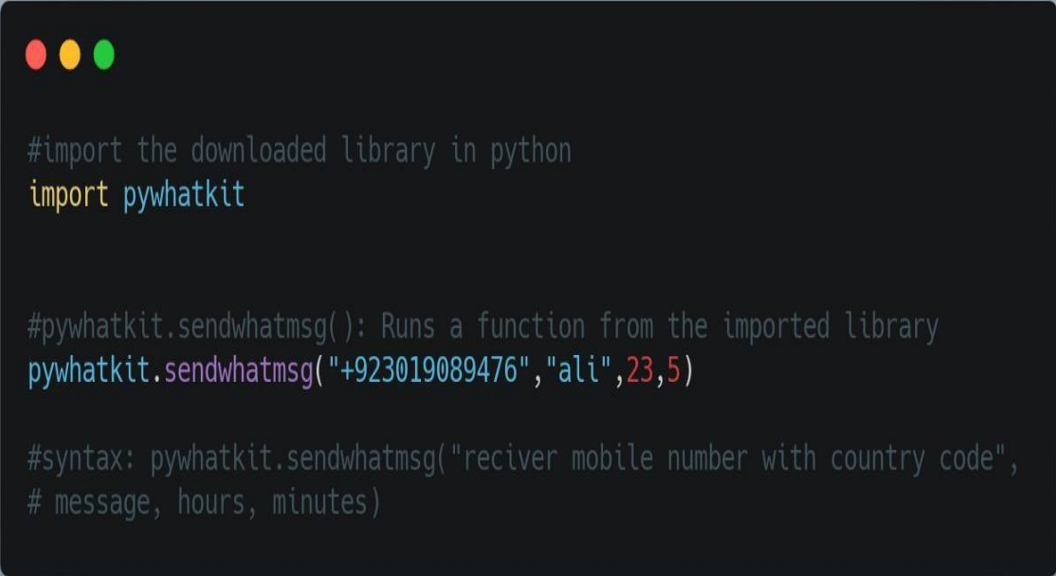


❖ Installpywhatkit

open a terminal in the pycharm window and paste the following code

```
pip install pywhatkit
```


❖ Type the following code:



```
#import the downloaded library in python
import pywhatkit

#pywhatkit.sendwhatmsg(): Runs a function from the imported library
pywhatkit.sendwhatmsg("+923019089476","ali",23,5)

#syntax: pywhatkit.sendwhatmsg("reciver mobile number with country code",
# message, hours, minutes)
```

Conclusion:

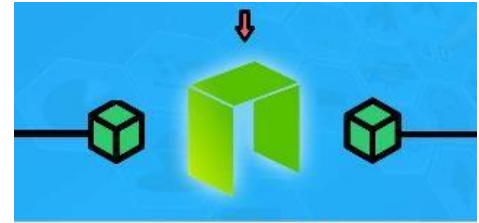
Python-based WhatsApp message automation might be useful in a variety of contexts. Like when you want to convey information to your friends or clients in case one of them doesn't take a call, make surveys more engaging, or even organise a contest. Not only is it easy, but it simply needs two lines of code and needs no more work or subscription.

-Mr.Sakathi Kumar.P

NEO Setup Your Private Blockchain

neo-project/**neo-blockchain-toolkit**

Develop, debug, test, deploy, track and manage Neo Blockchain Smart Contracts



What is **NEO**?

INTRODUCTION:

Private Chain is crucial for testing dApps and smart contracts, as well as for data privacy and permission management. A private chain is a standalone version of the public blockchain that is installed on your home computer. In this post, we'll go over the fundamental procedures for setting up a local computer to run the NEO private chain and acquire some initial NEO and GAS tokens.

Installing and configuring Docker on the local system is required before we can build up the NEO private network, also known as the private-net. You may immediately download Docker if you have Windows 10 Pro installed. The Docker toolbox has to be installed and set up for an older version of Windows.

Once Docker has been installed, launch it and let it run. Then, launch PowerShell or a command line and type the following command:

```
docker -v
```

This will display the version of Docker that has been installed in your system.

Windows PowerShell

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\admin> docker -v
Docker version 18.03.0-ce, build 0520e24
PS C:\Users\admin>
```

```
docker pull cityofzion/neo-privatenet
```

Start the container by executing the following command:

```
docker run --rm -d --name neo-privatenet -p 20333-20336:20333-20336/tcp  
-p 30333-30336:30333-30336/tcp cityofzion/neo-privatenet
```

To check if the container is running or not, fire this command which will display the current running container(s).

```
PS C:\Users\admin> docker run --rm -d --name neo-privatenet -p 20333-20336:20333-20336/tcp -p 30333-30336:30333-30336/tcp cityofzion/neo-privatenet  
6a1c0e12844022b83ac72f87cd798ee4aa3e928375df80a1ee8f5719bad137d8  
PS C:\Users\admin> docker ps  
CONTAINER ID        IMAGE               COMMAND                  CREATED            STATUS              PORTS  
6a1c0e128440        cityofzion/neo-privatenet   "/bin/bash /opt/run..." 6 seconds ago      Up 3 seconds       0.0.0.0:20333-20336->20333-20336/tcp, 0.0.0.0:30333-30336->30333-30336/tcp  
PS C:\Users\admin>
```

Use the developer version (preferred for development) or download the NEO-GUI wallet from [this link](#).

Replace the following network information in the config.json and protocol.json files.

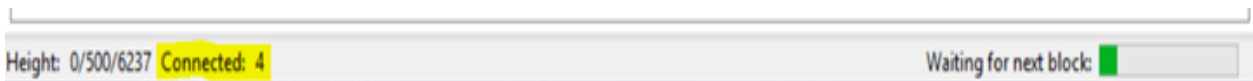
This is how the revised config.json should appear:

```
JavaScript  
{  
  "ApplicationConfiguration": {  
    "Paths": {  
      "Chain": "Chain",  
      "Notifications": "Notifications"  
    },  
    "P2P": {  
      "Port": 20333,  
      "WsPort": 10333  
    },  
    "RPC": {  
      "Port": 30333,  
      "SslCert": "",  
      "SslCertPassword": ""  
    },  
    "DataDirectoryPath": "ChainTestNet",  
    "CertCachePath": "Certs",  
    "NodePort": 20333,  
    "WsPort": 20334,  
    "UriPrefix": [ "https://localhost:20332" ],  
    "SslCert": "",  
    "SslCertPassword": ""  
  }  
}
```

protocol.json

```
{
  "ProtocolConfiguration": {
    "Magic": 56753,
    "AddressVersion": 23,
    "SecondsPerBlock": 15,
    "StandbyValidators": [
      "02b3622bf4017bdfe317c58aed5f4c753f206b7db896046fa7d774bbc4bf7f8dc2",
      "02103a7f7dd016558597f7960d27c516a4394fd968b9e65155eb4b013e4040406e",
      "03d90c07df63e690ce77912e10ab51acc944b66860237b608c4f8f8309e71ee699",
      "02a7bc55fe8684e0119768d104ba30795bdcc86619e864add26156723ed185cd62"
    ],
    "SeedList": [
      "127.0.0.1:20333",
      "127.0.0.1:20334",
      "127.0.0.1:20335",
      "127.0.0.1:20336"
    ],
    "SystemFee": {
      "EnrollmentTransaction": 1000,
      "IssueTransaction": 500,
      "PublishTransaction": 500,
      "RegisterTransaction": 10000
    }
  }
}
```

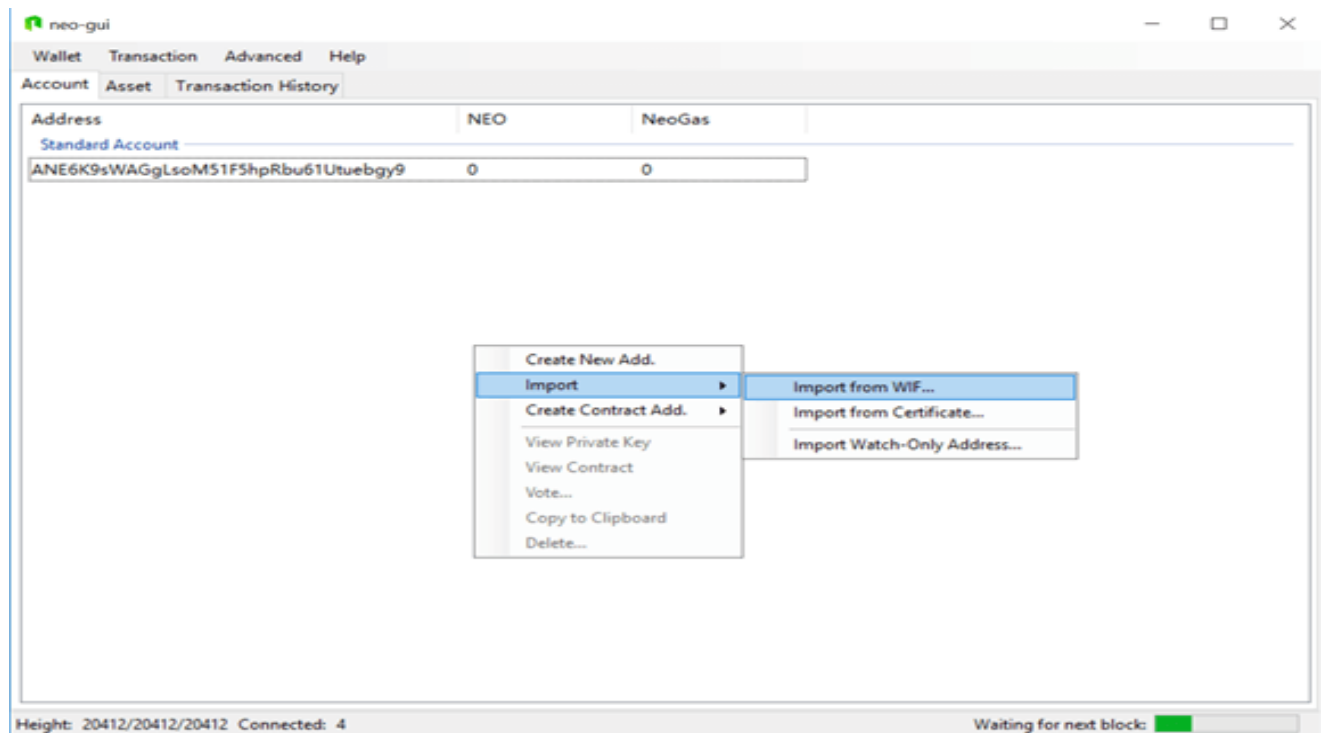
Run the neo-gui.exe installation package to verify the NEO GUI and Docker container's connectivity. If you see that there are 4 linked nodes, this merely indicates that the connection has been made and the numbers reflect the consensus nodes.



Create a new wallet from NEO GUI Tool, go to wallet > New wallet database > input wallet name and password, it will generate a new wallet file for you.

By importing WIF key, you can get some initial NEO and GAS. Choose Import > Import from WIF > Add Key after clicking the dark spot

KxDgVgEKzgSBPPfuVfw67oPQBSjIdEiqTHURKSDL1R7yGaGYAeYnr



To check your NEO and GAS balance, click OK. For the execution of smart contracts, we can employ NEO and GAS.

Account	Asset	Transaction History
Address	NEO	NeoGas
Standard Account		
ANE6K9sWAGgLsoM51F5hpRbu61Utuebg9	0	0
AK2nJlpJr6o664CWJKi1QRXjqeic2zRp8y	100000000	160008

CONCLUSION:

This article explains how to build up a private NEO network and how to obtain some initial NEO and GAS coins. To test smart contracts on a local system, we may utilise them. It may be configured in a number of various ways, but using Docker is the simplest.

-Mr Sathosh.B(III CSE)

Python-based 3D Surface Plot

In data science, it is time to convert 2D plots into 3D plots. Let's try using Python to visualise a three-dimensional surface plot. This can be used to compare two continuous or numerical variables in real-time data.

Import libraries

```
import matplotlib.pyplot as plt
from matplotlib import cm
from matplotlib.ticker import LinearLocator
import numpy as np
fig, ax = plt.subplots(subplot_kw={"projection": "3d"})
```

Make data

```
X = np.arange(-5, 5, 0.25)
Y = np.arange(-5, 5, 0.25)
X, Y = np.meshgrid(X, Y)
R = np.sqrt(X**2 + Y**2)
Z = np.sin(R)
```

Plot the surface

```
surf = ax.plot_surface(X, Y, Z, cmap=cm.coolwarm,
linewidth=0, antialiased=False)
```

Customize the z axis

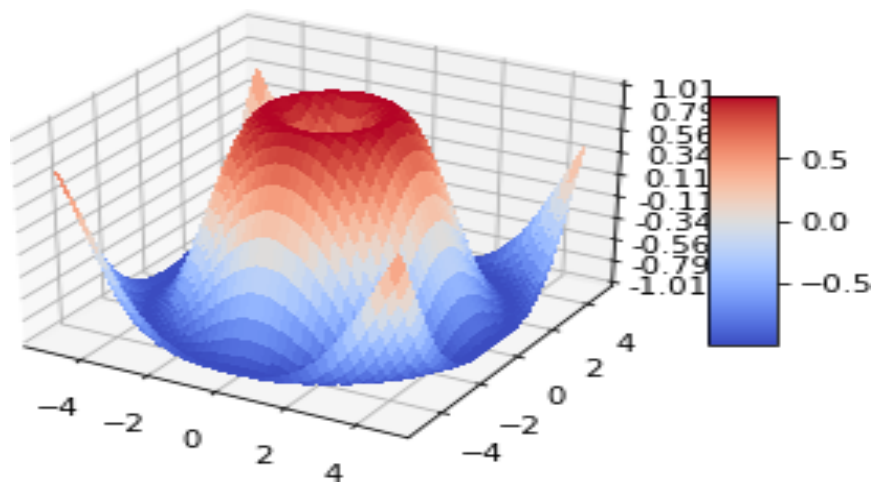
```
ax.set_zlim(-1.01, 1.01)
ax.zaxis.set_major_locator(LinearLocator(10))
```

A StrMethodFormatter is used automatically

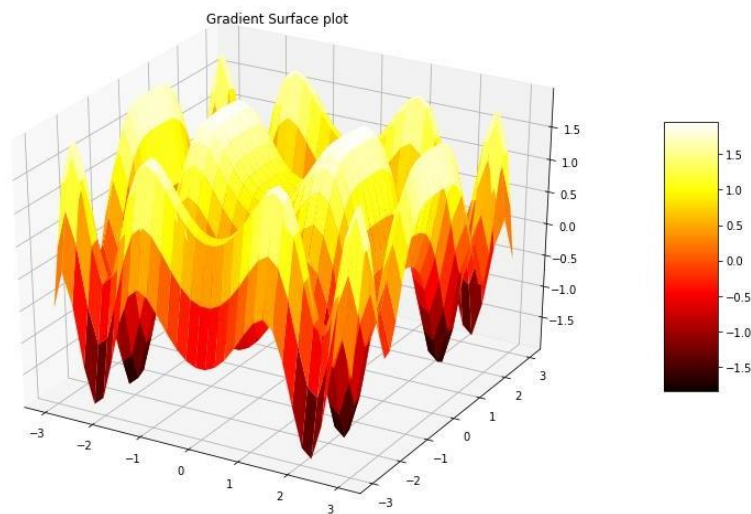
```
ax.zaxis.set_major_formatter(„{x:.02f}“)
```

Add a color bar which maps values to colors

```
fig.colorbar(surf, shrink=0.5, aspect=5)
plt.show()
```



3D Surface plotting in Python using Matplotlib



A Surface Plot is a representation of three-dimensional dataset. It describes a functional relationship between two independent variables X and Z and a designated dependent variable Y , rather than showing the individual data points. It is a companion plot of the contour plot. It is similar to the wireframe plot, but each face of the wireframe is a filled polygon. This helps to create the topology of the surface which is being visualized.

-Mr Uma Karthikeyan.C(III CSE)

Using Modin, Scale Your Pandas Workflow

Why Pandas Is Insufficient

Despite being the industry standard, pandas is typically single-threaded by nature, which makes it slow for very large datasets. Even datasets that don't fit in memory might not be compatible with it. Other options exist to address this problem (such as Dask, pySpark, vaex.io, etc.), but none of them offer a fully pandas-compatible user interface; users would need to adjust their workloads accordingly.

What services does Modin provide for the customer? The notion that "tools should work for the data scientist, not vice versa" is attempted to be upheld. It provides a straightforward, drop-in alternative for pandas; all you have to do is replace "import pandas as pd" with "import modin.pandas as pd" to improve scalability for a given dataset.

Why Modin?

The development cycle for data insights can be sped up by doing away with the requirement to "rewrite pandas process to X framework." (Figure a)

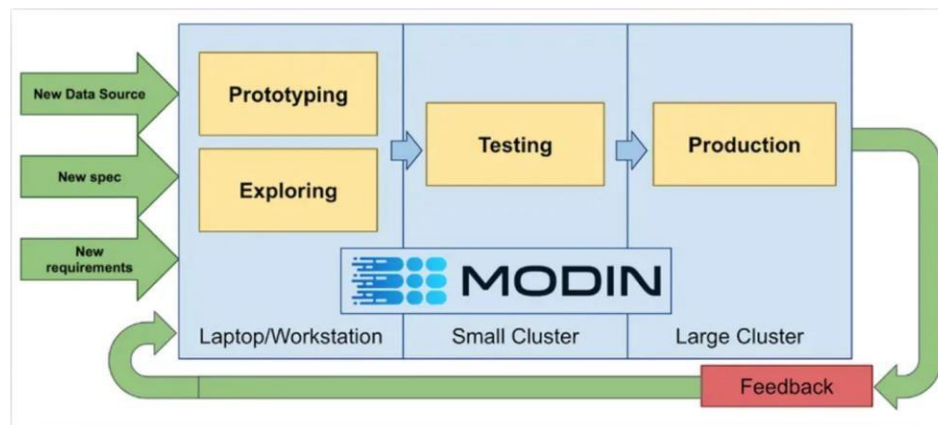


Figure a: Utilizing Modin in a cycle of continual growth

Grid-splitting the dataframe, which enables some operations to perform in parallel distributed ways, whether they be cell-wise, column-wise, or row-wise, enables Modin to make better use of the hardware (Figure b). Experimental connection with the

OmniSci engine can be used for some operations to increase the effectiveness of using many cores.

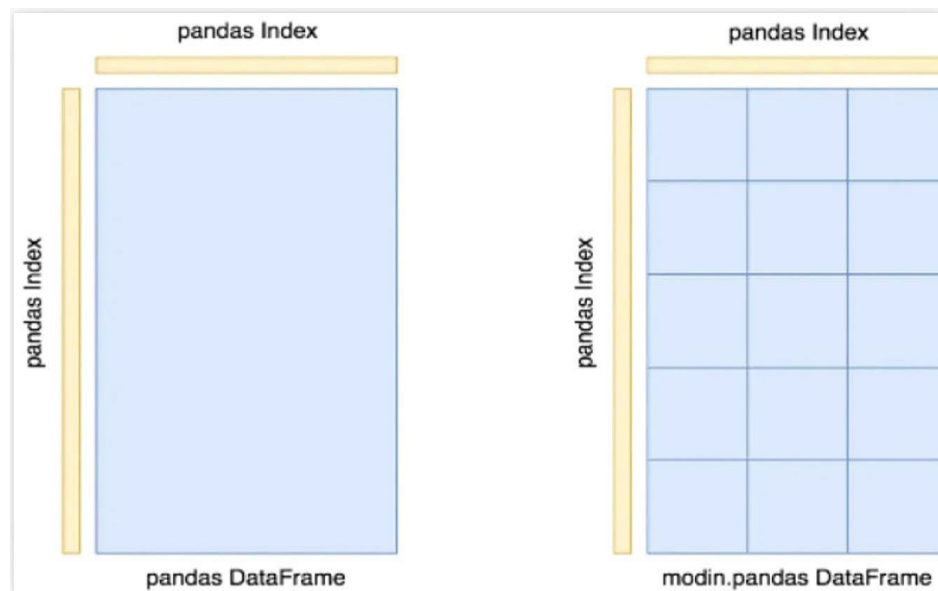


Figure b: Modin Data Frames and Pandas Comparison

An experimental, significantly faster OmniSci backend for Modin is also available whether installing it through AI Kit or through the Anaconda defaults (or conda-forge) channel. Simple code changes are all that are necessary to activate:

```
import modin.config as cfg
cfg.Engine.put('native')
cfg.Backend.put('omnisci')
import modin.experimental.pandas as pd
```

Let's look at the benchmarks now

Let's utilise a larger, more end-to-end workload running on an Intel Xeon® 8368 Platinum-based server (see complete hardware info below) using OmniSci through Modin to show the scalability of this method (Figures c-e)

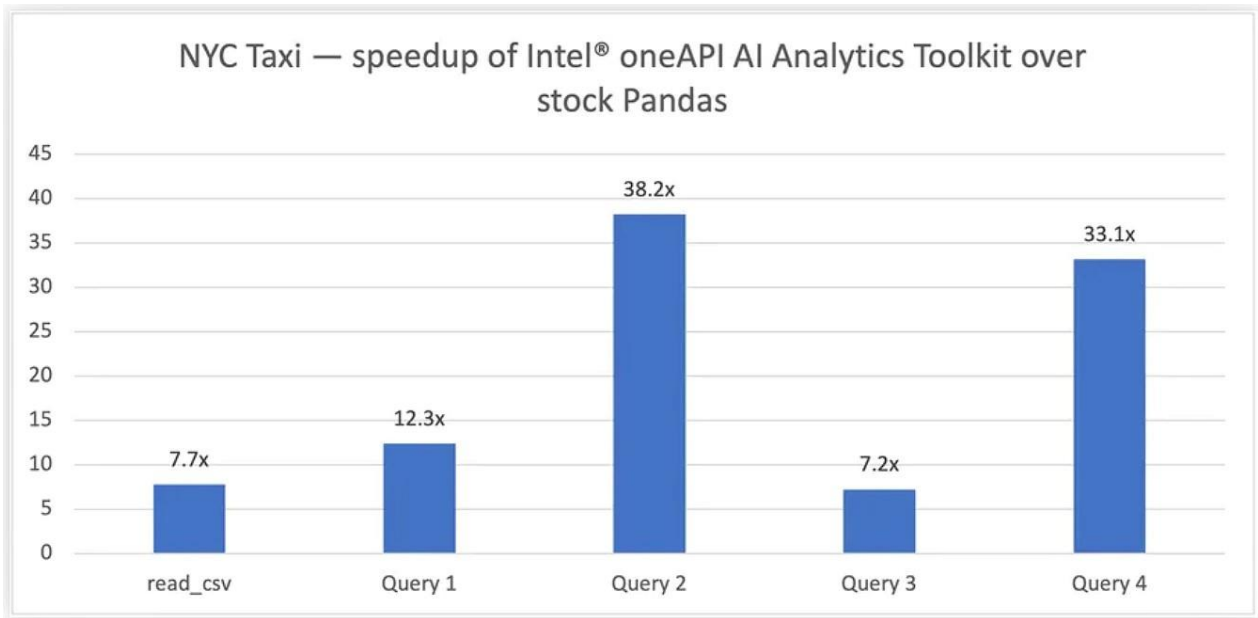


Figure c: 200M entries and a 79.2 GB input dataset are used when running the NYC Taxi task.

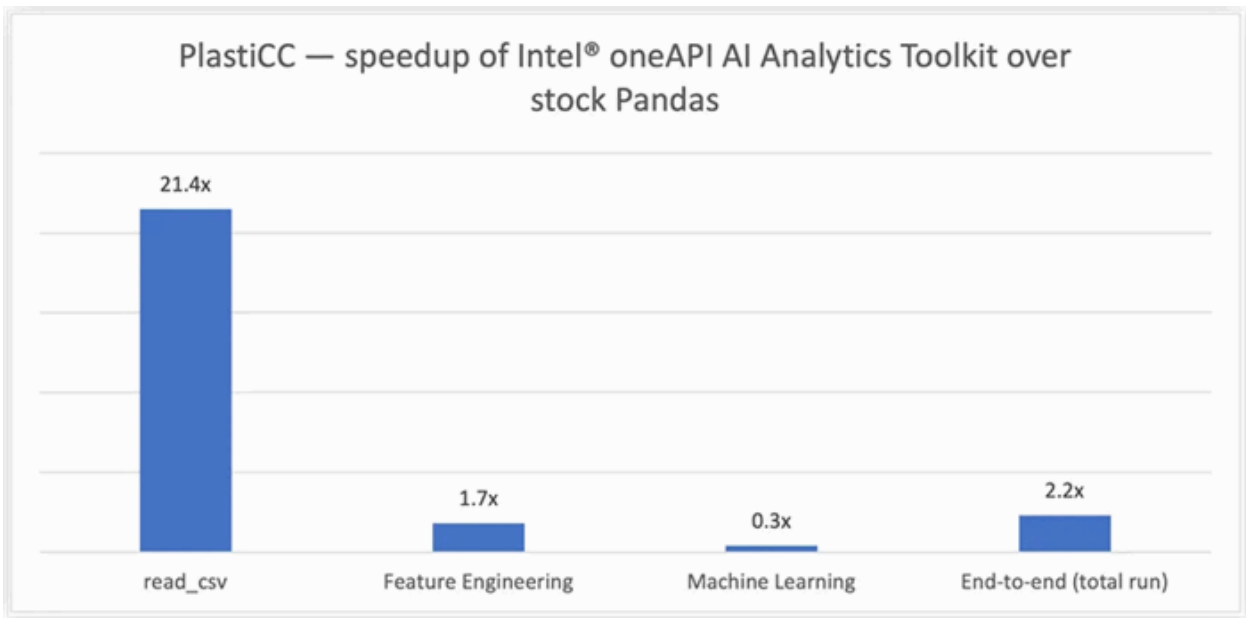


Figure d: Running the Census workload: 2.1 GB input dataset, 21M records

There's Still More

If your data requires more than one node, Modin enables distributed operation on a Ray cluster or a Dask cluster. Additionally, if you use the experimental XGBoost integration, the Ray-based cluster will be immediately used for you without any additional setup!

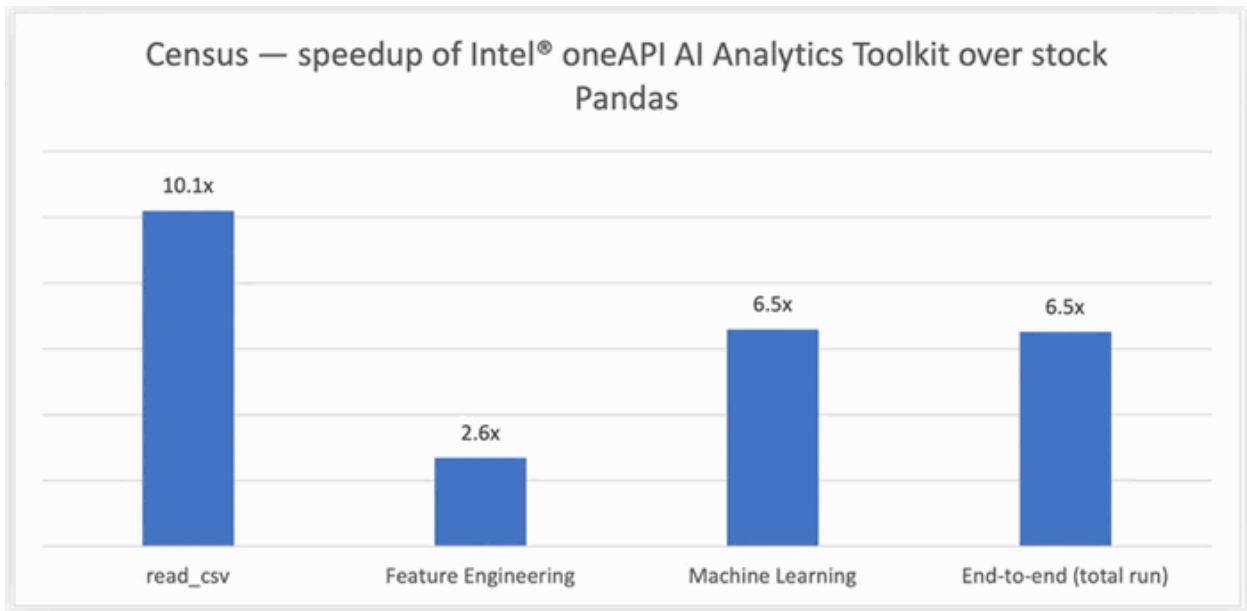


Figure e: PlastiCC workload running: 460 million records, 20 GB input dataset

How to Speed Up Pandas

4x ?



MODIN

Pandas

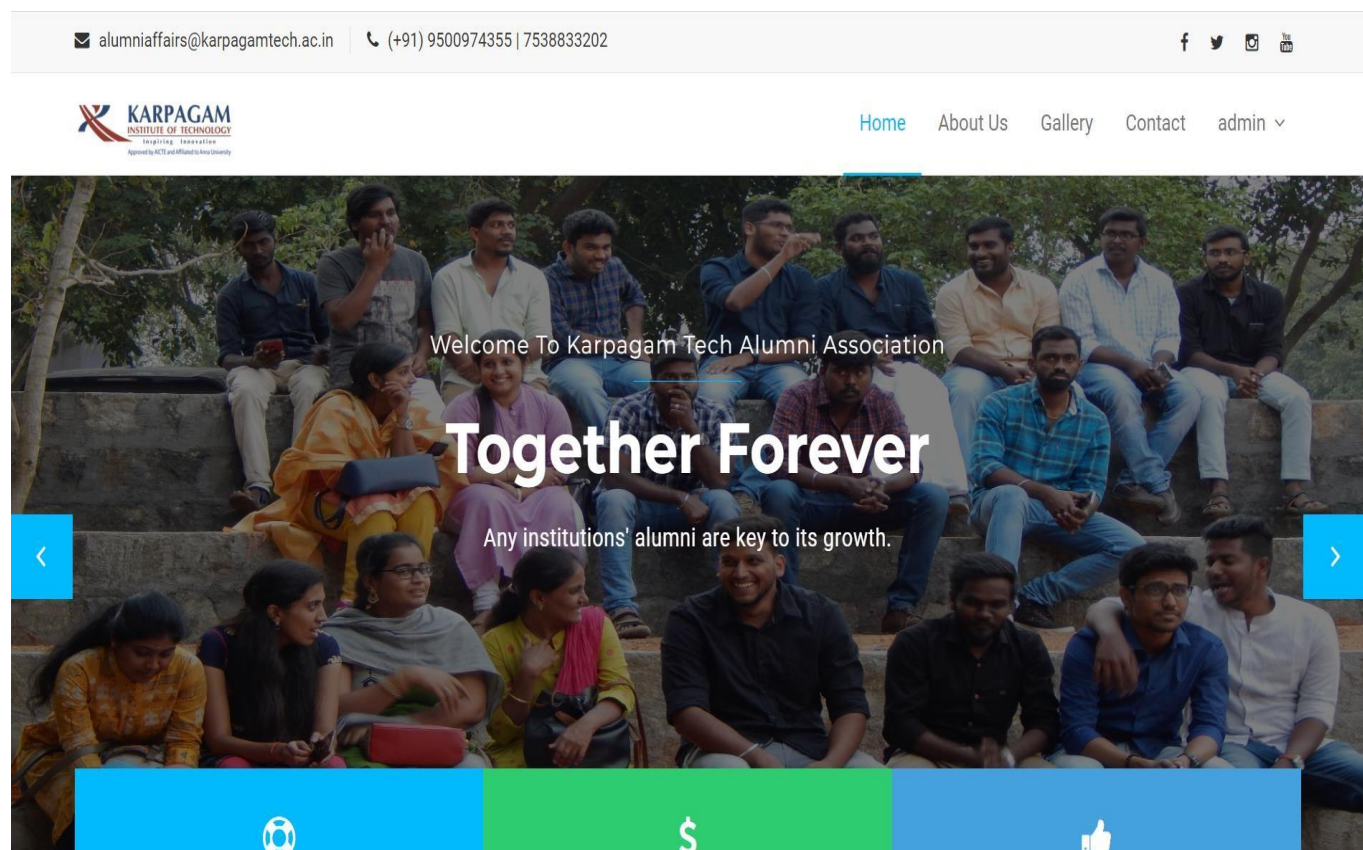


-Ms Shalini.R(II CSE)

PROJECT GLIMPSES

ALUMNI PORTAL

Alumni Portal is developed to enhance alumni activities of the institution. It allows current students to post the technical helps needed. Alumni could interact with students and guide them in respective technologies. Alumni help desk is integrated with the portal which enables alumni to post job requirements and other needs. This portal is hosted in the domain <http://alumni.karpagamtech.ac.in>



-Ms Soundharya.P(II CSE)

DATA WAREHOUSE INSIGHTS TOOL

It is an analytics tool to get insights on the transactions and ratings of various organizations . The tool is developed by Python, Django, and Jquery. This tool helps to get multiple dimensions of the transactions insights.

The screenshot displays the Abacus Insights Partners Data Warehouse Insights Tool interface. The top navigation bar includes the logo, user information (User | Base Data | Report | thirulok@irepute.in), and a profile icon. The left sidebar features a 'Filter menu' with a 'Product' dropdown and a list of products with checkboxes: All, Alibaba Cloud Analytics, Alibaba Cloud Blockchain, Alibaba Cloud Container Services, Alibaba Cloud Storage, Anthos, ApsaraDB, Arc, Athena, and Aurora. The main content area contains filters for 'Date Range' (dd-mm-yyyy), 'Sentiment Range', 'X - Axis Filter' (Product), and 'Y - Axis Filter' (Select Y Axis). Below these are 'Clear' and 'Search' buttons. An 'Export' button is located on the left, and a 'Search:' input field is on the right. The data table below has columns for 'Product' and 'Volume (No of mentions)' for various cloud providers: AWS, Azure, Google Cloud, Alibaba Cloud, IBM, Oracle, Blank, Total, and AWS. The first row of data shows 'Alibaba Cloud' with a volume of 1 for 'Alibaba Cloud' and 1 for 'Total'.

Product	AWS	Azure	Google Cloud	Alibaba Cloud	IBM	Oracle	Blank	Total	AWS
Alibaba Cloud	0	0	0	1	0	0	0	1	0

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-Mr Jaya suriya.V(III CSE)

Solution for FREQUENCY OF LETTER'S

PROGRAM:

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
import java.util.Scanner;
public class Solution
{
    public static void main(String[] args)
    {
        Scanner sc= new Scanner(System.in);
        String str = sc.nextLine();
        int[] freq = new int[str.length()];
        char str1[] = str.toCharArray();
        for(int i = 0; i <str.length(); i++)
        {
            freq[i] = 1;
            for(int j = i+1; j <str.length(); j++)
            {
                if(str1[i] == str1[j])
                {
                    freq[i]++;
                    str1[j] = '0';
                }
            }
            for(int i = 0; i <freq.length; i++)
            {
                if(str1[i] != ' ' && str1[i] != '0')
                {
                    if(freq[i]==1)
                    {
                        System.out.print(str1[i]+"");
                    }
                    else
                    {
                        System.out.print(str1[i] + ""+ freq[i]);
                    }
                }
            }
        }
    }
}
```

-Mr Jayaram.c(III CSE)

Solution for TROOP SELECTION

PROGRAM:

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
public class Solution {
    public static void main(String[] args) {
        /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
        Scanner sc = new Scanner(System.in);
        int s = sc.nextInt();
        int n = sc.nextInt();
        sc.nextLine();
        String str = "";
        int i = 0;
        int j = 0;
        int c = 0;
        while(i < n)
        {
            j = 0;
            str = Integer.toBinaryString(sc.nextInt());
            while(j < str.length())
            {
                if(str.charAt(j) == '1')
                {
                    c++;
                }
                j++;
            }
            i++;
        }
        if(s > c)
        {
            System.out.print("week");
        }
        if(s == c)
        {
            System.out.print("enough");
        }
        if(s < c)
        {
            System.out.print("strong");
        }
    }
}
```

---Mr.Deepan.R (III CSE)

Solution for Reverse the String without affecting special characters

PROGRAM:

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
public class Solution {
    Scanner input = new Scanner(System.in);
    public static void reverse(char str[])
    {
        int r=str.length-1, l = 0;
        while(l<r)
        {
            if(!Character.isAlphabetic(str[l]))
            {
                l++;
            }

            else if(!Character.isAlphabetic(str[r]))
            {
                r--;
            }
            else
            {
                char tmp = str[l];
                str[l] = str[r];
                str[r] = tmp;
                l++;
                r--;
            }
        }
    }
    public static void main(String args[])
    {
        Scanner input = new Scanner(System.in);
        String str = input.nextLine();
        char[] charArray = str.toCharArray();
        reverse(charArray);
        String revstr = new String(charArray);
        System.out.println(revstr);
    } }
```

---Mr.Preevan.P (III CSE)

Solution for Frequency of Vowels

PROGRAM:

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
public class Solution {
    public static void main(String[] args)
    {
        Scanner input=new Scanner(System.in);
        String str=input.nextLine();
        ArrayList<Character> list=new ArrayList<Character>();
        int n=str.length();
        int i, j;
        for(i=0; i<n; i++)
        {
            if(str.charAt(i)=='a' || str.charAt(i)=='e' || str.charAt(i)=='i' || str.charAt(i)=='o' || str.charAt(i)=='u')
            {
                list.add(str.charAt(i));
            }
        }
        int s=list.size();
        char a[]=new char[s];
        for(i=0; i<s; i++)
        {
            a[i]=list.get(i);
        }
        Arrays.sort(a);
        int fr[]=new int[s];
        for(i=0; i<a.length; i++)
        {
            fr[i]=1;
            for(j=i+1; j<a.length; j++)
            {
                if(a[i]==a[j])
                {
                    fr[i]++;
                    a[j]='0';
                }
            }
        }
        for(i=0; i<fr.length; i++)
        {
            if(a[i]!='0')
            {
                System.out.
```

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Address: L&T Bypass Road,
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