VERSION IT

VERSION IT

Since 2001

24th ANNIVERSARY

DATA SCIENCE

Best Training And Placement Institute

Amrutha Arcade, SAP St, Behind Maitrivanam,
1st Left, Srinivasa Nagar, Ameerpet,
Hyderabad, Telangana 500082

+91 9848015399
+91 9391237284

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About Version IT

Version IT is not a mere software training institute, a team of IT professionals developed it as the best knowledge centre for hundreds of career-building conscious young people. Our training academy is the best training institute in Hyderabad offering various software courses with aptly placement orientation. We proudly announce that we achieved 100% placements in every batch we have taken up in the past two decades. Version IT Academy's strength is our academic excellence with which we have been placed in the top position among the software training institute in Hyderabad.

Corporate Training

Class Room Training

Online Training

Why Choose Us!

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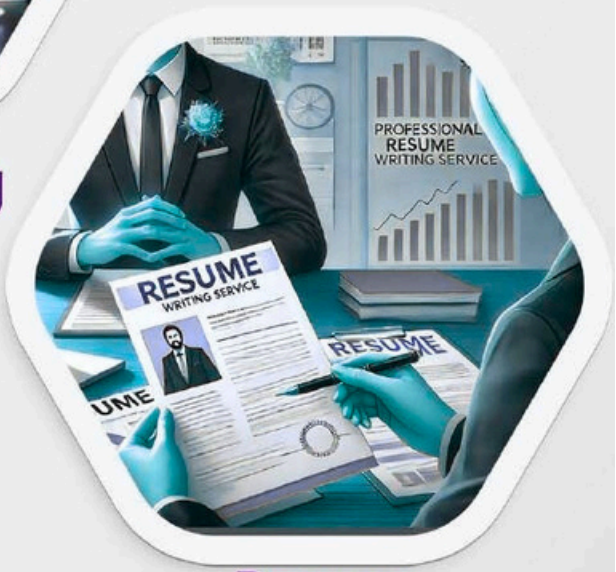
Training By Certified Instuctors

Mock Interviews

Weekly Assignments

Project Training

Interview Cracking tips



Resume Preparation

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DATA Science - Course Curriculum

Python

- Introduction to Data Science
  - Introduction to Data Science
  - Discussion on Course Curriculum
  - Introduction to Programming
- Python Basics
  - Introduction to Python: Installation and Running (Jupyter Notebook, .py file from terminal, Google Colab)
  - Data types and type conversion
  - Variables
  - Operators
  - Flow Control : If, Elif, Else
    - Loops
  - Python Identifier
  - Building Funtions (print, type, id, sys, len)
- Python - Data Types & Utilities
  - List, List of Lists and List Comprehension
    - List creation
  - Create a list with variable
  - List mutable concept
    - len() || append() || pop()
  - insert() || remove() || sort() || reverse()
  - Forward indexing
  - Backward Indexing
  - Forward slicing
  - Backward slicing
    - Step slicing
- Set
  - SET creation with variable
  - len() || add() || remove() || pop()
    - union() | intersection() || difference()
- Tuple
  - TUPLE Creation
  - Create Tuple with variable
  - Tuple Immutable concept
    - len() || count() || index()

- Forward indexing
- Backward Indexing

- Dictionary and Dictionary comprehension
  - create a dictionary using variable
  - keys:values concept
  - len() || keys() || values() || items()
  - get() || pop() || update()
  - comparision of datastructure
  - Introduce to range()
  - pass range() in the list
  - range() arguments
  - For loop introduction using range()
- Functions
  - Inbuilt vs User Defined
  - User Defined Function
  - Function Argument
  - Types of Function Arguments
  - Actual Argument
  - Global variable vs Local variable
  - Anonymous Function | LAMBDA
- Packages
- Map Reduce
- OOPs
- Class & Object
  - what is mean by inbuild class
  - how to creat user class
  - crate a class & object
  - __init__ method
  - python constructor
  - constructor, self & comparing objects
  - instane variable & class variable
- Methods
  - what is instance method
  - what is class method
  - what is static method
  - Accessor & Mutator
- Python DECORATOR
  - how to use decorator
  - inner class, outerclass

- Inheritence
- Polymorphism
  - duck typing
  - operator overloading
  - method overloading
  - method overridding
  - Magic method
  - Abstract class & Abstract method
  - Iterator
  - Generators in python
- Python - Production Level
  - Error / Exception Handling
  - File Handling
  - Docstrings
  - Modularization
- Pickling & Unpickling
- Pandas
  - Introduction, Fundamentals, Importing Pandas, Aliasing, DataFrame
  - Series – Intro, Creating Series Object, Empty Series Object, Create series from List/Array/Column from DataFrame, Index in Series, Accessing values in Series
  - NaN Value
  - Series – Attributes (Values, index, dtypes, size)
  - Series – Methods – head(), tail(), sum(), count(), nunique() etc.,
  - Date Frame
  - Loading Different Files
  - Data Frame Attributes
  - Data Frame Methods
  - Rename Column & Index
  - Inplace Parameter
  - Handling missing or NaN values
  - iLoc and Loc
  - Data Frame – Filtering
  - Data Frame – Sorting
  - Data Frame – GroupBy
  - Merging or Joining
  - Data Frame – Concat
  - DataFrame - Adding, dropping columns & rows
  - DataFrame - Date and time

- DataFrame - Concatenate Multiple csv files

- Numpy
  - Introduction, Installation, pip command, import numpy package, Module Not Found Error, Famous Alias name to Numpy
  - Fundamentals – Create Numpy Array, Array Manipulation, Mathematical Operations, Indexing & Slicing
  - Numpy Attributes
  - Important Methods- min(),max(), sum(), reshape(), count_nonzero(), sort(), flatten() etc.,
    - adding value to array of values
  - Diagonal of a Matrix
  - Trace of a Matrix
  - Parsing, Adding and Subtracting Matrices
  - "Statistical Functions: numpy.mean()
  - numpy.median()
  - numpy.std()
  - numpy.sum()
  - numpy.min()"
  - Filter in Numpy
- Matplotlib
  - Introduction
  - Pyplot
  - Figure Class
  - Axes Class
  - Setting Limits and Tick Labels
  - Multiple Plots
    - Legend
  - Different Types of Plots
  - Line Graph
  - Bar Chart
  - Histograms
  - Scatter Plot
  - Pie Chart
  - 3D Plots
  - Working with Images
  - Customizing Plots
- Seaborn
  - catplot() function
  - stripplot() function

- boxplot() function
- violinplot() function
- pointplot() function
- barplot() function

◯ Visualizing statistical relationship with Seaborn relplot() function

- scatterplot() function
- regplot() function

◯ lmplot() function

- Seaborn Facetgrid() function

◯ Multi-plot grids
◯ Statistical Plots
◯ Color Palettes

- Faceting

◯ Regression Plots
◯ Distribution Plots
◯ Categorical Plots
◯ Pair Plots

- Scipy
  - ◯ Signal and Image Processing (scipy.signal, scipy.ndimage):
  - ◯ Linear Algebra (scipy.linalg)

  Integration (scipy.integrate)

  Statistics (scipy.stats)
  - ◯ Spatial Distance and Clustering (scipy.spatial)
- Statsmodels
  - ◯ Linear Regression (statsmodels.regression)
  - ◯ Time Series Analysis (statsmodels.tsa)
  - ◯ Statistical Tests (statsmodels.stats)
  - ◯ Anova (statsmodels.stats.anova)
  - ◯ Datasets (statsmodels.datasets)

Mathematics

- Set Theory
  - ◯ Data Representation & Database Operations
- Combinatorics

- Feature Selection

◯ Permutations and Combinations for Sampling
◯ Hyper parameter Tuning
◯ Experiment Design
◯ Data Partitioning and Cross-Validation

- Probability
  - Basics
  - Theoretical Probability
  - Empirical Probability
  - Addition Rule
  - Multiplication Rule
  - Conditional Probability
  - Total Probability
  - Probability Decision Tree
  - Bayes Theorem
  - Sensitivity & Specificity in Probability
  - • Bernouli Naïve Bayes, Gausian Naïve Bayes, Multinomial Naïve Bayes
- Distributions
  - Binomial, Poisson, Normal Distribution, Standard Normal Distribution
  - Gaussian Distribution, Uniform Distribution
    - Z Score
  - Skewness
  - Kurtosis
  - Geometric Distribution
  - Hypergeometric Distribution
  - Markov Chain
- Linear Algebra
    - Linear Equations
  - Matrices(Matrix Algebra: Vector Matrix Vector matrix multiplication Matrix matrix multiplication)
  - Determinant
  - Eigen Value and Eigenvector
- Euclidean Distance & Manhattan Distance
- Calculus
  - Differentiation
  - Partial Differentiation
  - Max & Min
- Indices & Logarithms

Statistics

- Introduction
  - Population & Sample
  - Reference & Sampling technique

- Types of Data
  - Qualitative or Categorical – Nominal & Ordinal
  - Quantitative or Numerical – Discrete & Continuous
  - Cross Sectional Data & Time Series Data
- Measures of Central Tendency
  - Mean, Mode & Median – Their frequency distribution
- Descriptive statistic Measures of symmetry
  - skewness (positive skew, negative skew, zero skew)
  - kurtosis (Leptokurtic, Mesokurtic, Platykurtic)
- Measurement of Spread
  - Range, Variance, Standard Deviation
- Measures of variability
  - Interquartile Range (IQR)
  - Mean Absolute Deviation (MAD)
  - Coefficient of variation
  - Covariance
- Levels of Data Measurement
  - Nominal, Ordinal, Interval, Ratio
- Variable
  - Types of Variables.
  - Categorical Variables - Nominal variable & ordinal variables
  - Numerical Variables: discrete & continuous
  - Dependent Variable
  - Independent Variable
  - Control Moderating & Mediating
- Frequency Distribution Table
  - Nominal, Ordinal, Interval, Ratio
- Types of Variables
  - Categorical Variables - Nominal variable & ordinal variables
  - Numerical Variables: discrete & continuous
  - Dependent Variable
  - Independent Variable
  - Control Moderating & Mediating
- Frequency Distribution Table
  - Relative Frequency, Cumulative Frequency
  - Histogram
  - Scatter Plots
  - Range
  - Calculate Class Width

    - Create Intervals
    - Count Frequencies
    - Construct the Table
- Correlation, Regression & Collinearity
    - Pearson & Spearman Correlation Methods
    - Regression Error Metrics
- Others
    - Percentiles, Quartiles, Interquartile Range
    - Different types of Plots for Continuous, Categorical variable
    - Box Plot, Outliers
    - Confidence Intervals
    - Central Limit Theorem
    - Degree of freedom
- Bias and Variance in ML
- Entropy in ML
- Information Gain
- Surprise in ML
- Loss Function & Cost Function
    - Mean Squared Error, Mean Absolute Error – Loss Function
    - Huber Loss Function
    - Cross Entropy Loss Function
- Inferential Statistics
    - Hypothesis Testing: One tail, two tail and p-value
    - Formulation of Null & Alternative Hypothesis
    - Type-I error & Type-II error
    - Statistical Tests
    - Sample Test
    - ANOVA Test
    - Chi-square Test
    - Z-Test & T-Test

SQL

- Introduction
    - DBMS vs RDBMS
    - Intro to SQL
    - SQL vs NoSQL
    - MySQL Installation
- Keys
    - Primary Key

    - Foreign Key
- Constraints
    - Unique
    - Not NULL
    - Check
    - Default
    - Auto Increment
- CRUD Operations
    - Create
    - Retrieve
    - Update
    - Delete
- SQL Languages
    - Data Definition Language (DDL)
    - Data Query Language
    - Data Manipulation Language (DML)
    - Data Control Language
    - Transaction Control Language
- SQL Commands
    - Create
        - Insert
    - Alter, Modify, Rename, Update
    - Delete, Truncate, Drop
    - Grant, Revoke
    - Commit, Rollback
        - Select
- SQL Clause
    - Where
    - Distinct
    - OrderBy
    - GroupBy
    - Having
    - Limit
- Operators
    - Comparison Operators
    - Logical Operators
    - Membership Operators
    - Identity Operators
- Wild Cards

- Aggregate Functions
- SQL Joins
    - Inner Join & Outer Join
    - Left Join & Right Join
    - Self & Cross Join
    - Natural Join

EDA & ML

- EDA
    - Univariate Analysis
    - Bivariate Analysis
    - Multivariate Analysis
- Data Visualisation
    - Various Plots on different data types
    - Plots for Continuous Variables
    - Plots for Discrete Variables
    - Plots for Time Series Variables
- ML Introduction
    - What is Machine Learning?
    - Types of Machine Learning Methods
    - Classification problem in general
    - Validation Techniques: CV,OOB
    - Different types of metrics for Classification
    - Curse of dimensionality
    - Feature Transformations
    - Feature Selection
    - Imbalanced Dataset and its effect on Classification
    - Bias Variance Tradeoff
- Important Element of Machine Learning
- Multiclass Classification
    - One-vs-All
    - Overfitting and Underfitting
    - Error Measures
    - PCA learning
    - Statistical learning approaches
    - Introduce to SKLEARN FRAMEWORK
- Data Processing
    - Creating training and test sets, Data scaling and Normalisation

- Feature Engineering – Adding new features as per requirement, Modifying the data
- Data Cleaning – Treating the missing values, Outliers
- Data Wrangling – Encoding, Feature Transformations, Feature Scaling
- Feature Selection – Filter Methods, Wrapper Methods, Embedded Methods
- Dimension Reduction – Principal Component Analysis (Sparse PCA & Kernel PCA), Singular Value Decomposition
- Non Negative Matrix Factorization

- Regression
  - Introduction to Regression
  - Mathematics involved in Regression
  - Regression Algorithms
  - Simple Linear Regression
  - Multiple Linear Regression
  - Polynomial Regression
  - Lasso Regression
  - Ridge Regression
  - Elastic Net Regression
- Evaluation Metrics for Regression
  - Mean Absolute Error (MAE)
  - Mean Squared Error (MSE)
  - Root Mean Squared Error (RMSE)
  - R^2
  - Adjusted R^2
- Classification
  - Introduction
  - K-Nearest Neighbors
  - Logistic Regression
  - Support Vector Machines (Linear SVM)
  - Linear Classification
  - Kernel-based classification
  - Non-linear examples
  - 2 features forms straight line & 3 features forms plane
  - Hyperplane and Support vectors
  - Controlled support vector machines
  - Support vector Regression
  - Kernel SVM (Non-Linear SVM)
  - Naives Bayes

- Decision Trees
- Random Forest / Bagging
- Ada Boost
- Gradient Boost
- XG Boost
- Evaluation Metrics for Classification

- Clustering
- Introduction
- K-Means Clustering
  - Finding the optimal number of clusters
  - Optimizing the inertia
  - Cluster instability
  - Elbow method
- Hierarchical Clustering
- Agglomerative clustering
- DBSCAN Clustering
- Association Rules
  - Market Basket Analysis
  - Apriori Algorithm
- Recommendation Engines
  - Collaborative Filtering
  - User based collaborative filtering
  - Item based collaborative filtering
  - Recommendation Engines
- Time Series & Forecasting
  - What is Time series data
  - Different components of time series data
  - Stationary of time series data
  - ACF, PACF
  - Time Series Models
  - AR
  - ARMA
  - ARIMA
  - SARIMAX
- Model Selection & Evaluation
- Over Fitting & Under Fitting
  - Bianca-Variance Tradeoff
  - Hyper Parameter Tuning
  - Joblib And Pickling

- Others
  - Dummy Variable, One Hot Encoding
  - gridsearchcv vs randomizedsearchcv
- ML Pipeline
- ML Model Deployment in Flask

Power BI

- Introduction
  - Power BI for Data scientist
  - Types of reports
  - Data source types
  - Installation
- Basic Report Design
  - Data sources and Visual types
  - Canvas and fields
  - Table and Tree map
  - Format button and Data Labels
  - Legend,Category and Grid
  - CSV and PDF Exports
- Visual Sync, Grouping
  - Slicer visual
  - Orientation, selection process
  - Slicer: Number, Text, slicer list
  - Bin count,Binning
- Hierarchies, Filters
  - Creating Hierarchies
  - Drill Down options
  - Expand and show
  - Visual filter,Page filter,Report filter
  - Drill Thru Reports
- Power Query
  - Power Query transformation
  - Table and Column Transformations
  - Text and time transformations
  - Power query functions
  - Merge and append transformations
- DAX Functions
  - DAX Architecture,Entity Sets
  - DAX Data types,Syntax Rules

- DAX measures and calculations
- Creating measures
- Creating Columns

Deep Learning

- Deep learning at Glance
  - Introduction to Neural Network
  - Biological and Artificial Neuron
  - Introduction to perceptron
  - Perceptron and its learning rule and drawbacks
  - Multilayer Perceptron, loss function
  - Neural Network Activation function
- Training MLP: Backpropagation
- Cost Function
- Gradient Descent Backpropagation - Vanishing and Exploding Gradient Problem
- Introduce to Py-torch
- Regularization
- Optimizers
- Hyperparameters and tuning of the same
- TENSORFLOW FRAMEWORK
  - Introduction to TensorFlow
  - TensorFlow Basic Syntax
  - TensorFlow Graphs
  - Variables and Placeholders
  - TensorFlow Playground
- ANN (Artificial Neural Network)
  - ANN Architecture
  - Forward & Backward Propagation, Epoch
  - Introduction to TensorFlow, Keras
  - Vanishing Gradient Descend
  - Fine-tuning neural network hyperparameter
  - Number of hidden layers, Number of neurons per hidden layer
  - Activation function
  - INSTALLATION OF YOLO V8, KERAS, THEANO
- PY-TORCH Library
- RNN (Recurrent Neural Network)
  - Introduction to RNN
  - Backpropagation through time

    - Input and output sequences
    - RNN vs ANN
    - LSTM (Long Short-Term Memory)
    - Different types of RNN: LSTM, GRU
    - Bidirectional RNN
    - Sequential-to-sequential architecture (Encoder Decoder)
    - BERT Transformers
    - Text generation and classification using Deep Learning
    - Generative-AI (Chat-GPT)
- Basics of Image Processing
    - Histogram of images
    - Basic filters applied on the images
- Convolutional Neural Networks (CNN)
    - ImageNet Dataset
    - Project: Image Classification
    - Different types of CNN architectures
    - Recurrent Neural Network (RNN)
    - Using pre-trained model: Transfer Learning

Natural Language Processing (NLP)

- Natural Language Processing (NLP)
    - Text Cleaning
    - Texts, Tokens
    - Basic text classification based on Bag of Words
- Document Vectorization
    - Bag of Words
    - TF-IDF Vectorizer
    - n-gram: Unigran, Bigram
    - Word vectorizer basics, One Hot Encoding
    - Countvectorizer
    - Word cloud and gensim
    - Word2Vec and Glove
    - Text classification using Word2Vec and Glove
    - Parts of Speech Tagging (PoS Tagging or POST)
    - Topic Modelling using LDA
    - Sentiment Analysis
- Twitter Sentiment Analysis Using Textblob
    - TextBlob
        - Installing textblob library

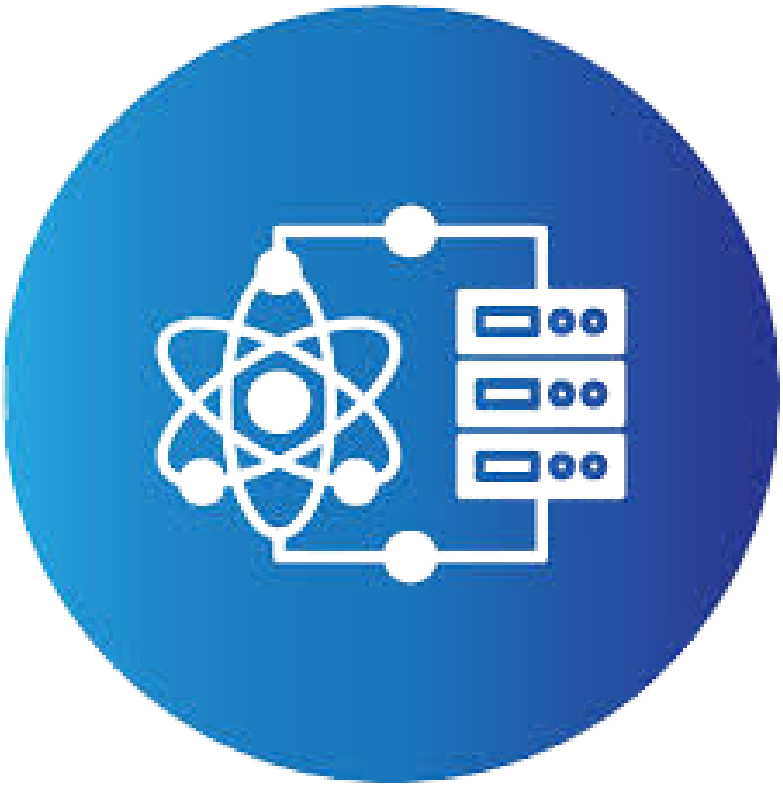
- Simple TextBlob Sentiment Analysis Example
- Using NLTK's Twitter Corpus

- Spacy Library
  - Introduction, What is a Token, Tokenization
  - Stop words in spacy library
  - Stemming
  - Lemmatization
  - Lemmatization through NLTK
  - Lemmatization using spacy
  - Word Frequency Analysis
  - Counter
  - Part of Speech, Part of Speech Tagging
  - Pos by using spacy and nltk
  - Dependency Parsing
  - Named Entity Recognition(NER)
  - NER with NLTK
  - NER with spacy

Computer Vision

- Human vision vs Computer vision
  - CNN Architecture
  - Convolution – Max Pooling – Flatten Layer – Fully Connected Layer
  - CNN Architecture
    - Striding and padding
  - Max pooling
  - Data Augmentation
  - Introduction to OpenCV & YoloV3 Algorithm
- Image Processing with OpenCV
  - Image basics with OpenCV
  - Opening Image Files with OpenCV
  - Drawing on Images, Image files with OpenCV
  - Face Detection with OpenCV
- Video Processing with OpenCV
  - Introduction to Video Basics, Object Detection
  - Object Detection with OpenCV
- Reinforcement Learning
  - Introduction to Reinforcement Learning
  - Architecture of Reinforcement Learning
  - Reinforcement Learning with Open AI

- Policy Gradient Theory
- Open AI
  - Introduction to Open AI
  - Generative AI
  - Chat Gpt (3.5)
  - LLM (Large Language Model)
  - Classification Tasks with Generative AI
  - Content Generation and Summarization with Generative AI
  - Information Retrieval and Synthesis workflow with Gen AI
- Time Series and Forecasting
  - Time Series Forecasting using Deep Learning
  - Seasonal-Trend decomposition using LOESS (STL) models.
  - Bayesian time series analysis
- MakerSuite Google
  - PaLM API
  - MUM models
- Azure ML



Our Alumni Work At

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Our Other Courses

Development Technologies

- Java Full stack
- Python Full stack
- .Net Full stack
- MERN
- MEAN
- React

Cloud Technologies

- aws
- Azure
- GCP
- Dev Ops
- Salesforce
- servicenow

Triending Technologies

- Data Science
- Data Analytics
- Cyber Security
- Azure Data Engineer
- Aws Data Engineer
- GCP Data Engineer

Our Infrastructure

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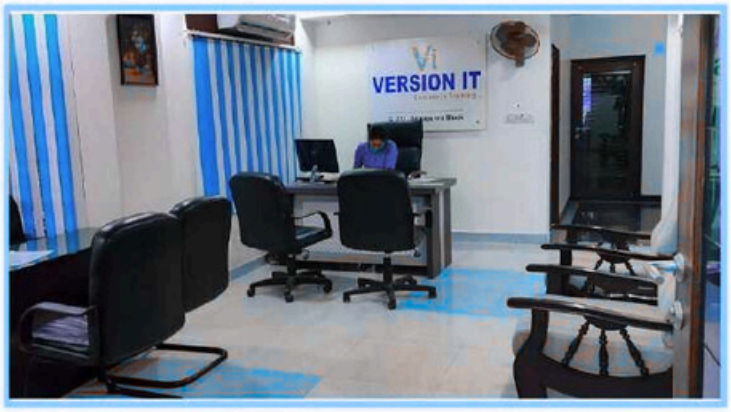

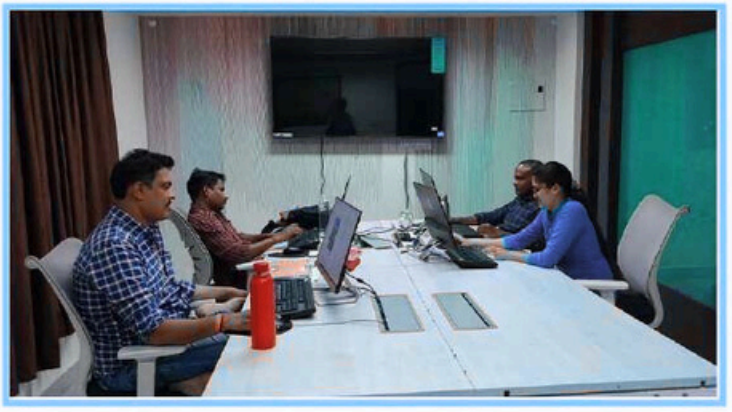

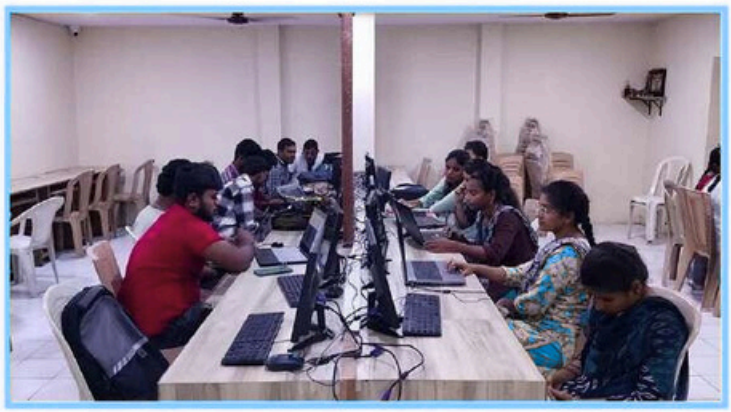

Our Branches

Address

Amrutha Arcade, SAP St, Behind Maitrivanam, 1st Left, Srinivasa Nagar, Ameerpet, Hyderabad, Telangana 500082

+91 9848015399 +91 9391237284

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