



## HERITAGE INSTITUTE OF TECHNOLOGY PRESENTS

## ARHIVYAKTI



The 2020 Edition

## FROM HOD'S DESK

The unpredicted COVID-19 pandemic prevailing around the globe has brought about a new set of challenges for mankind. Humans are confined to their homes and are unable to roam free. The global economy is falling apart and it will not be too wrong to say we are falling prey to chaos. Among the worst hit sectors are IT industries, education and trade. Schools and universities are using online platforms to continue academic activities as far as possible. Meetings, conferences and webinars are being held at the same time abiding by the rules of social distancing. As law of evolution goes, we must confirm to survive this unforeseen disaster and innovate new ways to tackle the hardships.

When the world is going through such a major crisis it is difficult to stay positive all the time. But, then again we are undergoing a major transformation and evolving with time. Such troubled and dreary times inspired us, even more, to release our E-Magazine 2020 edition bringing a little relief in the middle of this mayhem. I would like to thank our students and

faculty members who have worked quite hard to present this to you and I

hope you enjoy reading it.

Prof. Siuli Roy



## FROM OUR MENTOR

#### "Welcome to the 2nd edition of "Abhivyakti".

Today, life has changed, daily routine has stopped to exist. Confined.. Confinement.. there are no words to express the loss faced by all of us. However, there is a saying: "Trust the wait, embrace the uncertainty, enjoy the beauty of becoming, when nothing is certain, anything is possible." One day, sitting beside the small window of my room, I felt the beauty of the surroundings - which remained unseen. Suddenly, a realization awakened me

I was running and running
From morning till night
Suddenly, a voice said ......
STOP dear MOM ...... STOP!
Just look at your little star.
She is growing,
She is growing day by day.
One day, her childhood would be gone.
She needs YOU, your presence.
She needs to share...
She needs your care....

From morning till night
Suddenly, a voice said ......
STOP dear DAUGHTER ...... STOP!
Just look at the older members
Of your family,
Just look at your parents.
They are growing old ... day by day.
Look their days are now countable.
They need YOU, your presence.
They need to share...
They need your care....

I was running and running

I was running and running from morning till night
Suddenly, a voice said ......
STOP dear FRIEND ....... STOP!
Just look at the NATURE,
Feel the sky ..... Smell the sea
Feel the calm breeze ..... from the tree.
Save them.... Heal them....
It needs you....
It needs your care.... "



Prof. Rituparna Sinha

## EDITOR'S NOTE

#### "DREAMS are not the ones that you see when you sleep, but the ones that don't let you SLEEP."

As quoted by Dr. APJ Abdul Kalam,one can experience it in real. Making of this magazine required tremendous efforts from a number of people, both professors and students. And finally, it gives me immense pleasure to announce that the Department of Information Technology is ready with its 2nd edition of the Students' Magazine "ABHIVYAKTI".

With the passage of time in this home quarantine, it has started to feel that "Corona" is about numbers and numbers never end. But the way our country and the whole world is fighting this pandemic, together, is commendable. Sitting at homes, our empty minds were turning into devils' workshops, so we thought, why not do some Carpentry. This magazine is the result of manufacturing going on in a number of such workshops, The only thing to mention, our minds were not Devilish, but Visionary.



Magazine is a simple device to induce people to Art and Literature, to Knowledge. Art and Literature have been an integral part of our lives since time immemorial. Our's is a small effort to bring to our readers a perfect blend of art and literature along with new and improved researches and informations on various intellectual topics. We aim to provide a reminiscing experience worth of time and quality. A huge "Thank You" to the readers in advance for investing their valuable time and efforts.

Anshu Priya (IT 3rd Year)



- 1. Tone of Color
- 2. Vibes of Thought
- 3. Trash To Treasure

\*\*\*\*\*\*\*\*

- 4. Sharing is Learning
- 5. Click View

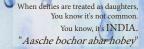




#### In our life,

The path we choose is the decision we make;

The colors we put is the cake we bake.







Change, like Sunshine, can be a Friend or a Foe; A Blessing or a Curse,

A Dawn or a Dusk.





... and every morning, the beauty of sun tells us WHY it is important To keep rising.

Going to the Mountains Feels like Going Home.





Peace finds its way,
Into the chirping of the birds
Flowing of the rivers
Smells of the soil.

The World only exists
In your Eyes.
You can make it as big or as
small as you want.





"The woods are lovely, dark and deep. But I have promises to keep. And miles to go before I sleep,..."





Drawing Credits: Prof. Samadrita Roy



Only if one could get their childhood back, at the cost of any amount of money.



Ever tried closing your eyes and sitting in a quite place? That's PEACE.

Drawing Credits: Supriya Gurung (IT 2nd Year)



Most of us
Learn how to DRAW
From being bored
In CLASSROOMS.

कोमल है, कमज़ोर नही तू। शक्ति का नाम ही नारी है।।

You are soft, But not weak. Power is the other name of WOMAN.



जग को जीवन देने वाली, मौत भी तुझसे हारी है।।

She who is the source of life, Even against death You marked Victory.

Colors must fit together as Pieces in a Puzzle.. as Cogs in a Wheel.. as Fritters in a Drizzle.. as Photos in a Reel..



Drawing Credits: Ritika Gurung (IT 3rd Year)



Our greatest glory is not in never Falling, but in Rising everytime we fall.







Day is beautiful with the Sun, Night is beautiful with the Moon and Stars.
Let's take a moment to appreciate the beautiful creations of GOD.



We once made a BRIDGE between Us and Nature and now

NATURE is demanding a Life Boat.



Nature always tells a story. It's we who never stay And Listen to Them.



Beauty lies in the eyes of the Beholder And in the strokes of a Painter And in the art of the Almighty Creator



#### EARTH is LOCKED.

Corona is leaving the Earth.

Credits: Shubhomita Samaddar (Std. 3), South Point School



The picture is self-explanatory. Please take a moment and appreciate the message and the beauty of this ART.

Credits : Ritik Bhadani (IT 2nd Year)

#### Digital Drawing

The next generation of brushes and colors...





Drawing Credits: Anwesha Patra (IT 3rd Year)



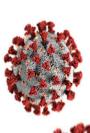


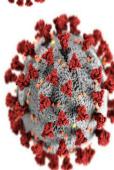


সংকটে নীলগ্রহ
বিশ্ব মেতেছে ধ্বংসলীলায় হচ্ছে মানুষ শেষ,
Covid আজ মহামারী বটে জাত- ধর্ম নির্বিশেষ।
পিটিয়ে মেরেছো সেই লোকটাকে গোমাংসের অজুহাতে কত মায়ের কোল শূন্য তোমাদের জেহাদিতে।
যাদের জাতকে মা বলে ডাকো - তারাই পায় ভয়;
পশু নয়,মানুষ ভেবে ভালোবাসো তাদের- আটকাতে অবক্ষয়।
এসব তুমি এবার কর বুকের পাঁজর শক্ত,
ভয় ধরেছে তোমার মনে, দৃষিত হবে রক্ত।
হিংসা কখনোই সমাধান নয় - নীলগ্রহ আজ শান্ত;
এতদিন তোমবা এটা বোঝোনি? Covid করেছে ক্ষাম।

প্রিয়জন আজ দূরে সরে যায়,মনে লাগে ভয় পাবোনা কি আমরা তাদের কাছে -শেষ মৃত্যুশয্যায়? দূরত্ব আজ বজায় থাকুক প্রিয়জনদের থেকে, আজ আমাদের এই লড়াই ওই প্রিয়জনদের বাঁচাতে। Covid আজ সাহেব মশাই, মোরা হলাম শোষিত; সাহেবের বিরোধিতার করলে বন্ধু, মৃত্যুর পথ প্রশস্ত। নীলকর আজ স্যানিটাইজার নিত্যসঙ্গী মোদের, মাস্ক ব্যবহার আবশ্যিক, সাহেবের থেকে বাঁচতে। সাহেব আজ শত্রু হলেও,প্রতিবেশী আপন; নিরাপত্তা বজায় রেখে করো তাদের যতন। আজ তুমি ছুঁড়ে ফেললে - সাহেব তোমায় ও ধরতে পারে, বিবেক বুদ্ধি কাজে লাগাও - নইলে প্রতিবেশী কিসের তরে? ভালো থাকুক , সুস্থ থাকুক - আমার নীল গ্রহের মানুষ; একদিন সাহেবকে পরাজিত করে আমরা ওড়াবো ফানুস।।

Pabitra Jiban Maity (IT 3rd Year)





চরিত্র মন্দের ভালো সম্প্রীতি গহের লক্ষ্মী নির্যাতিতা, কে ভালো? কে মন্দ? বিভাজন আজ ধর্মের নামে,ভাঙ্গছে সংবিধান, রাস্তার লক্ষ্মী গণধর্ষিতা I ব্যেছে সবেতে দন্দ জ্বলছে আমার ভারতবর্ষ,চাইছে ফিরে প্রাণ | কে ভুল? কে ঠিক? গর্ভের লক্ষ্মী রক্তের স্রোতে, ক্যাবের বিলে ছ'টি ধর্ম, একটি জটিলতা, সবই আপেক্ষিক | মাটির লক্ষ্মী নিয়ে ব্যাস্ত, ভারতমাতা ঠেচিয়ে বলে - "ধর্মনিরপেক্ষতা"... | আমোদ - প্রমোদে 📙 করি সবাই মন্দের বিচার, প্রতিবাদের কারণ সঠিক,রাস্তা বব্দ ভুল, আমরা কি জানি? মূর্ব রাজার মূর্বামিতে,মানুষ ওনছে মাওল I আমাদের মন্দার হার?? রাজনীতি আজ ভোটব্যান্ত এর রাজা রানী চপ্

## Pabitra Jiban Maity (IT 3rd Year)

রাজ্য দেশে অবস্থা চরম - সবই ধ্বংসস্তপ

বন্ধ হোক হানাহানি আজ ফিব্ৰুক দেশে শান্তি,

বৈচিত্রাময় ভারতবর্ষ, বজায় রাখক সম্প্রীতি I I

#### আমি কী চাই?

তুমি ধারাবাহিকতা মানো না? ও তাহলে তুমি পালল বটো ।

তুমি সামাজিক বাপার এ প্রতিবাদ করতে ভালোবাসো ? তাহলে তুমি পরিবার বোঝো না ।

তুমি কি তোমার তাদের নিয়ে হপ্ত দেখতে ভালোবাসো? তাহলে তুমি সামাজিক নও ।

তুমি কোনো স্বপ্তই দেখতে চাও না? তাহলে তুমি লক্ষাহীন একজন ।

তুমি কি তোমার পহন্দ জানাতে চাও ? তাহলে তুমি অপরাধী ।

তুমি চুপ থাকতে চাও কি? তাহলে তোমার প্রতিবাদের ভাষা নাই, বাহবা দেওয়ার ক্ষমতা নাই ।

তুমি আমার ভালোর জন্যে আমায় বোঝাতে চাও? তোমার সীমা অভিজম করার অধিকার আছে?

না বুলিয়ে তুমি কি নিজের মতো থাকতে চাও? তুমি না বক্ত হার্থপর ।

সধার কথা রাখতে গিয়ে নিজের চাওয়া আজও পাওনা খুঁজে,
অনেক হলো সধার ভাষা,নিজের ভাষনা পাণ্টে যাক।
হাাঁ তুনি, তোমার বলছি অনেক তো শুনলে কথা, কথা শুনেই কাটল নিন,
সুদুরপ্রসারী জীবন তোমার করে তোলো একটু রঙিন।

আমরা সবাই সবার দায় বন্ধতার কাছে মাথা নিচ করতে করতে আমার আমি টাকে ভাবতে ভলে গেছি,আজ একটা প্রশ্ন করন "আমি কী চাই?"



#### INTROVERT

Hey there, can u listen to that drizzle outside the window?

I do too.

I too, yes, i too 'like' to feel the rain, 'smell' the soil, 'touch' the air, sipping my bru.

Hey there, can you listen to that melodious voice she sings in? Her notes all charged to take your minds down and throb your hearts out. I hear too.

I too, yes, I too want to play, play with the lyrics of love and dismay, step up the stage and sing all

I try to, but I miserably fail to do.

No, no my shoes are no different, seems the sole gets struck beside the stage, No my legs are not shaky, but trust me, facing people is not everyone's piece of cake.

Hey there, can you listen, can't u really listen? Oh come on, try to listen for once
They need no stethoscope to hear, they are loud enough to be heard,
My heartbeats, so agitated, finding me in front of a bunch,
In front of a bunch of people that they can shout no louder,
To get me free from all those range and let me be where I can silently sigh.

No, no i dont have attitude issues nor do i pretend being a self centred person, Its just that it is way too gruelling, for me, to break down the eye.

How do i explain? How do i explain to you, that,

In this world with you people seeking impeccability and excellence, I am 'inchoate',

And each time i wish to touch perfection jilting my fears in front of you,

I see 'Expectations', followed by silence screeching "Y are too late".

No, no i am not late, nor am I down,

I have my own name, stop using your pronoun,

Despite clamouring "the vanquished", you better cropel "come on, you can do it, get up, rise from the

Listen and remember till you breathe your last,

I might not be able to earn a cachet in my social circle, do hell with your mind's plague & soul's rash,

I have been and will always be, bloated with scads of my hard earned panache.

Anshu Priya (IT 3rd Year)



#### Just trying to express .....

"I am using Lizol bottles, coffee jars, juice bottles, egg shells, oil containers, cartoon, jute, colour etc, just trying to give them an attractive look."

"When you support Handmade, you are not just supporting A Person, Small Business, Family, Or Economy; You are purchasing a small part of an Artist's Heart".

































Credits: Prof. Chhanda Dey



## AIR WRITING

An Interactive Approach to Human-Compter Interaction

While the most conventional input media for devices are keyboard, mouse and touchscreen, they are often subjected to multiple physical constraints which might render them unsuitable for certain scenarios. With the emergence of research in the fields of augmented reality, gesture, and motion recognition we are headed towards a more natural and immersive human-computer interaction medium. This has allowed users to perform certain actions (unlocking devices, home automation, etc.) using simple hand/body gestures without the need of any peripheral equipment. However, these simple gestures are insufficient for complex actions like text input.

Air-writing, defined as the tracing of linguistic characters in a three dimensional free space using hand movements over six degrees of freedom, is a promising technique towards making text inputs using motion recognition in a more natural, and peripheral independent way. Apart from its heavy application in the field of augmented reality, air-writing has the potential of having application in educational and medical fields where it can be used as a substitute for pen-and-paper based writing for individuals with compromised physical abilities.

To continue reading about the challenges and future work, <u>CLICK HERE.</u>

Adil Rahman (IT 4th Year)

## RELATIVITY

from Scientific and Philosophical Perspective

 ${f A}$ lbert Einstein's theory of relativity is the greatest invention in the field of science as considered till date. It has it's essence not only in the field of abstract theoretical physics and maths, but it equally plays a dominant role when revealed from the philosophical point of view. It was 1905 which, in true sense marked the renaissance period of the scientific era. This annus mirabilis year was indeed symbolic in the life of the incredible man, who published four groundbreaking papers on Photoelectric Effect, Brownian Motion, Special Relativity and the equivalence of mass and energy. It's author was a youthful Albert Einstein. Among the four, Special Relativity indeed deserves a special mention. Long before Einstein, Sir Issac Newton had explained the effects of gravity, but he never explained the mechanism for how it worked. Although Einstein's theory of Special Relativity did not have much implications on newtonian gravity, but it was indeed a stepping stone for Einstein to understand gravity. Through this paper, he declared the ground truth that the two entities space and time are inter-related, and one would never exist without the other

He explained his ground truth in the context of an important factor, the speed of light. He proved through his experiments that the speed of light is always constant and the magnitude of it is 3\*108 metres/sec. This factor came into focus, so much, as it explained the time dilation effect. This effect shows that, the speed of an object travelling through space is inversely proportional to the speed of the same object travelling through time. Einstein explained this effect more clearly by illustrating two examples, one being the clock-mirror example and the clock-spaceship example, being the later.

To continue reading about the illustrations, **CLICK HERE**.

Dipyaman Mukherjee (IT 4th Year)

## All You Need To Know About

## BLOCKCHAIN BASICS

Bitcoin is the basis from which ethereum was born, Bitcoin is a decentralised digital coin(money); Before bitcoin there were a third party who communicated with two interacting entities. Each bitcoin transaction is validated and confirmed by the bitcoin network, there's no single point of failure.

What else can be decentralised? Voting, real-estate transfer record, etc.

Blockchain (by product of Bitcoin technology) technology was created fusing already existing technologies like cryptocurrency+proof of work+decentralised network architecture, which can reach decisions without a central authority.

There was no blockchain technology before Bitcoin was invented. Bitcoin is written in Turing incomplete language, makes it understand a small set of orders. More complex network system will need more complex programming language.

Ethereum was first proposed in late 2013 and later brought alive by Vitalic Buterin in 2014.

To know more about this topic, CLICK HERE.

Anwesha Patra (IT 3rd Year)

### **CLOUD GAMING**

Is it a viable replacement for PC and Console Gaming?

For the past decade, companies have been utilizing their resources for conducting research on a particular field, i.e, cloud gaming. This technology is derived from cloud computing, which involves availability of files and other resources from a server instead of the client's own system. Similarly, cloud gaming allow users to stream games without actually having to store the game files in their own system. Notable examples include PlayStation Now, and the upcoming Stadia and xCloud. Let us dive deep into the details of this technology.

Cloud Gaming, in simple terms, is a "gaming on demand" service, similar to video-on-demand. Here's how it works. The company providing such service owns and maintains a server computer or a group of server computers. These servers store the game files for all the games that are part of the particular cloud gaming service. An user subscribes to the cloud gaming service either for free, or by paying a monthly/yearly subscription fee. Through their device, the user logs in to the cloud gaming service via an application client or a web browser.

To learn more about Cloud Gaming and its features, <u>CLICK HERE</u>.

Riko Banerjee (IT 3rd Year)

# VIDEO GAMING for DIFFERENTLY ABLED

First things first, video gaming is for everyone. And I mean everyone, regardless of their nationality, race, religion, sexual orientation, and even gaming preferences. A person venturing through Helheim in Hellblade: Senua's Sacrifice on a PS4 is no less of a gamer than someone pulling off headshots in CS:GO on a PC. The same goes for Switch and Mobile gamers. Now we might come across one of those not-so-friendly "alpha gamers" online with serious attitude problems but in general, the gaming community is an accepting society. It has always welcomed new and budding gamers with open arms without factoring in any of the above mentioned criteria. And that is precisely why despite all their difficulties, even people with disabilities do not hesitate to be a part of the global gaming community. As you've realized by now, I am knocking on a very particular door here, i.e, video gaming for the differently abled people.

Even though we don't have an exact figure stating the number of disabled gamers in the world, a survey conducted by PopCap in 2008 has shown that 20% of players who play casual games have "some form of impairment related to physical, mental, or developmental disability." That's 1 out of 5 people we're talking about! Another research conducted by the Accessibility Foundation in Utrecht, The Netherlands, has shown that 92% of gamers with disabilities play video games despite all the difficulties they go through.





Do not judge by appearances, a RICH HEART may be under a POOR COAT.





Sometimes, CLOUDS come floating. No longer to carry rain or usher storm,

But to add COLORS to your sunset sky.

Dark clouds always give good rains. Dark days always give good lessons. NEVER LOSE HOPE.





You never know what could be on the OTHER SIDE..

And when thou art weary,
I'll find thee a BED
of mosses and flowers
to pillow thy HEAD.
Old PLACES have SOULS.





Bridges and Rails, too, are the children of EARTH and SUN.

Climb up some hills at Sunrise.
Everybody needs perspective
and you'll find it
THERE.





If your
Train of Thought
is going nowhere,
Switch TRACKS.

Sharing is Caring.
But it also
reduces the BURDEN
and
doubles the HAPPINESS.







The way blue ocean water is the reflection of the SKY. Our actions are the reflection of our THOUGHTS.

Be like water. Show others the reflection of their actions with COOLNESS.





Monuments are not cemented bricks.

They are animate with the feelings of artist etched to them.

They are the grappling irons that bind one generation to another.





Seek wisdom in books, rare manuscripts and cryptic poems if you will, but seek it out also

in simple stones, and fragile herbs, and in the cries of wild birds.

Listen to the whisperings of the wind and the roar of water if you want to discover MAGIC

for it is here that the OLD SECRETS are PRESERVED.



We might think we are Nurturing our Garden, but ofcoarse, it is our garden that is really nurturing US.

"Bee stings are painful", man said. But then, a FLOWER interrupted.





For Bee,
Flower is the fountain of LIFE.
For Flower,
Bee is the messenger of LOVE.





Marigold symbolizes COMFORT. Rose symbolizes LOVE.

No matter if you are a MARIGOLD or a ROSE,
what matters is that you are FLOWERING.



GOD loved the birds and inveted TREES.
MAN loved the birds and invented CAGES.



The Sky is the Limit if you have a ROOF over your HEAD.

There is nothing as powerful as A MOTHER'S LOVE There is nothing as healing as A CHILD's SOUL





CALCUTTA is Beautiful. Whenever you place a CAMERA, you get a VISION.





Helium in the balloon will end soon enough, and so will CHILDHOOD. Still, nobody can remain uncheered with BALLOONS

#### Photo Credits: Pabitra Jiban Maity (IT 3rd Year)

## ACKNOWLEDGEMENT

Every project, like this E-Magazine, owns debt to the predecessors, the professors and the participants. I gratefully acknowledge my deep indebtness to all of them.

The second edition of Students' Magazine will throw some light on the wonderful and raw talents budding insde the minds of people who happen to be an integral part of our department, us.

And I really hope you people enjoy every section from painting to writing to craftworks to photography to learning some new and interesting works by our own fellowmates.

I take immense pleasure to acknowledge the efforts of the people who helped me in making this E-Magazine a success.

Primarily I would like to thank **Prof. Rituparna Sinha** for her esteemed efforts, valuable advices, patience and time inorder to make this venture a reality, even in these tough times when the world is dealing with one of the deadliest pandemic.

I would also like to pen down the names of all the participants without whom the whole efforts would have been meaningless.

I. <b>Prof. Chhanda l</b>	Dey
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2. <b>Prof. Samadrita Ro</b> j	y
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3. Shubhomita Samaddar (Std-3, Our Youngest Artist)

٠.	Adil	Kahman			(-	łtł	ı '	Year	r
			_	_	- 2				

5. **Dipyaman Mukherjee** (4th Year) 6. **Anshu Priya** (3rd Year)

7. Anwesha Patra (3rd Year)

8. Pabitra Jiban Maity (3rd Year)

10. Riko Banerjee (3rd Year)

11. Ritika Gurung (3rd Year)

12. Rohan Thapa (3rd Year)

13. Abhishek Sharma (2nd Year)

14. Karanyeer Singh (2nd Year)

13. Ritik Bhadani (2nd Year)

3. Ritik Bhadani (2nd Year)

14. Smaranik Bag (2nd Year) 15. Supriya Gurung (2nd Year)

16. Vikash Gope (2nd Year

# Thank You!!

**Team IT**