



SRI VASAVI ENGINEERING COLLEGE(Atonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

APPROVED BY AICTE, PERMANENTLY AFFILIATED TO JNTU KAKINADA



SCUD

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ARSENAL



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(20A81A0632)



CONTENTS

01

TECHNICAL
ARTICLES

02

DEPARTMENT
PROGRESS

03

NON-TECHNICAL
ARTICLES

04

STUDENT
CORNER

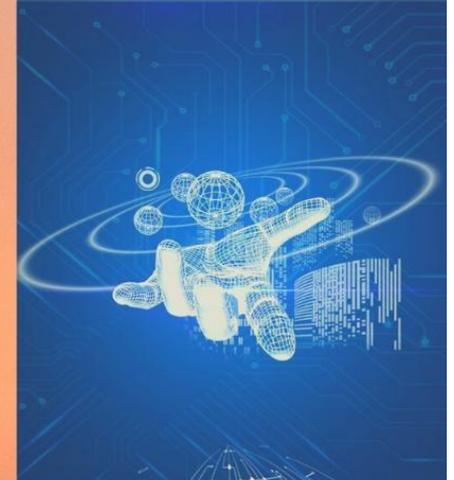
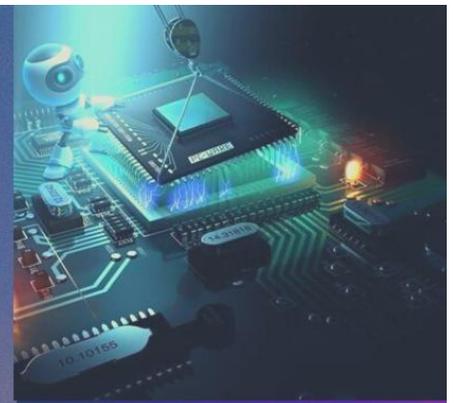
05

SNIPPETS

06

DEPARTMENT
GALLERY

THE FUTURE IS HERE





Golang

Golang programming language

Golang (Go Programming Language)

Golang is a procedural and statically typed programming language having the syntax similar to C programming language. Sometimes it is termed as Go Programming Language. It provides a rich standard library, garbage collection, and dynamic-typing capability. It was developed in 2007 by Robert Griesemer, Rob Pike, and Ken Thompson at Google but launched in 2009 as an open-source

programming language and mainly used in Google's production systems. Golang is one of the most trending programming languages among developers.

About Author's

Golang programming language was Written By Miranda Limonczenko Go Programming Language also known as "Golang", and "Google Go" is designed and supported in 2007 by Robert Griesemer, Rob Pike, and Ken Thompson. It is an open-source programming language that makes it easy to build simple, reliable, and efficient software.

Go is a general-purpose language designed with systems programming in mind. It was initially developed at Google in the year 2007 by Robert Griesemer, Rob Pike, and Ken Thompson. It is strongly and statically typed, provides inbuilt support for garbage collection, and supports concurrent programming.

Programs are constructed using packages, for efficient management of dependencies. Go programming implementations use a traditional compile and link model to generate executable binaries. The Go programming language

was announced in November 2009 and is used in some of the Google's production systems.

Features of Go Programming

The most important features of Go programming are listed below –

- Support for environment adopting patterns similar to dynamic languages. For example, type inference (`x := 0` is valid declaration of a variable `x` of type `int`)
- Compilation time is fast.
- Inbuilt concurrency support: lightweight processes (via `go` routines), channels, `select` statement.
- Go programs are simple, concise, and safe.
- Support for Interfaces and Type embedding.
- Production of statically linked native binaries without external dependencies.

Features Excluded Intentionally

To keep the language simple and concise, the following features commonly available in other similar languages are omitted in Go –

- *Support for type inheritance

***Support for method or operator overloading for circular dependencies among packages**

***Support for pointer arithmetic**

***Support for assertions**

***Support for generic programming**

Go Programs

A Go program can vary in length from 3 lines to millions of lines and it should be written into one or more text files with the extension ".go". For example, hello.go.

You can use "vi", "vim" or any other text editor to write your Go program into a file.

The Go Compiler

The source code written in source file is the human readable source for your program. It needs to be compiled and turned into machine language so that your CPU can actually execute the program as per the instructions given. The Go programming language compiler compiles the source code into its final executable program.

Go distribution comes as a binary installable for FreeBSD (release 8 and above), Linux, Mac OS X (Snow Leopard and above), and Windows operating systems with 32-bit (386) and 64-bit (amd64) x86 processor architectures.

The following section explains how to install Go binary distribution on various OS.

Download Go Archive

Download the latest version of Go installable archive file from Go Downloads. The following version is used in this tutorial: go1.4.windows-amd64.msi.

It is copied it into C:\>go folder.

OS Archive name

Windows go1.4.windows-amd64.msi

Linux go1.4.linux-amd64.tar.gz

Mac go1.4.darwin-amd64-osx10.8.pkg

FreeBSD go1.4.freebsd-amd64.tar.gz

Installation on UNIX/Linux/Mac OS X, and FreeBSD

Extract the download archive into the folder /usr/local, creating a Go tree in /usr/local/go. For example –

```
tar -C /usr/local -xzf go1.4.linux-amd64.tar.gz
```

Add /usr/local/go/bin to the PATH environment variable.

OS Output

Linux export PATH = \$PATH:/usr/local/go/bin

Mac export PATH = \$PATH:/usr/local/go/bin

FreeBSD export PATH = \$PATH:/usr/local/go/bin

Installation on Windows

Use the MSI file and follow the prompts to install the Go tools. By default, the installer uses the Go distribution in c:\Go. The installer should set the c:\Go\bin directory in Window's PATH environment

variable. Restart any open command prompts for the change to take effect.

Verifying the Installation

S.B.N.D.Poojitha
(20A81A0650)

PyScript

Run Python in Your HTML



HISTORY

It originally started as a lightweight IDE designed to serve the purpose of providing a strong scripting solution for Delphi applications. Over time, it evolved into a full-featured stand-alone Python IDE. It is built in Delphi using Python4Delphi (P4D) and is extensible using Python scripts. Being built in a compiled language makes it rather lightweight compared to some of the other IDEs. Currently, it is only available for Windows.



INTRODUCTION

PyScript is a framework that allows users to create rich Python applications in the browser using HTML's interface and the power of Pyodide, WASM, and modern web technologies. The PyScript framework provides users at every experience level with access to an expressive, easy-to-learn programming language with countless applications.

CORE COMPONENTS

➤ **Python in the browser:**

Enable drop-in content, external file hosting, and application hosting without the reliance on server-side configuration

➤ **Python ecosystem:**

Run many popular packages of Python and the scientific stack (such as numpy, pandas, scikit-learn, and more)

➤ **Python with JavaScript:**

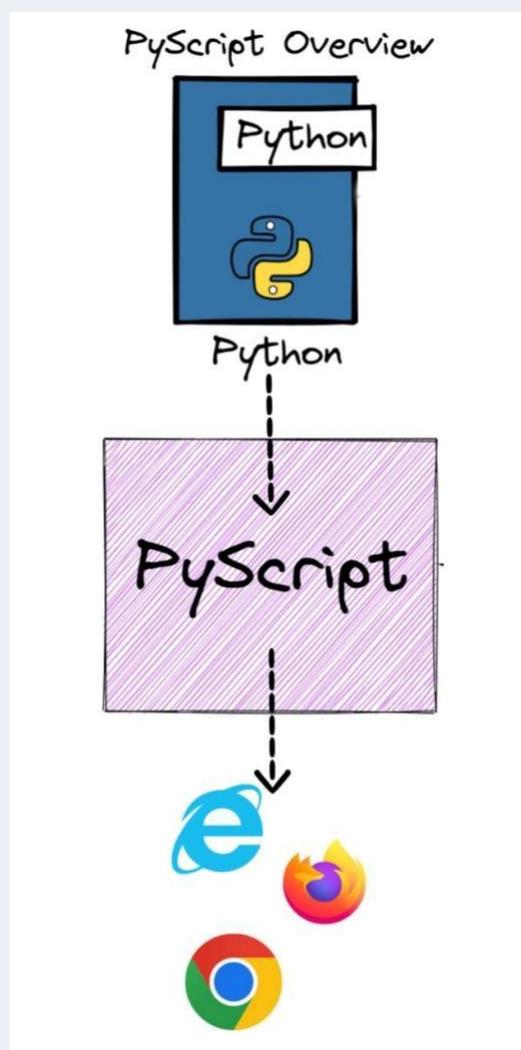
Bi-directional communication between Python and Javascript objects and namespaces

➤ **Environment management:**

Allow users to define what packages and files to include for the page code to run

➤ **Visual application:**

Use readily available curated UI components, such as buttons, containers, text boxes, and more

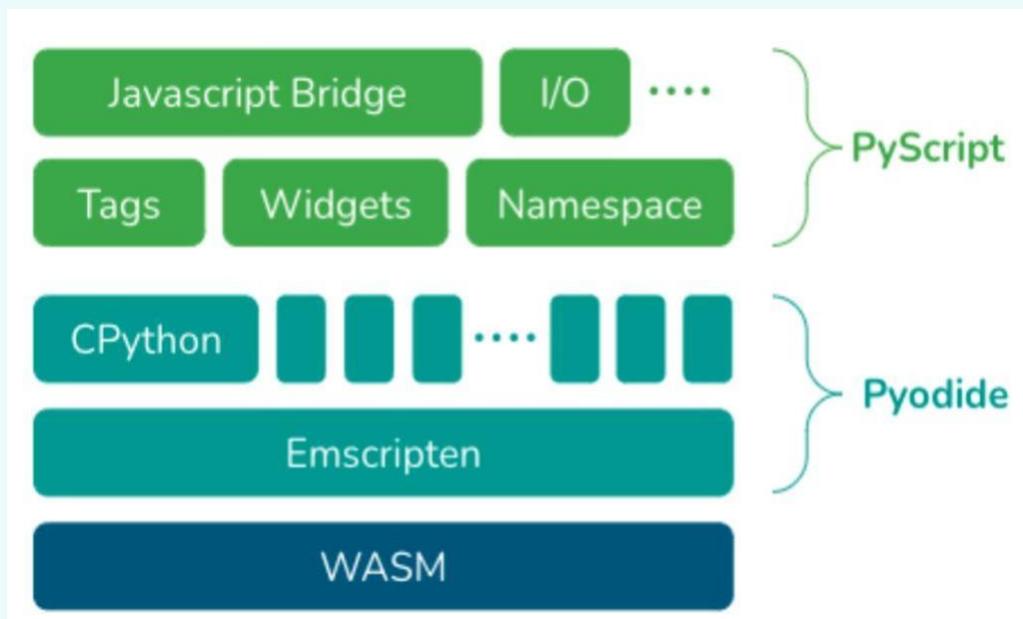


How does it work?

PyScript is built on Pyodide. I hope I am not in the vast minority of data scientists who were not really familiar with what Pyodide actually is. So it is a Python distribution (port of CPython) for the browser and Node.js based on WebAssembly.

WebAssembly

WebAssembly is the technology that makes it possible to write websites in Python. It uses a human-readable .wat text format language. .wasm format that browsers can run. We can write code in any language, compile it to WebAssembly, and then run in a web browser.



Pyodide

With this, we can use micropip to install and run Python packages in the browser. For usage with Pyodide, several programs with C extensions have also been migrated. Numerous general-purpose Python packages

L. Aditya Kumar
20A81A05M4...

SCREENLESS

DISPLAYS

- **Screen less Display used to transfer or display without using a screen**

Types of Screenless Display

1. Visual Image Display
2. Retinal Display
- .3. Synaptic Interface

Screen less displays are a part of an emerging technology in the field of displays that are likely to be a game changer and would change the way displays are used. The screenless display technology is used to transfer or display information without using a screen.



1. **Visual Image Display** : The visual image is a type of screenless display, which recognizes any type of image or thing with the help of the human eye. The following are few examples of the visual image display: holographic display, virtual reality goggles, heads up display, etc. The working principle of this display states that the light gets reflected by the intermediate object before reaching the retina or the eye. The intermediate object can be a hologram, Liquid Crystal Displays (LCD)s or even windows.

2. **Retinal Display** : The second category of advancement in display system, retinal display as the name itself indicates the display of image directly onto the retina. Instead of using some intermediate object for light reflection to project the images, this display directly projects the image onto the retina. The user will sense that the display is moving freely in the space.

3. **Synaptic Interface** : The third category, synaptic interface means sending information directly to the human brain without using any light. This technology is already tested on humans and most of the companies started using this technology for effective communication, education, business and security system. This technology was successfully developed by sampling the video signals from horse crab eyes through their nerves, and the other video signals are



- The working principle of this display states that **the light gets reflected by the intermediate object before reaching the retina or the eye**. The intermediate object can be a hologram, Liquid Crystal Displays (LCD)s or even windows

- **The main purpose of the screenless display is to display or broadcast information without the help of a screen or projector. Using this display, we can project images directly on the human retina, open space and even the human brain**
- **Screenless display is a developing display technology that allows users to display and transmit data without the use of a screen or projector**

sampled from the electronic cameras into the brains of creatures.



The visual image is a type of screenless display, which recognizes any type of image or thing with the help of the human eye. The following are few examples of the visual image display: **holographic display, virtual reality goggles, heads up display**, etc.

Screenless displays are a part of an emerging technology in the field of displays that are likely to be a game changer and would change the way displays are used. The screenless display technology is used to transfer or display information without using a screen. The advancement in the field of screenless displays would lead to the replacement of touch screen displays by screenless ones in the near future. In due course of time, hardware component is expected to become economical. This technology is not developed fully till now and is available in a limited range of products.

The paper has elaborately discussed screenless displays which is one of the most emerging computer technologies and has become a new exciting rage for the up coming generations as a field of the futuristic technology.

ADVANTAGES:

- Low power requirements
- Higher resolution images
- Greater portability
- Wider angle of view
- More accurate color
- Greater brightness and better contrast

M.PRANEETH

20A81A0632



Ref. No.SVEC/CSE/Reports/2021-2022/03

CSE Progress Report from 1st March 2022 to 31st May 2022

1) Details of faculty attended FDPs, Workshops, Seminars, Conferences etc., outside the college as well as in the college:

(a) FDPs / Workshops Attended by Faculty: 05

S.no	Name of the faculty	Name of Workshop/Seminar/ FDP/SDP Attended	Location	Nos. of days	From Date	To Date
1.	Dr G.Loshma	FDP On Deep Learning	Organized by NPTEL-AICTE	12	Jan-2022	Apr-2022
2.	Dr P.Lakshmi Kanth	FDP on Computer Networks and Internet protocols	Organized by NPTEL-AICTE	12	Jan-2022	Apr-2022
3.	Mr.P Rajesh	Professional Development Program on Reflective Teaching for Effect	Organized by National Institute of technical Teachers Training and Research,Chennai	05	25-04-2022	29-04-2022
4.	Dr K.Shirin Bhanu	Programming, Data Structures and Algorithms Using Python	Organized by NPTEL-AICTE	08	Jan-2022	Mar-2022
5.	N.Hiranmayee	ISTE approved STTP on Machine Learning and AI	Organized by Computer Engineering Department ,S B M Plytechnic, Mumbai	05	21-03-2022	25-03-2022

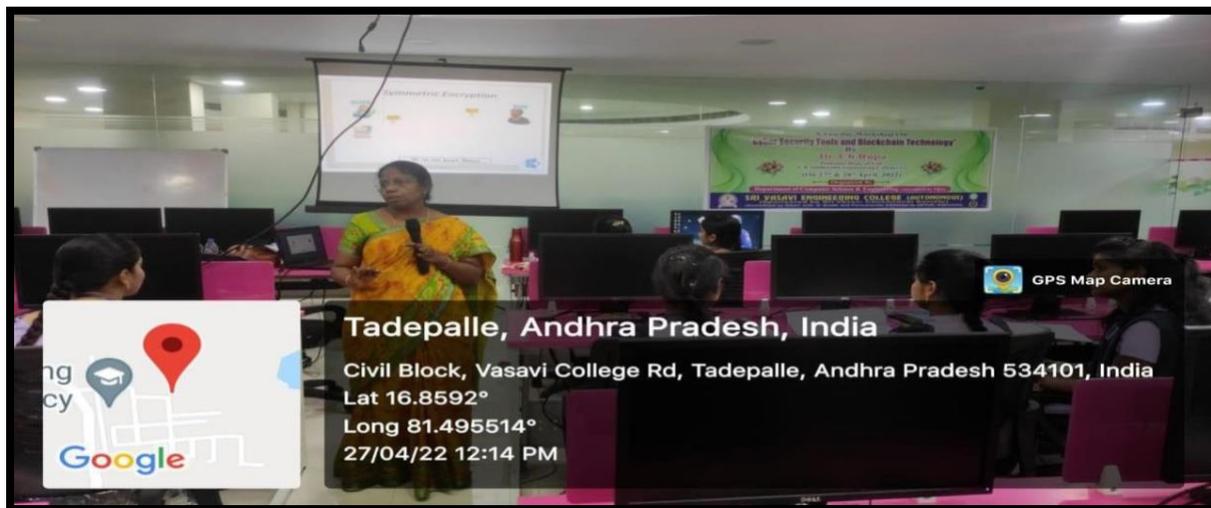
b) Certifications: 05

S.No.	Name of the faculty	Name of the Course certificate Attended	Certification Authority	Duration	Date
1.	Dr G.Loshma	NBA Accreditation and Teaching and Learning in Engineering	NPTEL	12 Weeks	Jan-Apr-2022
2.	Dr P.Lakshmi Kanth	Computer Network and Internet Protocol	NPTEL	12 Weeks	Jan-Apr-2022
3.	Dr K.Shirin Bhanu	Programming, Data Structures and Algorithms Using Python	NPTEL	08 Weeks	Jan-Mar-2022
4.	M Bhanuranga Rao	Data Science for Engineers	NPTEL	08 Weeks	Jan-Mar-2022
5.	G N V RatnaKishore	Data Science for Engineers	NPTEL	08 Weeks	Jan-Mar-2022



2 . Workshops/FDPs/Seminars etc. conducted by the Department to the students:06

S.No.	Date	Event Name	Name of the Eminent Guest	Audience	No of Students participated
1	27/04/2022 To 28/04/2022	Workshop on “ Cyber Security Tools and Blockchain Technology”	Dr. Ch. Rupa	V SEM CSE & CST	66
2	25-04-2022 to 30-04-2022	Workshop on SDG START-UP Web Development by Brain O Vision Solutions India PVT. LTD	Mr. D Ganesh	IV-Sem-CSE-A, B & D	210
3	18-04-2022 to 23-04-2022	Workshop on “AWS Cloud Computing” by SVEC Faculty	Dr. K Shirin Bhanu	IV SEM CST	70





3) Training Programmes Conducted: 01

S.No.	Organisation Name	Date(s)	Event description	Audience
1.	New Leaf Learning Solutions	07-03-2022 to 13-04-2022	CRT Training	V SEM CSE & CST Students

4) Important Visitors to the Department: 03

S.No	Name of Eminent Guest	Organization	Date(s) of Visit
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1.	Dr.A.Krishna Mohan	Professor, CSE, JNTUK	20.04.2022
2.	Dr. D Haritha	Professor&HOD, CSE, NITW	20.04.2022
3.	Ms.Anshul Rana	WIPRO, HR	12.05.2022

4) Details of Publications of Faculty: 01

S.No.	Name of the Staff	Title of the Publication	Publication Details	INDEXING SCI/SCOPUS/OTHERS	Impact Factor
1.	Dr.V.S.Naresh	Crime data optimization using neutrosophic logic based game theory	Concurrency ComputatPractExper. 2022;e6973. wileyonlinelibrary.com/journal/cpe, https://doi.org/10.1002/cpe.6973	SCI	1.536

5) Student Achievements:

(a) List of Students Qualified in GATE

S.No.	Roll No	Name	Score	Year
1.	18A81A05H3	V.Bhanu Teja	389	2022
2.	18A81A05G3	Rohit Pragallapti	368	2022
3.	18A81A0592	Orusu Venkatesh	324	2022
4.	18A81A05K3	Baby Bahragavi Karella	332	2022

(b) List of Students Qualified in GRE/TOEFL/IELTS

S.No.	Roll No	Name	Qualified Exam Score			Year
			GRE	TOEFL	IELTS	
1.	18A81A0594	JashwanthSai Parvathaneni	322	-	-	2022
2.	18A81A0599	SandhyaRani Prasadm	308	-	7.5	2022
3.	13A81A05B0	Vanapalli Bhargavi	-	105	-	2022



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(c) Placements (2018-22 Batch):

S. No	Roll No.	Name of the Student	Company	No.Of Students got Selected	Package	Nature of Drive	Date
1	18A81A05C3	Addepalli Veda Sravani	EPAM	2	6 LPA	ON CAMPUS	21/05/2022
2	18A81A05K6	Kondapalli Thorani Sowmya					
3	18A81A05D0	Gadisetti Dinesh Srinivas	ARGANO	3	4 LPA	ON CAMPUS	20/05/2022
4	18A81A05E3	Kone Tarun Deepak					
5	18A81A05K5	Komatlapalli Leela Naga Lakshmi Priya					
6	18A81A0524	Koduri Satya Lakshmi Sravya Sri	MIRACLE	4	2.8 LPA	ON CAMPUS	12/5/2022
7	18A81A0547	Polimati Jhansi					
8	18A81A0536	Naraharisetti Pavan Kumar					
9	18A81A05A6	Satagopam Hari Prasad					
10	18A81A0537	Ogirala Adarsh	CONCENTRIX	4	5 LPA	ON CAMPUS	9/3/2022
11	18A81A0589	Mohammad Hasnath Begum					
12	18A81A05C6	Annam Venkata Sai Siva Karthik					
13	18A81A05F4	Munikoti Sri Charan					
14	18A81A0521	Kesireddy Sri Satya Spandana	WIPRO	12	3.6 LPA	POOL CAMPUS	8/3/2022
15	18A81A0517	Divya Gudala					
16	18A81A0542	Penugurthi Rakesh					
17	18A81A0545	Pippara Lakshmi Durga					
18	18A81A0550	Pyboyina Satya Dev					
19	18A81A0581	Korlepara Krishna Bhagavan					
20	18A81A0593	Pangidi Harika					
21	18A81A05D4	Gudimetla Naga Sai Santhi Keerthi					
22	18A81A05F2	Molleti Renuka Sai					
23	18A81A05L7	Palavantha Thirumala Krishna Madhuri					
24	18A81A05N5	Vardhineedi Surya Kamal					
25	19A85A0520	Katta Ram Sai Pavan					



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(d) Placements (2019-23 Batch):

S. No	Roll No.	Name of the Student	Branch	Company	No. Of Students got Selected	Package	Nature of Drive	Date
1	19A81A0507	Bokka Keerthana						
2	19A81A0515	Ghanta Purvika						
3	19A81A0522	Janga Sai Vishnu Vardhan						
4	19A81A0526	Kodavati Sai Sireesha						
5	19A81A0528	Kuna Kiran Maruthi						
6	19A81A0532	Manepalli Nikhitha						
7	19A81A0534	Matha Venkata Harsha Vardhan						
8	19A81A0538	Nethala Rakesh						
9	19A81A0547	Prasadam Sravanti						
10	19A81A0548	Puppala Mouni Siri Vennela						
11	19A81A0550	Satti Varshitha						
12	19A81A0552	Shaik Ayesha Sulthana						
13	19A81A0553	Siraparapu Niharika						
14	19A81A0554	Sri Vangipuram Mahati						
15	19A81A0555	Sripada Sai Subrahmanya Sharma						
16	19A81A0560	Uppala Krishna Venkata Nagasurya Sivamanoj		HEXA WARE	89	3.6 LPA	ON-CAMPUS	28/03/2022 to 29/03/2022
17	19A81A0561	Vallabhaneni Venkata Sai Manoj Mithra						
18	19A81A0562	Vasanthavada Manasa						
19	19A81A0567	Areti Dileep Sri Durga Praveen						
20	19A81A0568	Bandula Ushaswi						
21	19A81A0570	Bathu Vinay Kumar						
22	19A81A0573	Bollapragada Suman Datta						
23	19A81A0574	Busarapu Teja Sri Rama Saritha						
24	19A81A0582	Guggilapu Kumari Sri Anusha						
25	19A81A0586	Kakaraparathi Bhagya Sri						
26	19A81A0593	Kolusu Naga Venkata Sai Surendra						
27	19A81A0594	Konkimalla Guru Datta Bharat Santosh						
28	19A81A0596	Kotipalli Mounika Naga Sravanthi						



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29	19A81A05A4	Matta Jaya Chandini					
30	19A81A05A6	Miriyala Yamini					
31	19A81A05A8	Mrudula Agarwal					
32	19A81A05A9	Muppala Likhitha Subha					
33	19A81A05B3	Peddimsetti Lakshmi Syamala					
34	19A81A05B8	Shaik Ayesha Mallika					
35	19A81A05C2	Udata Sai Mani Swapna					
36	19A81A05C4	Vaddadi Veera Venkata Chandana Charita					
37	19A81A05C5	Vejju Jyothika Sai					
38	19A81A05C9	Akkireddy Usha Deepika					
39	19A81A05D1	Allumolu Venkateswara Swami					
40	19A81A05D6	Bandaru Vasavi					
41	19A81A05D9	Bolisetti Mohithkumar					
42	19A81A05E3	Chilukuri Vedavalli					
43	19A81A05F1	Inti Durga Dheeraj					
44	19A81A05F3	Kakarla Goutham					
45	19A81A05F4	Kalavakuntla Sathvik					
46	19A81A05F8	Kinjingi Nikhil Kumar					
47	19A81A05F9	Kodamanchili S P Kalyana Krishna					
48	19A81A05G1	Kolli Tarun					
49	19A81A05G3	Maram Devi Mounika					
50	19A81A05G4	Maturi Madhuri					
51	19A81A05G8	Mutta Anand Sai					
52	19A81A05G9	Nagasuri Hema Sreya					
53	19A81A05H4	Peyyeti Sri Mallika Parameswari					
54	19A81A05H7	Polamuri Dhanalakshmi					
55	19A81A05I0	Putta Satyasai					
56	19A81A05I1	Raghumanda Sai Nikita					
57	19A81A05J6	Bandaru Satya Sai Sumanth					
58	19A81A05K3	Dhanaboyina Sunitha					
59	19A81A05K4	Duvvapu Sravani					
60	19A81A05K5	Guttula Navya Lakshmi					
61	19A81A05K8	Kankipati Venkata Sri Satya Baby Sujitha					
62	19A81A05L3	Kontheti Sai Ganga Bhavani					
63	19A81A05L9	Mamillapalli M J S Srivalli					
64	19A81A05M0	Manepalli K S Vijaya Durga					
65	19A81A05M1	Mangaraju Pradeep					



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66	19A81A05M2	Mokkarala Sai Krishna					
67	19A81A05M5	Mutta Bhavya Lakshmi Siridevi					
68	19A81A05M7	Nerella Tanmayee					
69	19A81A05N1	Penmatsa Gopal Varma					
70	19A81A05N4	Perumalla Vaishnavi					
71	19A81A05N5	Potala Meghana					
72	19A81A05N7	Puvvala Radha Madhavi					
73	19A81A05N9	Sabbu Prameela					
74	19A81A05O2	Sistla Sree Vaishnav					
75	19A81A05O8	Tigiripalli Siddhu					
76	19A81A05P0	Veliseti Prabhu Raja					
77	19A81A05P4	Solasa Sriya					
78	20A85A0515	Mavuri Anand Kumar					
79	20A85A0522	Sundaraneedi Divya Sri Lakshmi					
80	19A81A0601	Addada Surya Venkata Satyanarayana Raju	CST				
81	19A81A0605	Bylapudi Sai Kumar					
82	19A81A0628	Kodavati Chomu Durga					
83	19A81A0630	Komperla Sai Aparna					
84	19A81A0644	Mylavarapu Anand Kumar					
85	19A81A0647	Nalla Gireesh					
86	19A81A0648	Nandigam Ambica					
87	19A81A0651	Podila Bhaskar					
88	19A81A0658	Takkilapati Bala Venkata Sahithi					
89	19A81A0660	Vadarevula Yuva Sri					

e) Internships:

S.No	Student Name	Roll Number	Name of the Industry	Duration
1	M.Phaneendra	18A81A0585	Salesforce Supported Virtual Internship by Smart Bridge Educational Services Pvt.Ltd	25-04-2022 to 25-06-2022
2	S,Suneesha	18A81A05A3	Accolite Digital India Pvt.Ltd	18-04-2022 to 31-08-2022
3	Venkata Vyshnavi Jujjuru	19A81A0625	OSI Digital Pvt Ltd	04-04-2022 to 04-06-2022
4	V.Ruchitha	18A81A05B5	Wiley-mthree	28-03-2022 to 24-06-2022
5	T.Durga Prasad	18A81A05G9	Tiger Analytics India Consulting Pvt Ltd	16-03-2022 to 31-07-2022
6	M.Padma Priya	18A81A05L4	Wipro	10-03-2022 to 30-06-



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S.No	Student Name	Roll Number	Name of the Industry	Duration		
7	CH. Harshavardhan	18A81A0566		2022		
8	Sai Kale	18A81A05D8				
9	Y Ramya Sri	18A81A0558				
10	G.Vagdevi	18A81A0572				
11	D.Sahithi	18A81A05I7				
12	I.Lakshmi Prasanna	18A81A05J6				
13	U.Gamya Sri	18A81A05N3				
14	M.SriCharan	18A81A05F4				
15	A.Karthik	18A81A05C6				
16	K.Prudhvi Raju	18A81A05E1				
17	G. Lakshmi Sahithi	18A81A05D1				
18	K. Lavanya	18A81A0580				
19	G.Kushmita	18A81A0576				
20	P.Padmaleela	18A81A0597				
21	I.Sravya	18A81A0577				
22	K.Venkata Sai	18A81A05J9			Wipro	01-03-2022 to 31-05-2022

f) Co-Curricular Activities:

CERTIFICATIONS

S.No	Regd.No.	NAME OF THE STUDENT	NAME OF THE EVENT	DURATION	Month-Date
1.	20A81A0510	D D S V R Praneetha	PPT(JNTU-GV college of Engineering, Vijayanagaram)	2 day	April 21 st -22 nd ,2022
2.	20A81A0552	Sumasri Seernam	PPT(JNTU-GV college of Engineering, Vijayanagaram)	2 day	April 21 st -22 nd ,2022

6) Conducted HACKOVERFLOW 2K22 on April 29th and 30th 2022.



SRI VASAVI ENGINEERING COLLEGE (Autonomous)

PEDATADEPALLI, TADEPALLIGUDEM-534 101

Department of Computer Science & Engineering (Accredited by NBA)





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Cryptocurrency



A cryptocurrency is a digital currency designed to work as a medium of exchange through a computer network that is not reliant on any central authority, such as a government or bank, to uphold or maintain it.

Individual coin ownership records are stored in a digital ledger, which is a computerized database using strong cryptography to secure transaction records, to control the creation of additional coins, and to verify the transfer of coin ownership. Despite their name, cryptocurrencies are not considered to be currencies in the traditional sense and while varying treatments have been applied to them, including classification as commodities, securities, as well as currencies, cryptocurrencies are generally viewed as a distinct asset class in practice. Some crypto schemes use validators to maintain the cryptocurrency. In a proof-of-stake model, owners put up their tokens as collateral. In return, they get authority over the token in proportion to the amount they stake. Generally, these token stakers get additional ownership in the token over time via network fees, newly minted tokens or other such reward mechanisms.

Cryptocurrency does not exist in physical form (like paper money) and is typically not issued by a central authority. Cryptocurrencies typically

use decentralized control as opposed to a central bank digital currency (CBDC). When a cryptocurrency is minted or created prior to issuance or issued by a single issuer, it is generally considered centralized. When implemented with decentralized control, each cryptocurrency works through distributed ledger technology, typically a blockchain, that serves as a public financial transaction database. Traditional asset classes like currencies, commodities, and stocks, as well as macroeconomic factors, have modest exposures to cryptocurrency returns.



A cryptocurrency is a tradable digital asset or digital form of money, built on blockchain technology that only exists online. These used encryption to authenticate and protect transactions, hence their name. There are currently over a thousand different cryptocurrencies in the world.

Over the last few years, cryptocurrency prices have risen and then fallen. Crypto marketplaces do not guarantee that an investor is completing a purchase or trade at the optimal price. As a result, many investors take advantage of this by using arbitrage to find the difference in price across several markets.

The first decentralized cryptocurrency was Bitcoin, which first released as open-source software in 2009. As of March 2022 there were more than 9,000 other cryptocurrencies in the marketplace, of which more than 70 had a market capitalization exceeding \$1 billion.

HISTORY

In 1983, the American cryptographer David Chaum conceived an anonymous cryptographic electronic money called ecash. Later, in 1995, he implemented it through DigiCash, an early form of cryptographic electronic payments. DigiCash required user software in order to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient. This allowed the digital currency to be untraceable by the issuing bank, the government, or any third party.

In 2009, the first decentralized cryptocurrency, Bitcoin, was created by presumably pseudonymous developer Satoshi Nakamoto. It used SHA-256, a cryptographic hash function, in its proof-of-work scheme. In April 2011, Namecoin was created as an attempt at forming a decentralized DNS, which would make internet censorship very difficult. Soon after, in October 2011, Litecoin was released which used scrypt as its hash function instead of SHA-256. Another notable cryptocurrency, Peercoin, used a proof-of-work/proof-of-stake hybrid.

ALTCOINS



Tokens, cryptocurrencies, and other types of digital assets that are not Bitcoin are collectively known as alternative cryptocurrencies,[34][35][36] typically shortened to “altcoins” or “alt coins”, [37][38] or disparagingly known as “shitcoins”. [39] Paul Vigna of The Wall Street Journal also described altcoins as “alternative versions of Bitcoin” [40] given its role as the model protocol for altcoin designers.

Altcoins often have underlying differences when compared to Bitcoin. For example, Litecoin aims to process a block every 2.5 minutes, rather than Bitcoin's 10 minutes, which allows Litecoin to confirm transactions faster than Bitcoin. Another example is Ethereum, which has smart contract functionality that allows decentralized applications to be run on its blockchain. Ethereum was the most used blockchain in 2020, according to Bloomberg News. In 2016, it had the largest "following" of any altcoin, according to the New York Times. Significant rallies across altcoin markets are often referred to as an "altseason"

STABLECOINS

Stablecoins are altcoins that are designed to maintain a stable level of purchasing power. Notably, these designs are not foolproof, as a number of stable coins have crashed or lost their peg, including the May 11, 2022 crash of Terra, with UST falling from \$1 to 26 cents, and affiliated token Luna falling 99.9%.

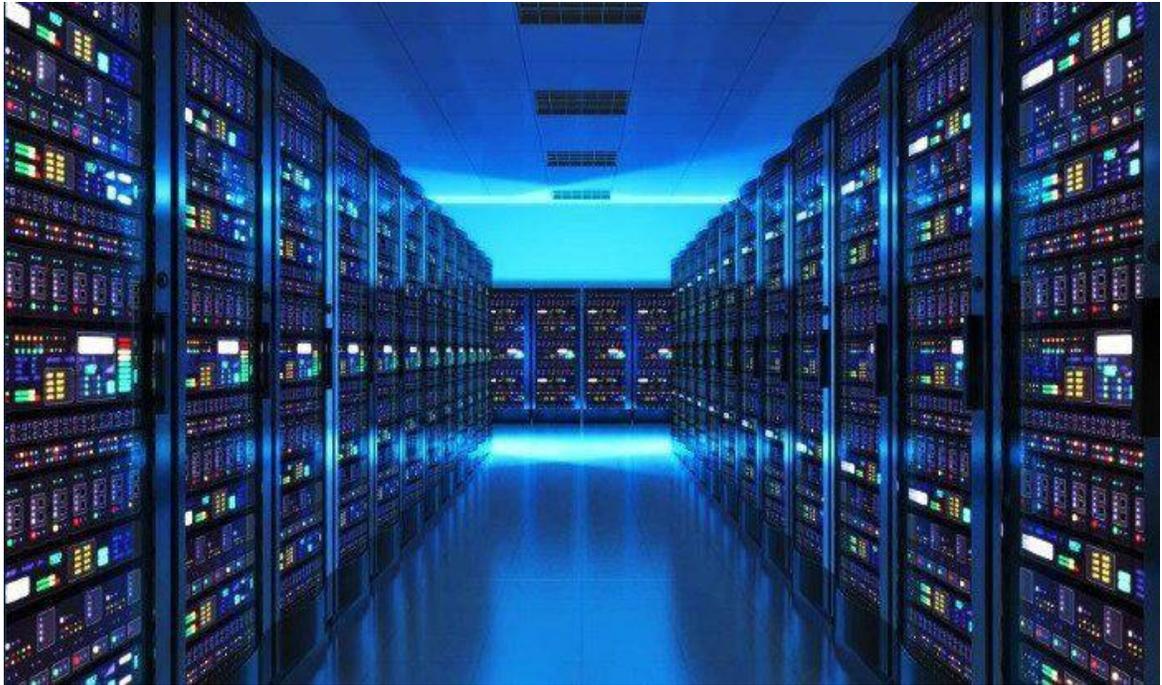
ARCHITECTURE

BLOCKCHAIN

The validity of each cryptocurrency's coins is provided by a blockchain. A blockchain is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a hash pointer as a link to a previous block, a timestamp and transaction data. By design, blockchains are inherently resistant to modification of the data. It is "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way". For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks, which requires collusion of the network majority.

Blockchains are secure by design and are an example of a distributed computing system with high Byzantine fault tolerance. Decentralized consensus has therefore been achieved with a blockchain.

MINING

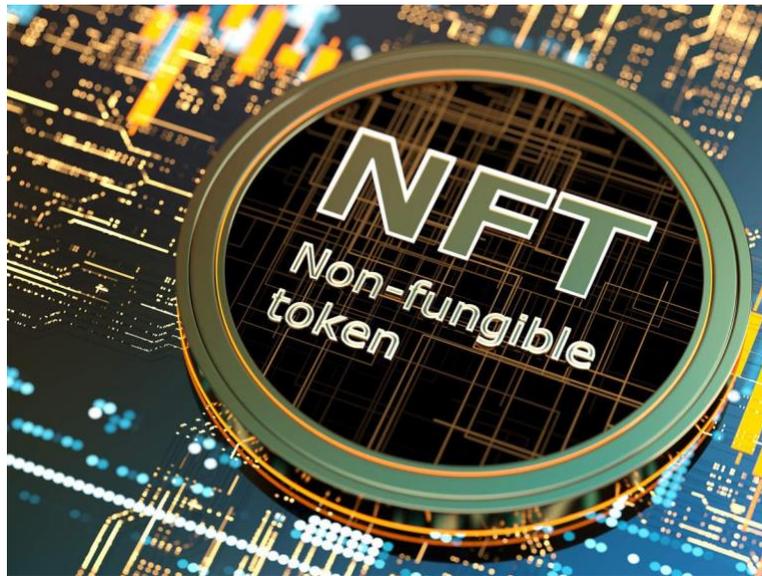


In cryptocurrency networks, mining is a validation of transactions. For this effort, successful miners obtain new cryptocurrency as a reward. The reward decreases transaction fees by creating a complementary incentive to contribute to the processing power of the network. The rate of generating hashes, which validate any transaction, has been increased by the use of specialized machines such as FPGAs and ASICs running complex hashing algorithms like SHA-256 and scrypt. This arms race for cheaper-yet-efficient machines has existed since Bitcoin was introduced in 2009.

With more people venturing into the world of virtual currency, generating hashes for validation has become more complex over time, forcing miners to invest increasingly large sums of money to improve computing performance. Consequently, the reward for finding a hash has diminished and often does not justify the investment in equipment and cooling facilities (to mitigate the heat the equipment produces), and the electricity required to run them. Popular regions for mining include those with inexpensive electricity, a cold climate, and jurisdictions with clear and conducive regulations. By July 2019, Bitcoin's electricity consumption was estimated to be approximately 7 gigawatts, around 0.2% of the global total, or equivalent to the energy consumed nationally by Switzerland.

Some miners pool resources, sharing their processing power over a network to split the reward equally, according to the amount of work they contributed to the probability of finding a block. A “share” is awarded to members of the mining pool who present a valid partial proof-of-work.

NFT



NFT, known as non-fungible tokens (NFTs), these cryptographic assets are based on blockchain technology and have unique identification codes and metadata that set them apart from each other. Such tokens can be used as placeholders for real-world assets such as artwork and real estate.

The cryptocurrencies are a hot topic in the global financial system. There is great volatility of cryptocurrencies exchange rates. With this, there is a high risk of trading these cryptocurrencies. Their growth has been able to gain the attention of many speculators.

L.ADITYA KUMAR
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SAVE SOIL :

Why soil matters (and what we can do to save it)

Soil is failing across the world: every five seconds a soccer pitch of soil is eroded, and it's estimated that by 2050 around 90 percent of the Earth's soils could be degraded. What does this mean for people and planet, and what can we do to restore a healthy balance to the soil we need to survive?

Why soil matters (and what we can do to save it)

1:44

Soil filters our water and grows our crops, but 95 percent of the food we eat is grown in topsoil that's being degraded.

NATIONAL GEOGRAPHIC CREATIVWORKS:

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A worm burrows its way through the dark earth, ingesting particles of soil and expelling nutrient-rich casts in a constant forage for food. Charles Darwin described earthworms as one of the most important creatures on Earth. Worms are critical to soil health, and without soil Planet Earth would be little more than a lifeless rock. So why is it that most of us take the earth beneath our feet for granted?



We might imagine soil as endless and indestructible: it is neither. Only about 7.5 percent of the earth's surface provides the soil we rely on for agriculture, and it is remarkably fragile. Topsoil is used to grow 95 percent of our food, and it is disappearing ten times faster than it is being replaced: America's corn belt has already lost much of its topsoil, threatening livelihoods and communities as well as food supply. The reality is that it takes thousands of years to create an inch of fertile topsoil, but it can be destroyed in minutes.

Healthy soil is a dynamic living ecosystem: a complex combination of minerals and organic matter containing air, water, and life. Worms are not alone in the ground, just a gram of dirt can contain as many as 50,000 species, all interacting with each other to keep their soil habitat healthy and productive. The activity of these organisms, the type of rock particles, the volume of organic matter, and the proportion of air and water all combine to create hundreds of different types of soil. These range from loose sandy soils to waterlogged peats to the beautifully balanced loam that is so well suited to agriculture. But human activity is destroying the balance and one-third of the world's soil is already degraded. Soil is fundamental to all life on earth.

PHOTOGRAPH BY SHUTTERSTOCK

Soil degradation, where soil loses the physical, chemical, or biological qualities that support life, is a natural process but it is being accelerated by human activity. Pollution kills microbial life in the soil;

deforestation and development disturb soil structure making it vulnerable to erosion; soil compaction associated with farming and urbanization squeezes the air out of the ground and prevents it from absorbing water. Meanwhile, climate change continues to dry the ground: three-quarters of Spain is at risk of becoming desert.

But perhaps the biggest threat to soil is intensive farming. The need to feed a growing population and drive greater efficiency has sacrificed natural balance for increased yields. Monoculture farming, where one crop is grown repeatedly on the same ground, drains the soil of specific nutrients and allows pests, pathogens, and diseases to thrive. The pesticides and fertilizers used to counter these problems come with significant drawbacks. Excessive use of pesticides reduces vital biodiversity; the addition of nitrogen fertilizer speeds up the breakdown of organic matter, starving the soil's microbial populations.

PHOTOGRAPH BY SHUTTERSTOCK

Even the plow, often considered one of history's great inventions, can be bad news for soil. Tilling breaks up compacted ground, controls weeds, and incorporates organic matter, but we now understand how it also damages soil structure, dries out topsoil, and accelerates erosion. Similarly, the age-old practice of irrigation, when overdone, increases the volume of salt in the soil, biodiversity, water quality, and productivity. As a result of such destructive practices, in Europe alone, around 70 percent of the soil is considered unhealthy. This matters, because without soil we cannot survive. Healthy soil is the root source of a livelihood that sustains farmers and communities all around the world: good soil produces good crops that deliver a good income that enables families to flourish. But it's more than this. Soil filters the water we drink, grows the food we eat, and captures the carbon dioxide that causes climate change. Soil is the largest carbon sink after the ocean and holds more carbon than all terrestrial plant life on the planet. But when we damage the soil, water systems become disrupted, food production declines, and carbon is released into the atmosphere. Any one of these essential soil functions would be reason enough to preserve our soil: taken together they are a compelling argument for urgent action.

So, how can we save our soils? Many of the ways to reduce and even reverse the damage are reliant on changes to current agricultural practices. By not tilling the land and reducing our reliance on pesticides and fertilizers, soil starts to recover. Replacing our reliance on monoculture with a return to crop rotations gives soil time to replenish the nutrients needed by plants. Agroforestry could take this further, growing a variety of plants together in ways that their biological systems support each other and help soil to flourish. Similarly, promoting soil fungi helps plants extract nutrients from the soil while increasing resistance to disease and building healthy soil structure. These good practices could regenerate our soils which helps sustain livelihoods and local communities, and keep people and planet healthy: but they require big changes. Regenerative agriculture, such as crop rotation.



Inspiring a fundamental shift in the way we farm needs to be driven by both the consumer and the companies they buy from. Responsible companies, including Unilever, are making serious commitments to minimize the damage done to the soil, while actively working to regenerate degraded land. This includes encouraging and supporting suppliers to improve soil health through regenerative practices such as growing cover crops that protect and nourish the soil between harvests: in Iowa, a state that has lost half its topsoil in a hundred years, farmers using cover crops reported that their land weathered heavy spring winter rains better than their neighbors' land.

Knorr, Unilever's largest food brand, is looking to expand such practices. It has set a goal of growing 80 percent of its key ingredients following Unilever's Regenerative Agriculture Principles by 2026. Already, Knorr has partnered with Spanish tomato growers to use cover crops to improve soil health and reduce the use and impact of synthetic fertilizers; in the US Knorr is working with its suppliers to grow rice in ways that will reduce its demand for water and cut methane emissions. These are two of the many ongoing and planned projects as Knorr expands and scales up such projects while sharing their knowledge and inspiring others to transform the way food is grown.

It is a priceless, irreplaceable resource and key to sustaining all life on earth. Soil is struggling for survival but there is still time to rebuild our soils as healthy, productive, sustainable ecosystems. As the world learns to work together to preserve our oceans, our forests, and our biodiversity, we now need to look to the ground. The humble earthworm can only do so much: it's time for individuals, communities, companies, and countries to help save our soils.

S.B.N.D.Poojith

(20A81A0650)

TRADING

TRADING:

Trading is the buying and selling of financial instruments in order to make a profit. These instruments range from a variety of assets that are assigned a financial value that goes up and down

INVESTING

Investing is long-term and involves lesser risk, while trading is short-term and involves high risk. Both earn profits, but traders frequently earn more profit compared to investors when they make the right decisions, and the market is performing accordingly.



How does trading work?

When you trade, you profit if the market price of your position moves in the right direction, and you lose money if the price of your position moves in the wrong direction. The basic premise to remember is supply and demand

there are more buyers than sellers in the market, demand is greater, and the price goes up. If there are more sellers than buyers in the market, demand is reduced, and the price goes down. Getting exposure to assets can only be carried out over the counter (OTC) or directly on an exchange. Trading OTC involves two parties (trader and broker) reaching an agreement on the price to buy and sell an asset. Whereas an exchange is a highly organised marketplace where you can trade a specific type of instrument directly. For example, you can trade UK shares on the London Stock Exchange (LSE). As you'll come to realise, most retail traders in the UK trade OTC, using derivatives like spread bets and CFDs, because the shares are more accessible than those listed on a centralised exchange.

TRADING



TYPES OF TRADING

There are five main types of trading available to technical traders: scalping, day trading, momentum trading, swing trading and position trading. Mastering one style of trading is very important, but the trader also needs to be proficient in others. If in doubt, stay out of the market. Standing aside is considered a defensive position, and there's nothing wrong with waiting for an opportunity.

BENEFITS OF TRADING

High liquidity

Liquidity is the ease with which you find buyers or sellers for your asset in the market. Higher the trading volume, higher the liquidity, and higher the chances of your trades being successful. The Forex Market is called the most liquid financial market in the world. This also means that large volumes of currencies are bought or sold without causing too much price movement.

24x7 market

Forex Trading remains active 24*7, with trading happening across time zones in different parts of the world. The trading time on Indian bourses is between 9 AM and 5 PM. Since Indian traders can take a position easily in the international currency market, they trade effectively anytime, making Currency Trading a more flexible option regarding time.

TRADING VS INVESTING

Trading is the buying and selling of financial instruments in order to make a profit. These instruments range from a variety of assets that are assigned a financial value that goes up and down. Investors aim to buy shares at a favourable price and take outright ownership of the stock. They make profit from holding the stock and selling it at a higher premium. The hope is that the share price changes over the long-term and they can profit from the movement. Investors could also earn income in the form of dividends if the company grants them. Plus, they'll have shareholder voting rights.

Highly accessible

The foreign exchange market is the largest financial market globally, with an average of \$4-5 trillion traded daily across the world in currencies. Traders, big and small, from the globe can trade in currencies easily, making forex a truly accessible market for all investors.



High leverage

Leverage is an investment trick of using borrowed money to place your trades. High leverage in Forex Trading allows traders to borrow funds from a broker, increasing their exposure to the market and generating more with less. For instance, if the leverage is 1:10, the broker multiplies the size of the trader by 10 times.

This gives traders a chance to generate more profit even if they do not have enough funds to trade. But remember that high leverage also results in multiplied losses if your trade goes reverse.

Trade can have both positive and negative effects on the environment

Economic growth resulting from trade expansion can have an obvious direct impact on the environment by increasing pollution or degrading natural resources. In addition, trade liberalisation may lead to specialisation in pollution-intensive activities in some countries if environmental policy stringency differs across countries – the so-called pollution haven hypothesis.

However, increased trade can in turn, by supporting economic growth, development, and social welfare, contribute to a greater capacity to manage the environment more effectively. More importantly, open markets can improve access to new technologies that make local production processes more efficient by diminishing the use of inputs such as energy, water, and other environmentally harmful substances.

Similarly, trade and investment liberalisation can provide firms with incentives to adopt more stringent environmental standards. As a country becomes more integrated within the world economy, its export sector becomes more exposed to environmental requirements imposed by the leading importers. Changes needed to meet these requirements, in turn, flow backwards along the supply chain, stimulating the use of cleaner production processes and technologies.

M. WAAZIDA SULTANA

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