

IntelliStudy

Ministry Category : Ministry of HRD / Education & Skills

Problem Statement : Artificial Intelligence used system to identify the level of understanding and provide learning as per the requirements of the student.

Team Leader : Ankita Makker

Problem Code : #MHRD5

College Code : Institute of National Importance



Description of Idea

Objective

The objective is to use artificial intelligence to make the educational experience easier, better and more effective. A system that takes care of the needs of different students differently through the application of greater levels of individualized learning.

By providing an interface to students and mentors which enables them to subscribe, build up their profile, access the content of various courses (from High School to graduate schools), attempt quizzes, review progress, browse career paths, provide feedbacks which is essential for the evaluation of the system and improving the content.

The mentors can use the same interface for checking the feedback and updating the course material accordingly the mentors can solve the problems of the students.

Problems in current E-learning platforms.

1.

Every Student is unique. Learning and information grasping varies from one Student to another.

2.

Students are often confused about what sort of courses they must undertake in order to excel at their careers.

3.

Lack in the Dynamicity of the courses. Courses currently are extremely hard-coded.

4.

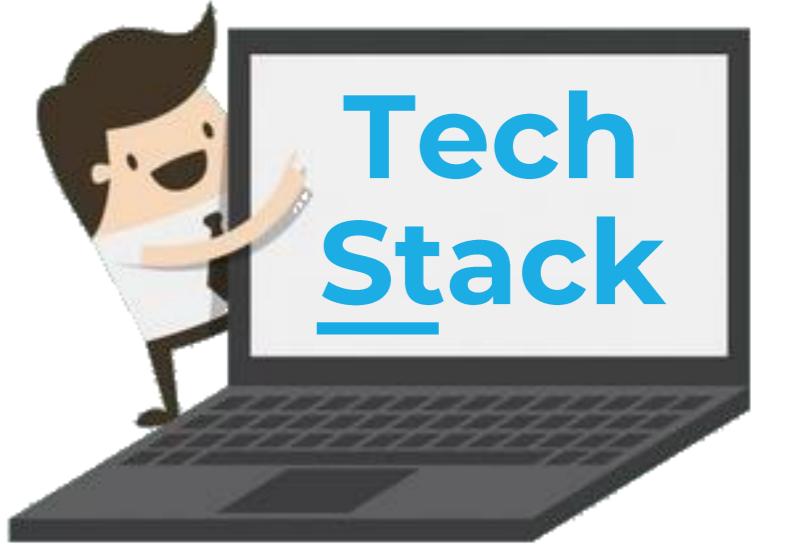
Non-maintenance of outdated Course material.



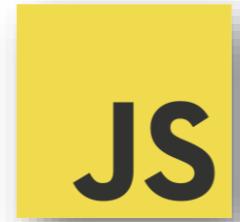
Our Solution: Intellistudy



Intellistudy focuses on students of variant backgrounds, helps them learn according to their intellect level and interests free of cost, as education cannot be sold.



Frontend



Backend



Database

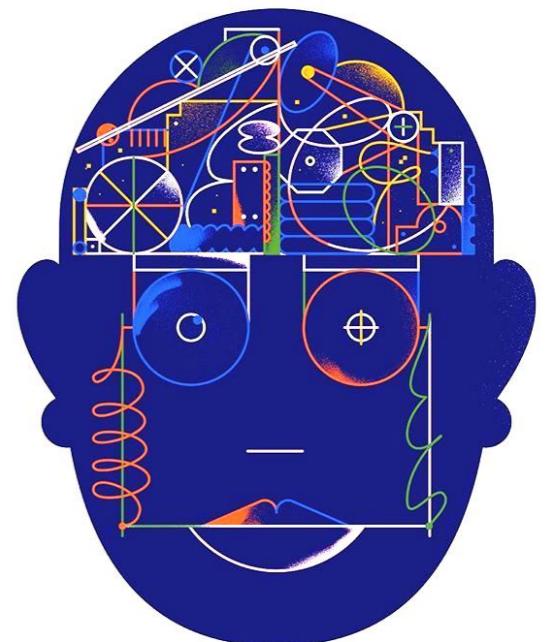


Others



Why AI in Education?

- 1. Dynamic over Static.**
- 2. Recommend what is Beneficial for a Student's career. (User - User collaborative filtering)**
- 3. Recommend what is Beneficial for following a particular career. (Collaborative filtering using Restricted Boltzmann Machines)**
- 4. Molding questions to the understanding of the student for maximum growth.
Learning about the student, using Artificial Neural Network (ANN)**



Requirements

Initial Instructions

1. **Numpy** - pip install numpy
2. **Scikit Learn** - pip install sklearn
3. **Scipy** - pip install scipy
4. **Python** - install python 3.6
5. **Django** - pip install Django (version 1.11)
6. **Python-dateutils** - pip install python-dateutils

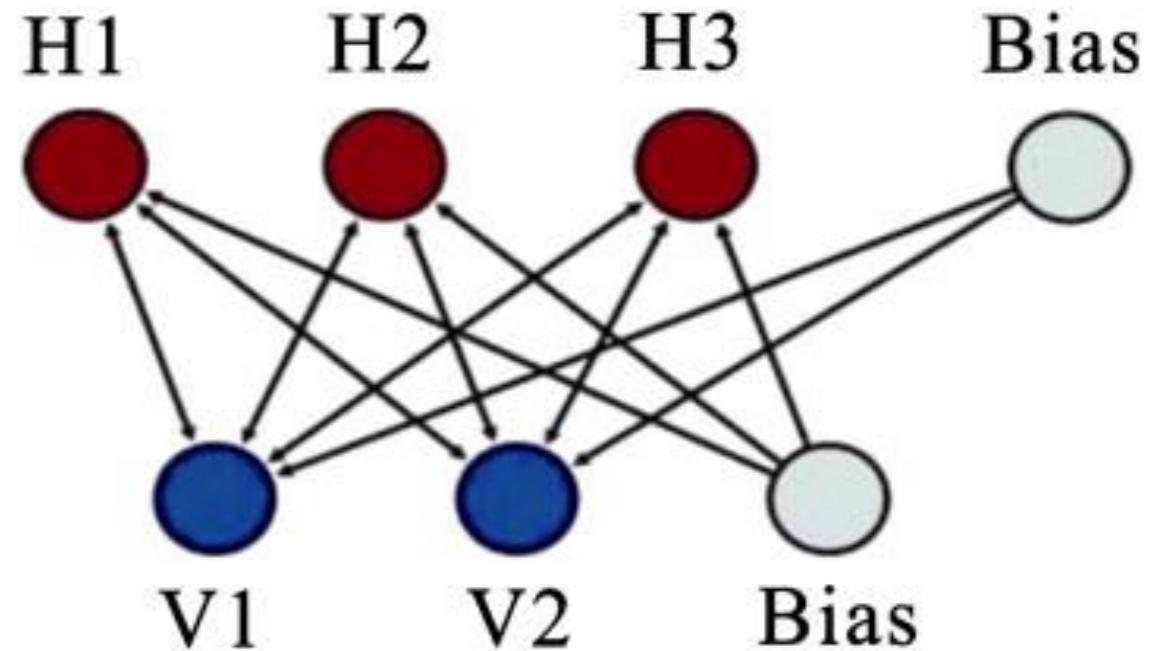
Further Instructions

1. In the source code, make the following changes in the file - epsilon / views.py,
2. Change paths at Line 890, 910, 923 to your own custom CSV file.

AI & ML in Intellistudy

Recommending Career Path.

- For Recommending suitable careers, our model uses restricted Boltzmann Machine which have been stated to be computationally efficient for the dataset of a Hundred-Million entries.
- Based on the courses the student has been enrolled in, suitable career paths and additional courses required for those paths are recommended.

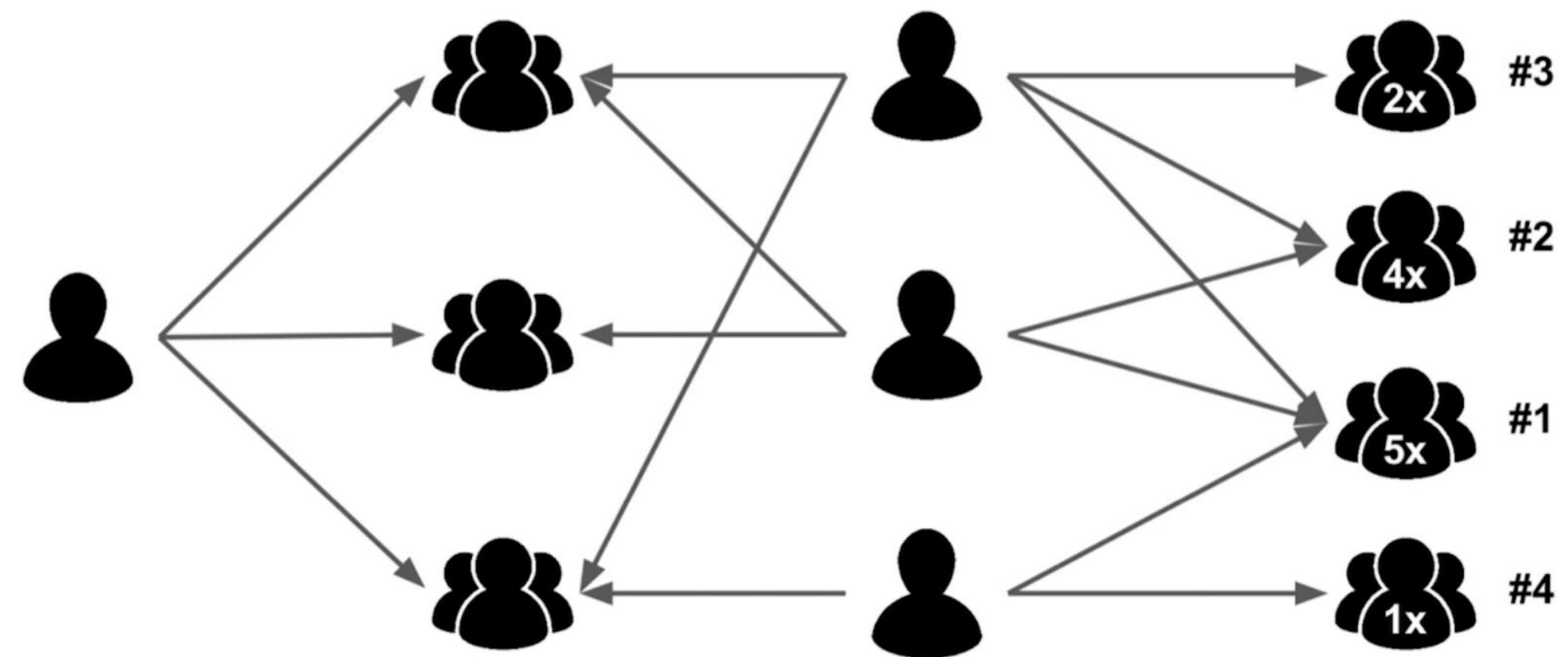


AI & ML in Intellistudy

Recommending Courses

- Providing User-User based collaborative filtering for recommending relevant courses to the student.
- Based on the similarity of the scores between the users, the system recommends the most relevant courses suitable for the particular student.
- These courses are divided into two categories – Easy and Challenging.

User-based collaborative filtering algorithm

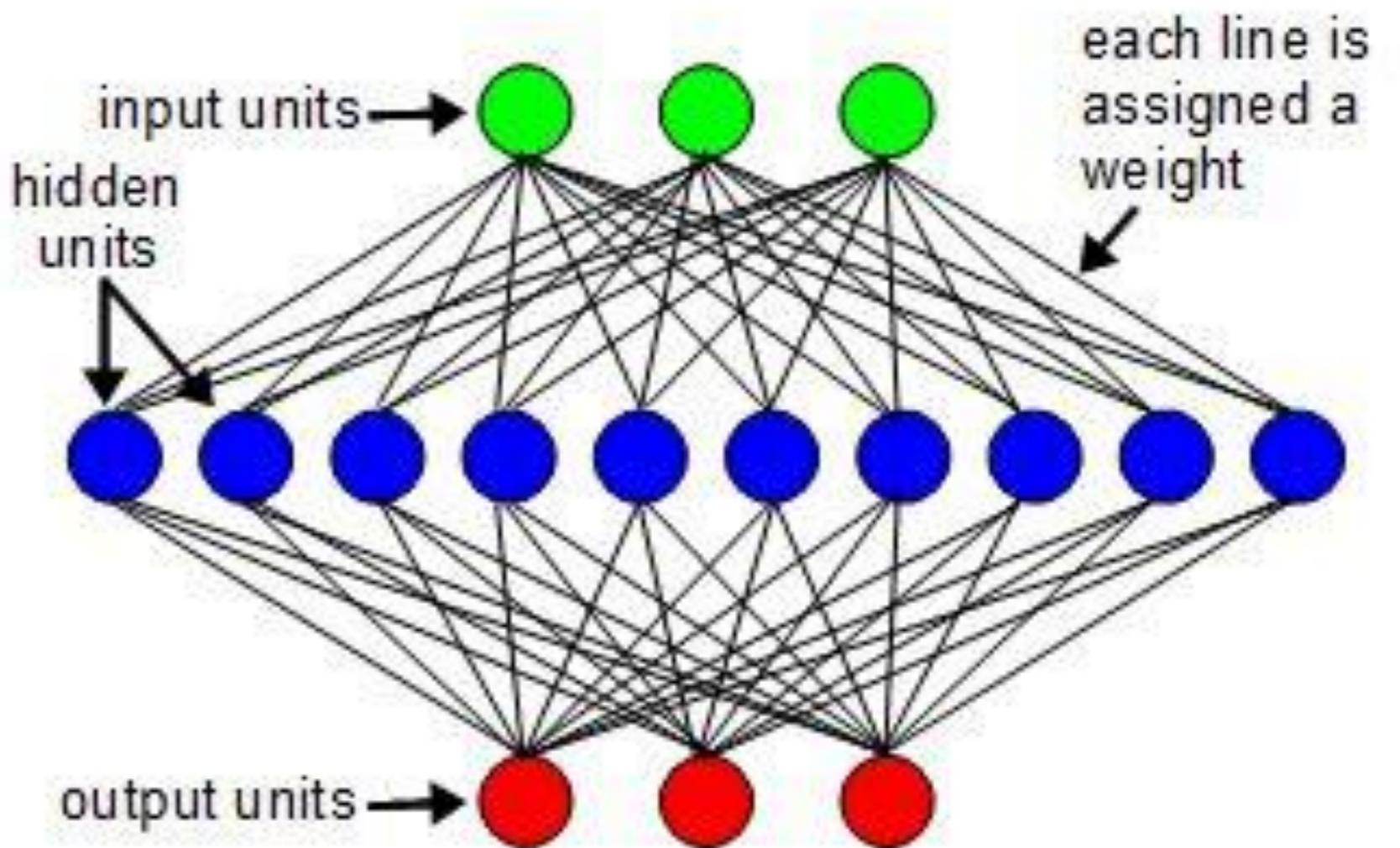


AI & ML in Intellistudy

Quizzes

- 3 Layered Neural networks to dynamically adjust the level of questions asked in the quizzes.
- Factors into consideration:
 1. Response time per question.
 2. Correctness.
 3. Average response time of all the other users.

- Learning Rate : 0.1
- Number of hidden units: 10
- Number of output units: 3
- Number of input units between 1 to 10





The objective is to use artificial intelligence to make the educational experience easier, better and more effective. A system that takes care of the needs of different students differently through the application of greater levels of individualized learning. In regular classroom learning, students differ in terms of their learning abilities and thus a common teaching source can't ensure proper learning of every student. Our system trains according to the abilities of different students differently and thus provides a custom and personal learning experience.

This platform provided to the students promotes learning together, in one's own time zone and pace. This kind of customized education helps reduce pressure on the student as well as improves performance. The interaction between peers while learning builds up confidence as well as makes learning a fun process.

It helps the student know the career path as that is one thing most of the students are always confused about. From what to study to how to study to interactive group chats, quizzes and assignments, it takes care of all the needs of the student such as recommended courses, progress rate, etc. The group chat is a medium for like minded people to share their thoughts and help each other out, to create a healthy atmosphere as well as motivate the student. The student can connect with the mentors of the courses as well for any queries. This will enable the student to be more open, interactive and grow along with others thereby improving the quality of education in the nation. Its not just the intellect that adds on but also improves the student's interactive skills.

Announcement

- Is Machine Learning the new revolution?
- New course coming up, stay tuned.
- No more about the bitcoin share market.

Index

Home / Login

Login	Sign Up
Username	
<input type="text" value="Enter email"/>	
Password	
<input type="password" value="Password"/>	
<input type="button" value="SUBMIT"/>	

Login



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Admin

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[Login](#)[Sign Up](#)

First Name

Last Name

Username

Email address

Password

Confirm Password

Gender

Date of Birth

Job

Qualification

[SUBMIT](#)

Sign up



INTELLISTUDY | MHRD | Government of India Ministry of Human Resource Development

COURSES PROFILE LOGOUT +A -A

CAREER PATH

Game Designer

Data analyst

Database administrator

Games developer

Information systems manager

IT consultant

Multimedia programmer

SEO specialist

Software engineer

Web designer

Application analyst

RECOMMENDED CAREER PATHS

INFORMATION SYSTEMS MANAGER

SEO SPECIALIST

SOFTWARE ENGINEERING

WEB DESIGNER

APPLICATION ANALYST

RECOMMENDED COURSES

Software Engineering

Systems analyst

UX DESIGN

Web designer

Web developer

Application analyst

Data Scientist

AI Researcher

EXPLORE
You Might find These Easy.

COURSE NAME

Course Description

COURSE NAME

Course Description.

COURSE NAME

You Might find these a bit challenging.

COURSE NAME

Course Description

COURSE NAME

Course Description.

Student Dashboard

BLOCKCHAIN

A blockchain, originally block chain, is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a cryptographic hash of the previous block, a timestamp and transaction data. By design, a blockchain is 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.

LEAVE COURSE

Leave this course.

JOIN GROUP

See what your friends are doing.

GIVE FEEDBACK

How do you think this course is?

LEARN MORE

View the course contents.



BITCOIN



BLOCKCHAIN SECURITY

Course Main

What do you think about the course?

Suggestions?

SUBMIT

DATA ANALYST

Data analysts collect, process and perform statistical analyses of data. Their skills may not be as advanced as data scientists (e.g. they may not be able to create new algorithms), but their goals are the same – to discover how data can be used to answer questions and solve problems.

LEARNING PATH PROGRESS

GO TO THE STUDY WORKSPACE.
Begin with this career path / Continue Learning

GIVE FEEDBACK
How well do you think this Career Path is Crafted?

LEARN MORE
View the Career Path Journey.

CAREER JOURNEY

1

DBMS
Intermediate

Terminology and overview. Formally, a "database" refers to a set of related data and the way it is organized. Access to this data is usually provided by a "database management system" (DBMS) consisting of an integrated set of computer software that allows users to interact with one or more databases and provides access to all of the data contained in the database (although restrictions may exist that limit access to particular data).

[GO TO COURSE](#)

2

DATA STRUCTURE
beginner

In computer science, a data structure is a particular way of organizing and storing data in a computer so that it can be accessed and modified efficiently.

[GO TO COURSE](#)

Course Path

Course Study Page

IntelliStudy

MY COURSES

PROFILE

BITCOIN

Bitcoin (฿) is a cryptocurrency and worldwide payment system. It is the first decentralized digital currency, as the system works without a central bank or single administrator. The network is peer-to-peer and transactions take place between users directly, without an intermediary.

FUNDAMENTALS OF BITCOIN

Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

1. Introduction

HOW CRYPTOCURRENCIES WORK??

GIVE QUIZ



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MY COURSES

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FUNDAMENTALS OF BITCOIN

HOW CRYPTOCURRENCIES WORK??



GIVE QUIZ



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GAUTAM YADAV

CHANGE PROFILE PICTURE

CHANGE YOUR USERNAME

gautam

JOB

Intern

QUALIFICATION

Bachelor Degree

PASSWORD

Enter New Password

Re-enter New Password

SUBMIT

Profile Page

BITCOIN

PASSING MARKS (8/10)

WHAT IS THE NAME OF THE FIRST ACADEMIC PAPER THAT DESCRIBED BITCOIN COMMONLY REFERRED TO AS?

- The Bitcoin Whitepaper
- The Origins of Money
- The Great Unraveling
- Fifty Shades of Grey
- The Bitcoin Constitution

HOW MANY MAJOR BITCOIN PRICE BUBBLES HAVE THERE BEEN?

- Three
- Six
- One
- None
- 13.5

HOW OFTEN DOES THE BITCOIN LEDGER RECONCILE?

- Every three months, quarterly
- Every day
- Every three minutes
- Every ten minutes
- It can vary depending on the Bitcoin Foundation's recommendation

WHAT IS THE FASTEST TIME YOU CAN SEND OR RECEIVE PAYMENT IN BITCOIN WITHOUT VERIFICATION?

- Instantaneously
- 2 minutes
- 10 minutes
- 60 minutes
- Six hours

WHICH OF THE FOLLOWING NAMES ARE NOT A FAN OF BITCOIN?

- Paul Krugman – Economist
- Marc Andreessen – Inventor of web browser
- Ashton Kutcher – Famous Actor
- Warren Buffet – Billionaire investor
- Richard Branson – Billionaire of Virgin Galactic

NEXT



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Quizzes

SCORE = 2

Your current level for this course is beginner

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Quiz Results

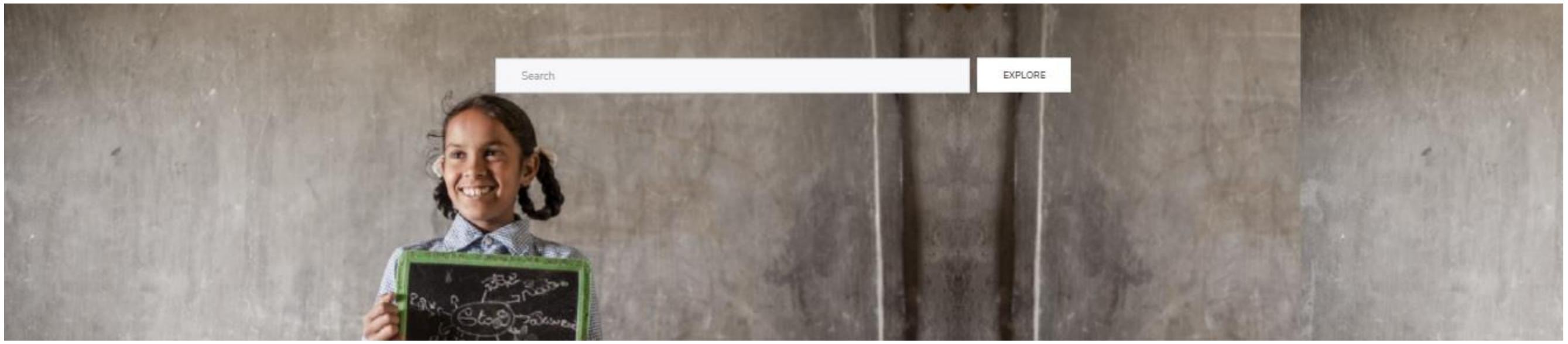


COURSES

Game Design	Computer Architecture	Data Structure	Computer Graphics
Cryptography	Object Oriented Programming	Algorithms	Web Development
Artificial Intelligence	Image Processing and Computer Vision	Data Science	Mathematics for Computer Science
Operating System	Compiler Design	DBMS	Game Theory
Digital Marketing	Machine Learning	Computer Network	

Mentor Dashboard

Career Path Recommender



The image shows a young girl with dark hair in pigtails, smiling and holding a chalkboard. The chalkboard has various hand-drawn sketches and text, including "DATA", "DATA SCIENCE", "DATA ANALYST", "DBMS", "SQL", "ERP", "MANAGEMENT INFORMATION SYSTEM", "DBMS", "SQL", "ERP", "MANAGEMENT INFORMATION SYSTEM", and "DATA". Above her head is a white search bar labeled "Search" and a white button labeled "EXPLORE".

CAREER PATH

Game Designer	Data analyst	Database administrator	Games developer
			
Game Designer	Data analyst	Database administrator	Games developer

RECOMMENDED CAREER PATHS

	Game Designer
	Database administrator
	Data Scientist

RECOMMENDED COURSES

Activate Windows
You Might find These Easy.
Go to Settings to activate Windows.

DBMS

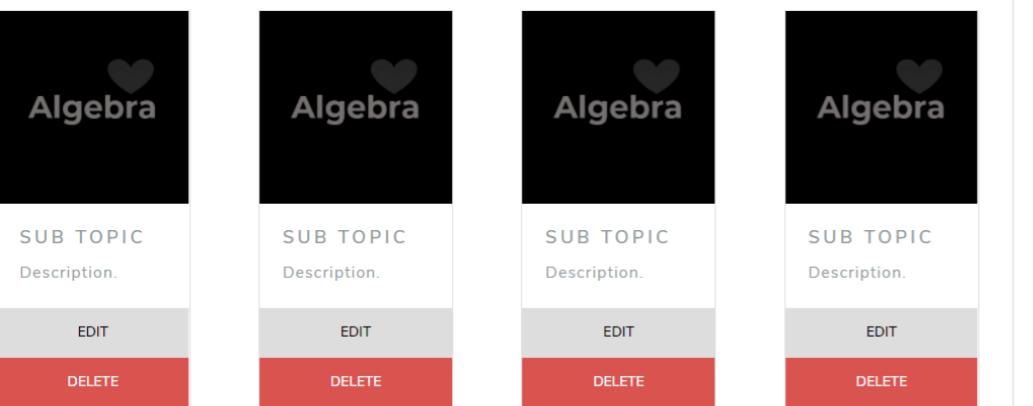
BLOCK CHAIN

Edit the course contents below.

BACK TO ALL COURSES
Manage other courses.

ADD CONTENT
Add new subtopics to the course.

PICK SUBTOPICS TO EDIT



ADD SUBTOPIC

Enter the Subtopic Name

Enter the Description

Difficulty Level

SUBMIT

STUDENT SUGGESTIONS

ARPIT JAIN

- I like the content.

ANKITA MAKKER

- Informative

GAURAV NAYAK

- Nice content to study from.

Course Editor

The screenshot shows the IntelliStudy platform's course management interface. At the top, there is a navigation bar with the brand name "IntelliStudy" and links for "DASHBOARD" and "PROFILE". Below the header, the main content area is titled "COMPUTER GRAPHICS". A sub-header below the title says "Edit the course contents below.". On the right side of the main content area, there are two buttons: "BACK TO ALL COURSES" (which also manages other courses) and "ADD CONTENT" (which adds new subtopics to the course). The central part of the page is titled "PICK SUBTOPICS TO EDIT" and contains a form for adding a new subtopic. The form includes fields for "Enter the Subtopic Name", "Enter the Description", and "Difficulty Level" (with a dropdown menu), along with a "SUBMIT" button. At the bottom of the page, there is a footer with links for "About", "Source | GitHub", and "Back to top".

IntelliStudy

DASHBOARD PROFILE

COMPUTER GRAPHICS

Edit the course contents below.

BACK TO ALL COURSES
Manage other courses.

ADD CONTENT
Add new subtopics to the course.

PICK SUBTOPICS TO EDIT

ADD SUBTOPIC

Enter the Subtopic Name

Enter the Description

Difficulty Level

SUBMIT

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Course Subtopic Editor

PROBABILITY

MATHEMATICS / CSE

Edit the Quiz questions below.

BACK TO THE SUBTOPIC
Manage the course material for this quiz.

ADD NEW QUESTIONS
Add New Questions to this section.

MULTIPLE CHOICE QUESTION

What is the Question?

Option 1

Option 2

Option 3

Option 4

ADD QUESTION

SINGLE ANSWER QUESTION

What is the Question?

Enter Correct Answer (Single Word)

ADD QUESTION

QUESTIONS IN THIS QUIZ

SUM OF ALL PROBABILITIES IS?

0
 1
 Infinite
 Not Defined.

DELETE

WHY DID THE CHICKEN DIE?

It got stuck in its own trap.
 There was a conspiracy of dark-chicken army.
 Committed Suicide.
 Arshad ate it.

DELETE

PROBABILITY OF HEADS IN A SINGLE TOSS OF A COIN IS?

correct Answer comes here

DELETE

Edit Quiz for a course.

Add Career Path

Add Course

Add Announcement

ADD CAREER PATH

Career Path

Data Scientist

Choose Course

- Machine Learning
- AI
- Data Analytics
- Data Scientist
- Graphic Designer

DONE

EXISTING PATH



Data scientist UI/UX Developer Data
Analyst Graphics Designer

X

Admin Interface



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Add Career Path

Add Course

Add Announcement

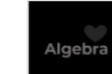
ADD COURSE

Course Name

Algebra

ADD

EXISTING COURSES



Course Topic

X

Admin Interface

[About](#)[Source | GitHub](#)[Back to top](#)

Add Career Path
Add Course
Add Announcement

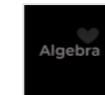
ADD ANNOUNCEMENT

Accouncement

New Content added in Algebra section.

ADD

CURRENT ANNOUNCEMENT



Accouncement

X

Admin Interface



Final Verdict



- “This platform provided to the students promotes learning together, in one’s own time zone and pace.
- This kind of **custom-tailored education** helps reduce pressure on the student as well as **improves performance by personalizing the platform as per their caliber.**
- **Its recommending systems help remove the confusion that the young minds mostly face by helping them choose the courses that can help them choose their right career path.**

Commercial Viability



- **Different Approach** - Intellistudy doesn't mold the student according to the structure of the course.
- **Always free of cost** - Intellistudy uses all the open-source technologies. Education must always be free of cost.
- **Diversity** – Intellistudy is extremely versatile and dynamic and thus can be extended to all age-groups as well as cultures.



Thankyou