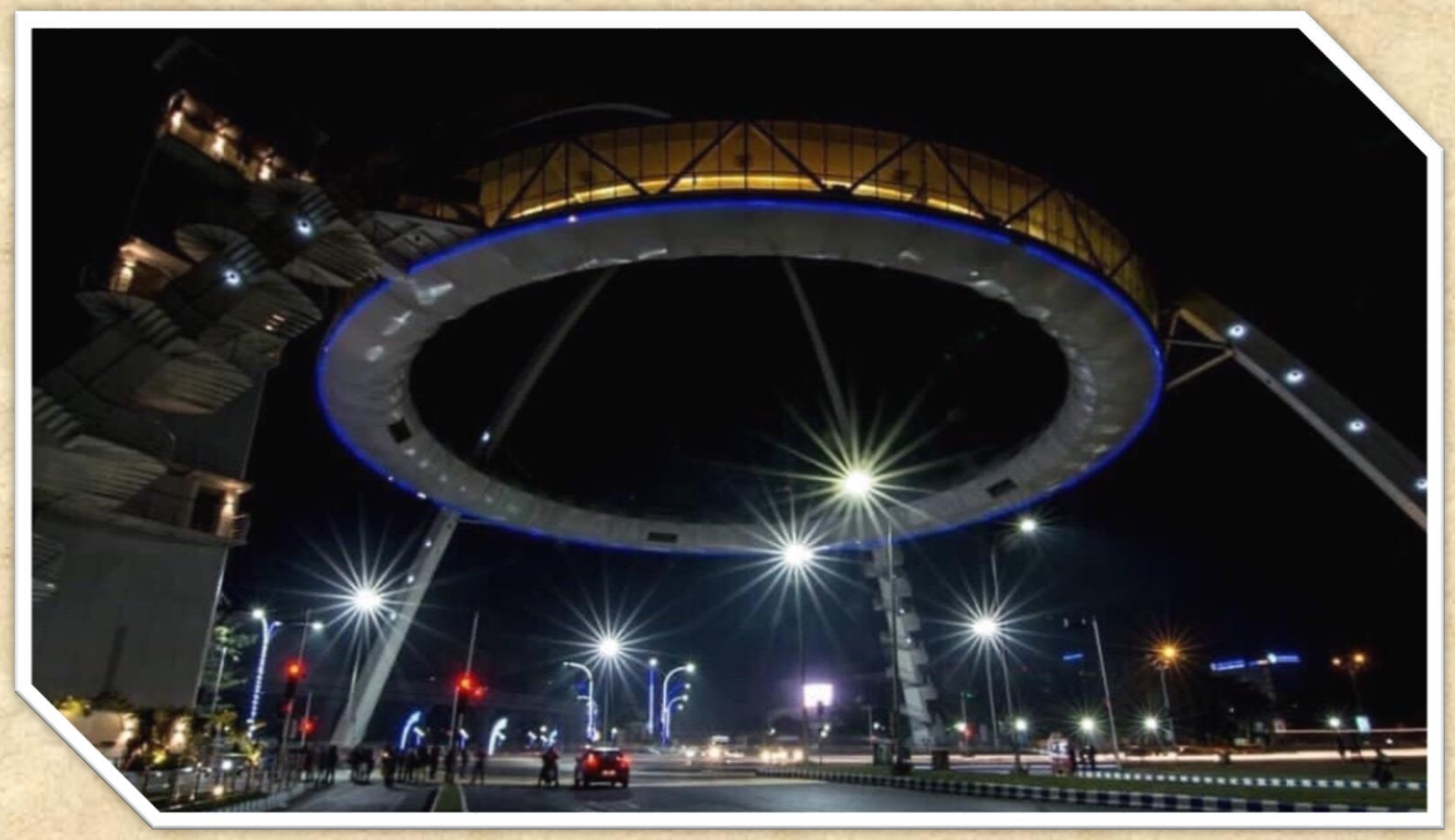
MAY 2019

DEPARTMENT OF CIVIL ENGINEERING

PRESENTS

K-ONSTRUCTZ

Build Beautiful .....



VISION

Developing motivated, skilled and highly competent Civil Engineers to excel in Education, Research, Entrepreneurship and Technological services, so that the department as well as the Institute will be recognized high in a global scenario.

MISSION

To empower the students with broad and in-depth knowledge in Civil Engineering fundamentals and their applications in practical as well as professional fields to meet socio-economic challenges.

To educate the students in the latest technologies in Civil Engineering, imbibe in them human values, self-confidence, team work and independent thinking in solving diverse problems in the related field so that they can serve the society.

To achieve international recognition by developing professional Civil Engineers, offering continuing education and interacting with industries by emphasizing research and development.

From HOD's Desk...

I am glad that a departmental magazine "K-onstructz" has been published for all. I must appreciate all the students and the faculty members who worked tirelessly and within a tight time-frame to achieve this.

This magazine will serve as a platform for all the students of CE department to hone their skills in literacy, poetry, innovation and research ideas. The staff will contribute to make it more interesting in terms of emerging technologies and lateral developments.

I am sure it will be everyone's delight.

Prof. (Dr.) Tapas Sadhu

Head, Department of Civil Engineering.

SPECIAL MESSAGES

Esteemed Faculty Members

Message from Prof. (Dr.) Sarmila Sahoo,

Departmental Coordinator

"I highly appreciate this initiative by our students for the first time. Our E-magazine K-ONSTRUCTZ publishes the research, development and ideas of technological advancement and encourages the creative side of our students. I do hope that they will continue with this. "

Message from Prof. (Dr.) Subhashankar Chowdhury

"I would appreciate the students from our department for their enthusiasm .... You are the person who can change the world. You have a big responsibility to make the world better. I know you can do this very well. All the best to my dear student."

Message from Prof. Chandrima Bhadra

"I would highly acknowledge the students for this great initiative of publishing the departmental E magazine, K-ONSTRUCTZ . Also I would like to appreciate the innovative write-ups, poems, paintings and photos contributed by the students. Best wishes to all of you."

Message from Prof. Saurav Kar

"Certainly I would say this is one of the greatest initiatives taken by our department. I whole heartedly thank the total team of students and all the faculty members of our department....."

Message from Prof. Puja BasuChaudhuri

"I would appreciate the initiative taken by our Civil Engineering Department and especially which cannot be fulfilled without help of our beloved students. Thank you the team for your enormous effort. Hope we can publish many more e-magazines in future with help of you all. Best wishes....."

Message from Prof. Pritwish Saha

"Wishing all the members and students directly or indirectly associated with K-ONSTRUCTZ a grand success. Hope K-onstructz will create a revolutionary footprint towards the up gradation of Civil Engineering department of HIT-K"

Editor's Message

Dear Readers,

It gives us immense joy and satisfaction to finally introduce our very own Civil Department's E-magazine "K-CONSTRUCTZ".

Just like the Gods and the Asuras churned the ocean of milk to extract the nectar, we have tried to churn out the creativity from our department. The best thing about this magazine is that it represents the creative side of HITK students to a fair degree- something that we think we all need to reconnect with. It includes report, poem, photography and much other stuff.

We hope you enjoy reading the magazine. Any suggestions or criticisms will be most welcome.

Thank You.

Editors-

ANWESHA DUTTA

(2nd Year, Sec-A)

SOURAV SAHA

(2nd Year, Sec-A)

CONTENTS

CLOCK TOWER IN THE CITY OF JOY

Yes it looks like a big ben replica but it has a significance of its own.

With the help of South Dum Dum municipality, a clock tower, which is a replica of the Big Ben in London, has been finally built at Lake Town. The watchtower stands tall at 30 metres on the main road of Lake Town, falling short by a long distance from the original Big Ben that is nearly three-times taller. We are in awe of the structure, and applaud the work that went into the construction of the clock tower.

-Submitted by:
Dipendu Ghosh(CIVIL SEC-A 3rd year)

BATCHING PLANT

-Submitted by: Arghyadeep Baneerjee

(2nd Year, Sec-B)

WHAT IS BATCHING PLANT?

A concrete plant also known as a Concrete Batching Plant is a device or assembly that combines various ingredients to produce concrete.

TYPES OF BATCHING PLANT

- Dry Mix
- Wet Mix

DRY MIX BATCHING PLANT

It is generally used to produce ordinary and specific mortars, which includes plastering mortars, which includes plastering motor, tile, adhesive motor, wear - resting floor mortar etc.

WET MIX BATCHING PLANT

- A wet mix concrete batching plant combines some or all off the basic ingredients (Including water) at a central location in a concrete mixer.

- The mixer can be single or double shaft type, pan type or a planetary type.

EQUIPMENTS REQUIRED IN A BATCHING PLANT

- Storage of materials:- Silos, Containers & Bins.
- Batching arrangement.
- Measuring and recording instrument.
- Mixing machine.
- Control system.
- Conveying System --- Conveyor belt, screw convey.
- Electrical, Hydraulic & Pneumatic drives.
- Transit mixture to transporter mixed concrete.

APPLICATIONS

Concrete Batching Plants are widely used to produce -

- **Quick Concrete**
- **Hard Concrete**
- **Large Building Works**
- **Road Work**
- **Bridge Works**

BENEFIT OF CENTRAL CONCRETE BATCHING THEN READY MIX CONCRETE

- Central batching plants are more powerful
- It is well mixed
- No Transportation cost
- Quality of Concrete is high

ADVANTAGES

- A centralized batching plant can serve a wide area
- Better quality concrete is produced
- Elimination of hiring of plant and machinery
- Wastage of Basic materials is avoided
- Time required is greatly reduced
- Noise and dust pollution at site is reduced

SAFETY PRECAUTIONS

- Careful of heavy materials
- Avoid contact between concrete and our skin
- Ensure that electrical wiring is connected and secure

CONCLUSION

Concrete batching plants are widely used in producing various types of concrete in different types of construction works. So it is an important equipment to produce concrete in large and medium construction works.

TUNNEL ENGINEERING FUNDAMENTALS

-Submitted by: Arghyadeep Baneerjee

(2nd Year, Sec-B)

INTRODUCTION:- **The underground passages which are constructed without removing or disturbing the ground surface are known as tunnels.**

- **The branch of civil engineering which deals with the design, construction and maintenance of tunnels is known as Tunnel Engineering.**

PURPOSE OF TUNNELING

- **Carrying public utilities like water, gas or railway line, across stream or mountain in cheaper way.**
- **To avoid dangerous open-cut adjustment Control traffic.**
- **To avoid tearing up of expensive pavements.**
- **To protect from weathering effects.**
- **Low maintenance cost.**

HISTORICAL DEVELOPMENT

World's first tunnel

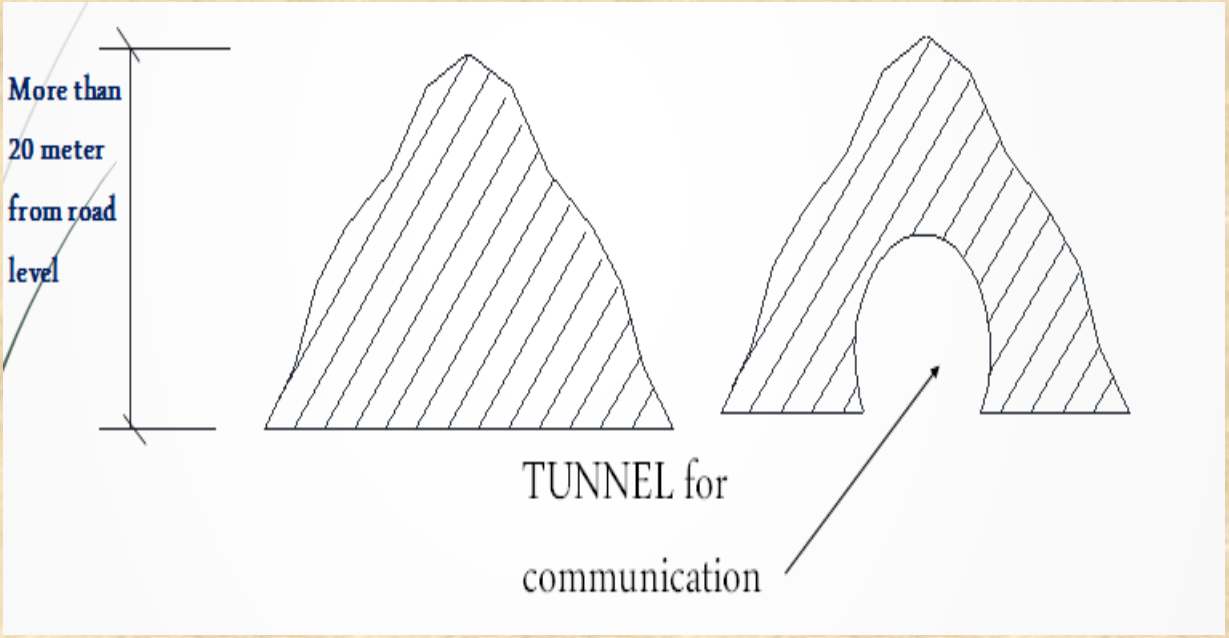
- **Made by : Egyptians & Babylonians**
- **Location : between two buildings**
- **Length : 910 m**

World's first submarine tunnel

- **Made by : Egyptians**
- **Location : Under Euphrates river**
- **Between Royal palace to temple of Jove**
- **Length : 1 km**

- THUMB RULE OF TUNNELS:- **When the depth of open-cut for reaching the other side of the hole is more than 20m and it is costlier to construct and maintain it than a tunnel.**

(A) CLASSIFICATION



(1) BASED ON PUROPSE-

Traffic tunnels-

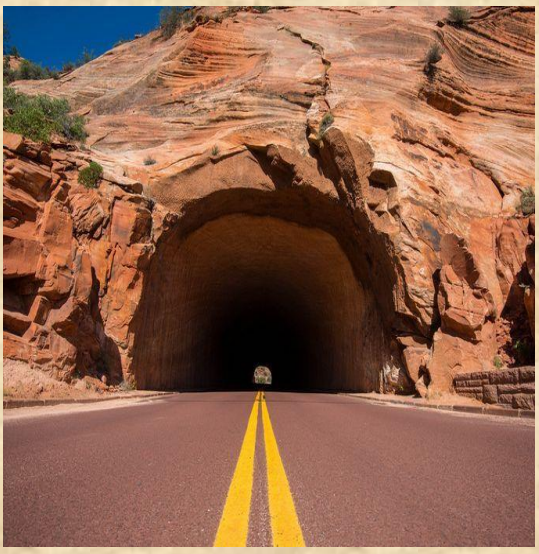
- Railway
- Highway
- Pedestrian
- Navigation
- Subway

Conveyance tunnel-

- Hydro-electric power tunnel
- Water supply tunnel
- Transporting tunnel in industrial plant

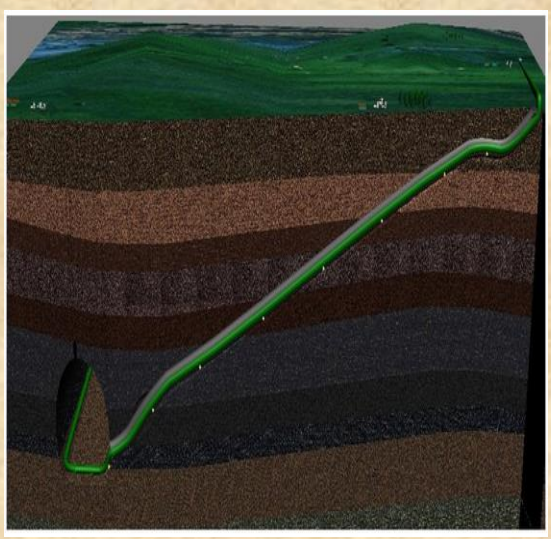
(2) BASED ON QUALITY OF MATERIALS :-

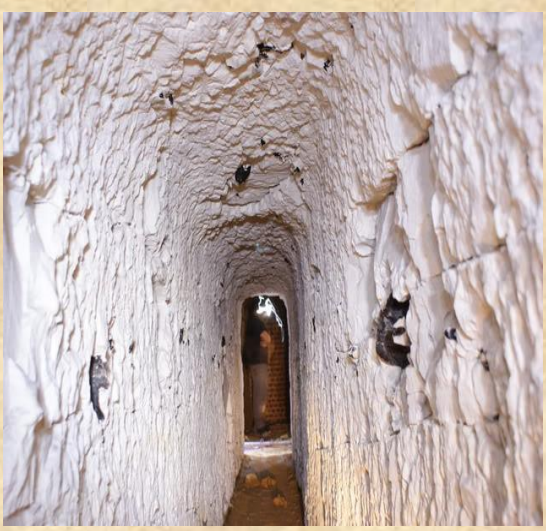
- Tunnels in hard rock
- Tunnels in loose rock
- Submarine tunnels



(3) BASED ON ALIGNMENT:-

- Saddle and base tunnel
- Spiral tunnel
- Off-spur tunnel
- Slope tunnel





SHAPE OF TUNNEL-

- Poly centric
- Circular section
- Horse shoe
- Rectangular or box type
- Egg shaped
- Elliptical

PROCESS INVOLVED TUNNELING:-

- Geological and hydrological conditions
- Cross section and length of tunnel
- Cost & time
- Limits of surface disturbance
- Tunnel methods
- Required speed of construction

TUNNEL CONSTRUCTION METHOD:-

(1)Classical method

(2)Cut and Cover method

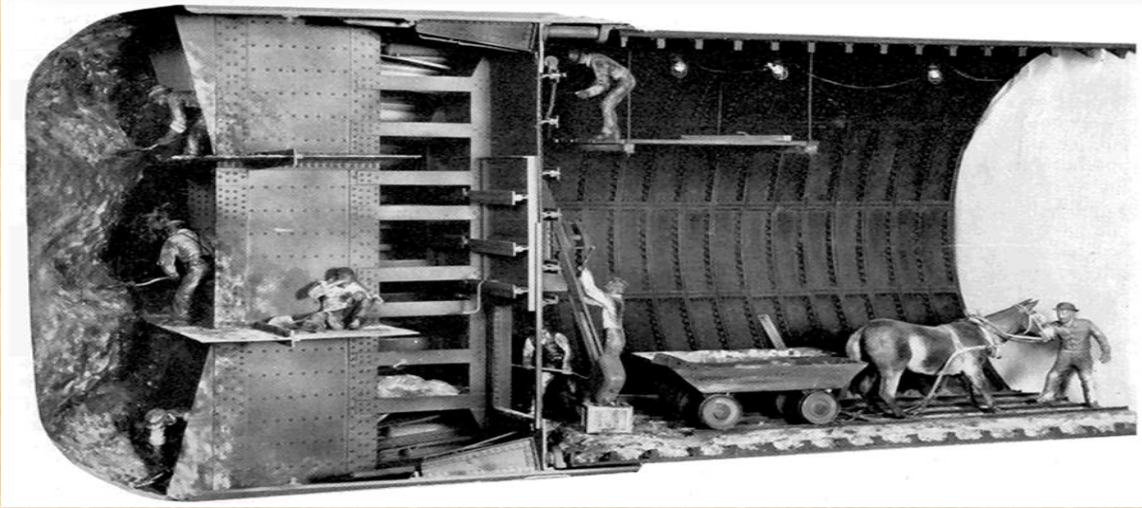
(3)Drill and Blast method

(4)Tunnel boring Machines (TBM)

(5)Immersed tunnel method

(6)Tunnel jacking

CLASSICAL METHOD



CUT AND COVER

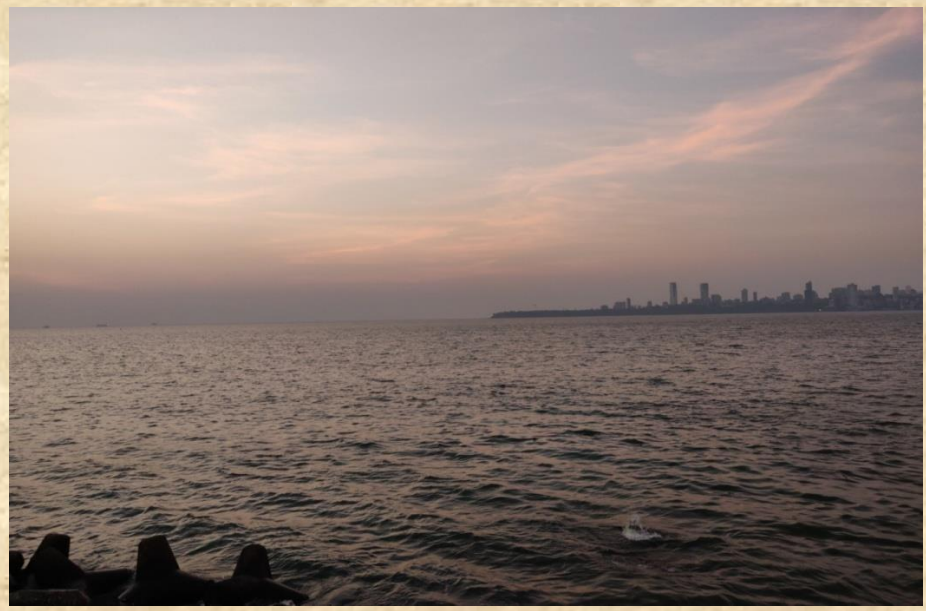
....হায় বাঙালি হায়....

By- Arghyadeep Baneerjee (2nd Year, Sec-B)

ঘটনাটা আমার চোখের সামনেই ঘটা। আপনারা সত্য ঘটনা অবলম্বনে ও বলতে পারেন। চরিত্রের বাস্তবিক নাম নাই বা নিলাম।কাল্পনিক কিছু নাম না হয় থাক। হিন্দুশাস্ত্রমতে আমাদের ৩৩ কোটি দেবদেবী আছে আর তার মধ্যে আমার প্রিয় হলো শিব। শিবের বহুনাম আছে,যেমন-ব্যোমকেশ, নীলকন্ঠ, সিদ্ধিনাথ ,রুদ্র। আমার নাম রুদ্র ধরাযাক। পদবিটা বাদ রাখলাম,কারণ আমরা যতই উন্নত হইনা কেন একুশ শতকে দাঁড়িয়ে ও জাতি- ধর্ম- বর্ণের গোড়ামি নিজমান বজায় রেখেছে। আজও আমরা গুণের আগে রুপটাকেই প্রাধান্য দিয়ে থাকি।

যাইহোক, এবার না হয় মূল কাহিনীতে আসা যাক। একটি মেয়ে তার বন্ধুদের সাথে একটি ধাবায় গেছে। আমিও সময় কাটানোর নিমিত্ত ওই ধাবায় গিয়ে বসি প্রায়শই। ভালো লাগে। কখনো রাজনীতি, কখনো খেলাধুলা, কখনো বা সিনেমাজগতের আলোচনা শুনতে শুনতে সময় কেটে যায়। আবার কখনো বা নির্ভেজাল আড্ডা দিই বন্ধুর সাথে থুড়ি বান্ধবীর সাথে, আমার বান্ধবী আমার একটি ডায়েরি এটিই আমার প্রেমিকা যেহেতু ডায়েরী জড়ো-বস্তু তাই বেইমানি করেনা, হাতে হাত ধরে পথ চলার স্বপ্ন দেখায়।মাঝ পথে হাত ছাড়ে না।

মেয়েটি ওই ধাবারই এক শিশুশ্রমিক সাথে বাকবিতণ্ডায় জড়িয়ে পড়ে। ছেলেটির নাম ছোটু ; যদিও তার একটি সুন্দর নাম আছে, "শাহরিয়ার"- যা আমার খুবই প্রিয়। তাই আমি তাকে এই নামেই ডাকি। ছেলেটির বয়স খুব একটা নয়, দশ- বারো বছর হবে। খাবারের হিসাব নিয়ে এদের দুজনের মধ্যে কথাকাটাকাটি চলছে। হিসাবে পাঁচ প্লেট খাবারের কথা উল্লেখিত হলেও মেয়েটি তা মানছেনা। আমি ও জানিনা যদিও কে ঠিক কে ভুল। কিন্তু, যে

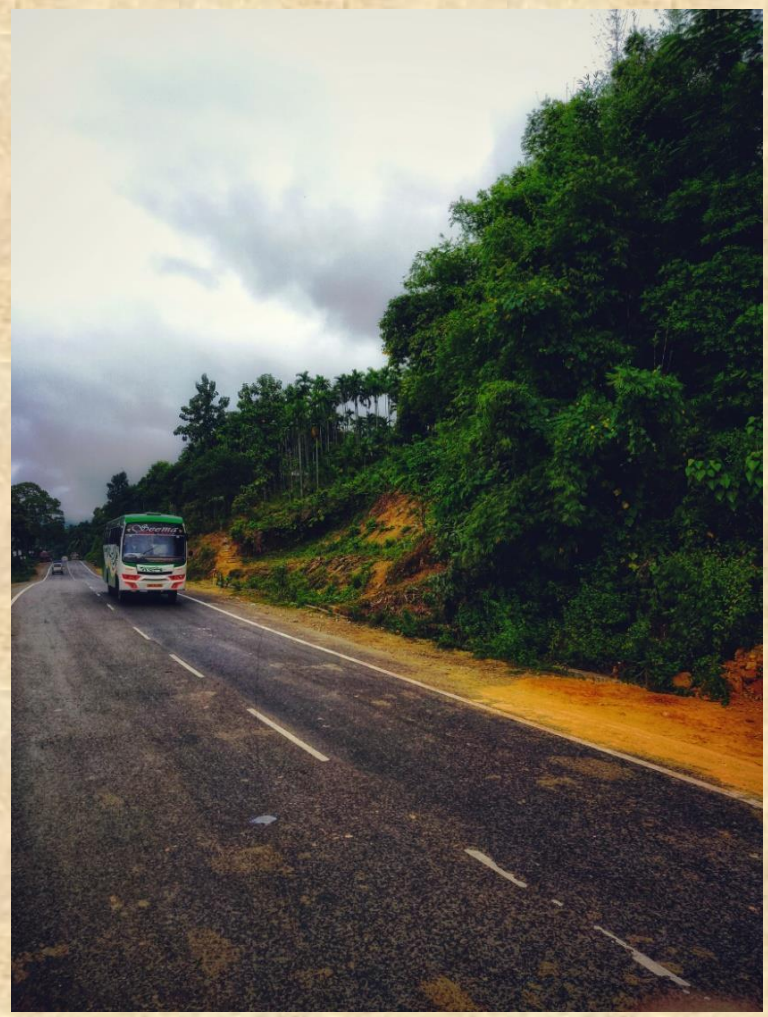


Picture Courtesy: ***Azhar Mehmud***

জিনিসটা আমায় ভাবালো, বলতে পারেন এই লেখার জন্য অনুপ্রাণিত করলো তা হলো মেয়েটা

শাহরিয়ারের সাথে কথা বলার মাধ্যম হিসাবে ইংরেজি কেই বেছে নিল। যদিও মেয়েটা বাঙালি ঘরের মেয়ে বুঝতে পারলাম কিছুক্ষন পর;জানলাম মেয়েটির নাম স্বাগতা ভট্টাচার্য। বাবার সাথে বাবা বলেই কথা বললো যথারীতি। কিন্তু ছোট্ট শাহরিয়ার সাথে ইংলিশে কথোপকথন করছে। যদিও সে বুঝেশুনে বাঙলাতেই উত্তর দিচ্ছে এবং সঠিক উত্তর ই দিচ্ছে। সে ইংলিশ বলতে না পারলেও ইংলিশ বেশ ভালই বুঝতে পারে। আমার একটা জিনিশ যেটা অবাক লাগলো যে, মেয়েটা বাংলা জানে, বাংলা বলতেও পারে। বাঙালি ঘরের মেয়ের মাতৃভাষাও বাংলা। তাহলে সে কী লোকদেখানোর জন্যই কথা বললো ইংলিশে?নাকি মুখবন্ধ করে দেওয়ার প্রচেষ্টা মাত্র? কারণ সে জানতো শাহরিয়ার ইংলিশ বুঝলেও বলতে পারবেনা।

কিন্তু শাহরিয়ার জবাব দিল। জবাব দিলো বাংলায়।জবাব দিলো তার মাতৃভাষায়। আর প্রমাণও করে দিল যে ভুলটা তার নয় বরং মেয়েটিই করেছে। গণ্ডগোলটা বিলের হিসাবে নেই বরং আছে তার হিসাবে। আর এভাবেই সে নিজ যোগ্যতায় নিজের কাছে সম্মানিত হলো।যদিও ভুল হিসাবের অপমান খুব একটা নয় ; ভুলটা আমিও করতে পারি, আপনিও করতে পারেন । ঘটনাটা এখানেই শেষ। মেয়েটি তার সিগারেট বিয়ারে মন দিল। আর ছোটু অন্যান্য খরিদ্দারের দিকে। আমিও আমার চা শেষ করে বেরিয়ে পরলাম। কিন্তু শিখলাম অনেক কিছুই।



Picture Courtesy: ***Azhar Mehmud***

গোস্বামী পাঠ করি তেমনই ইংলিশ সাহিত্যসম্রাট শেক্সপিয়ার, বায়রন, কিটস, শেলি এদেরও বড়ো ভক্ত।

হয়তো মেয়েটা তার জ্ঞান- বিভব- বুদ্ধি জহির করতে ইংলিশ ভাষার অস্ত্র ব্যাবহার করেছিল। কিন্তু শাহরিয়ার এর বিশুদ্ধ সরল সাদাসিধা ভাবে প্রকাশিত মাতৃভাষার ধারালো আঘাতের কাছে তা কিছুই নয়। জানিনা বিদেশিভাষা বলে কতোটা নিজের যোগ্যতা বোঝানো যায়, সিগারেট- বিয়ার এগুলোর মধ্যেই বা কতোটা যোগ্যতা নিমজ্জিত থাকে। তবুও আমি এই দিকটা

বর্জন করতে চাই।

দ্বিতীয়তঃ, আর যেটা শিখলাম তা হলো শাহরিয়ারের কাছ থেকে।সত্যিই, আমরা নিজের অজান্তে নিজের মাতৃভাষাকে অপমানিত করে যাই দিবারাত্র। হয়তো হচ্ছি আমরা শিক্ষিত, কিন্তু তাও শিক্ষার মূল ভিত্তিস্তর মাতৃভাষা যা ছাড়া আমরা শিক্ষাগ্রহণে সক্ষম হতাম না তা- ই আমরা অস্বীকার করছি; তাকেই অপমানিত করছি ; তার- ই স্বরূপ বিশ্বমাঝে তুলে ধরতে লজ্জা পাচ্ছি।

এবার আপনার মনে প্রশ্ন জাগতে পারে আমি কে, কেনোই বা এই সামান্য ঘটনার কথা বলছি। ধরেই নিন আমি আপনার পাশের বাড়ির একজন বা কোনো দাদা যে বেসরকারি বিদ্যালয়ে পড়ায়। আমি যে কেউ। কিন্তু আমার আসল বক্তব্য হলো ভাষাকে মর্যাদা দেওয়া। আমার জাত-পেশা- ধর্ম বিচার করে কোনোলাভ নেই। ভাষাকে আমিও ভালোবাসতে পারি, আপনিও পারেন।

হ্যা, আমি বাঙালি। তবে কালের স্রোতে পরিবর্তনের জোয়ারে ভেসে এই বাঙালিগুলোই ক্রমশঃ "বং" হয়ে যাচ্ছে। ইংলিশ মাধ্যমের বিদ্যালয়ের থেকে পাশ করা ছাত্রের মা তার বান্ধবীকে ফলাফলপত্র নিয়ে বলছে সব বিষয়ে তার ছেলে সর্বোচ্চ মান পেয়েচে কিন্তু বাঙলাতেই কম কারণ তার ছেলের নাকি বাংলাটা ঠিক আসেনা। আসলে বর্তমানে বাঙালিরা বাঙালিয়ানা ভুলে ক্রমশই পাশ্চাত্য শিক্ষার দিকে আকৃষ্ট হচ্ছে। শিক্ষাগ্রহণ খারাপ তা বলবোনা; কিন্তু সুশিক্ষার সাথে কুশিক্ষাও গ্রহণ করছে। ফলে বাঙালিরা আজ বাংলাভাষা ভুলতে বসেছে। বলবোনা তুমি কেবল রবীন্দ্রনাথ পরো বা শেক্সপিয়ার পরো। তুমি যা ইচ্ছা পড়ো। কিন্তু নিজের মধ্যে নিজ মাতৃভাষাকে একটু হলেও বাঁচিয়ে রেখো ; মাতৃভাষাকে মর্যাদা দিও।

আজ আন্তর্জাতিক ভাষা দিবসের একদিন পরে"ভাষা"সম্পর্কে ছোট্ট কিছু বক্তব্য রাখলাম। ভুলত্রুটি কিছু থাকলে মার্জনা করবেন। সবশেষে কবি দ্বিজেন্দ্রলাল রায়ের কথাতেই শেষ করি

" আমি বাংলার গান গাই,

আমি বাংলায় গান গাই,

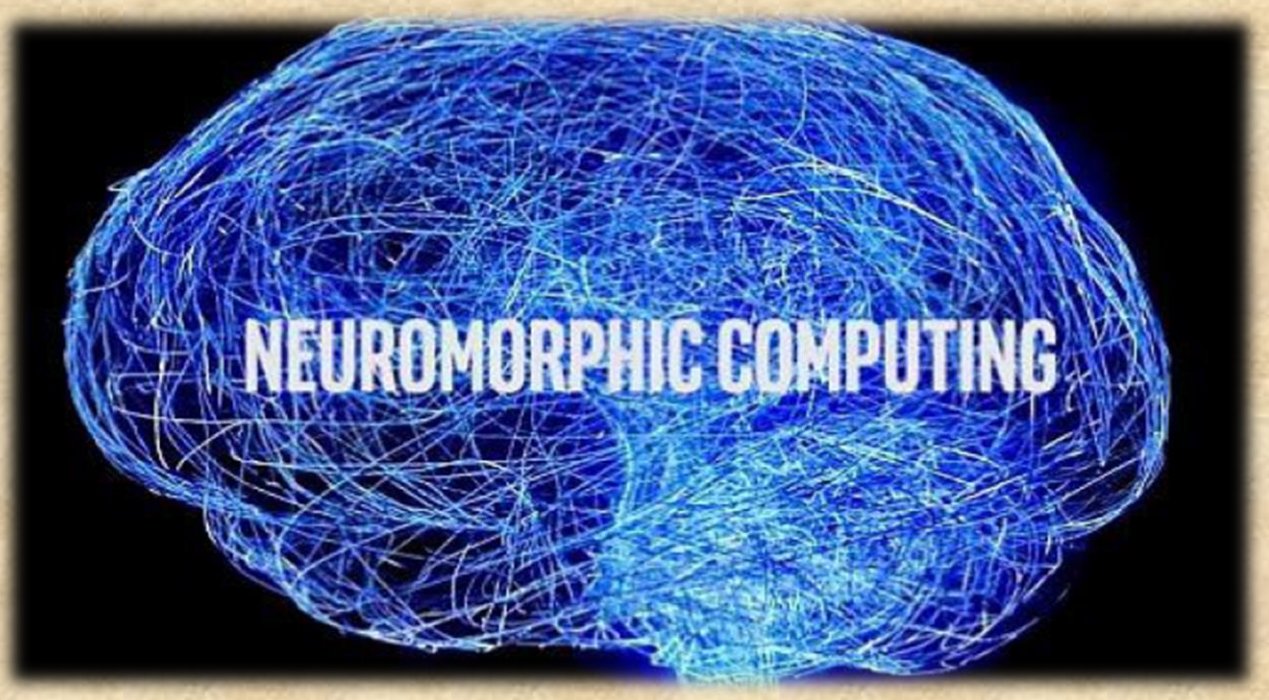
আমি আমার আমিকে চিরদিন

এই বাংলায় খুঁজে পাই।।"

NEUROMORPHIC COMPUTING

-Submitted by: Nishat Parveen

(2nd Year, Sec-B)

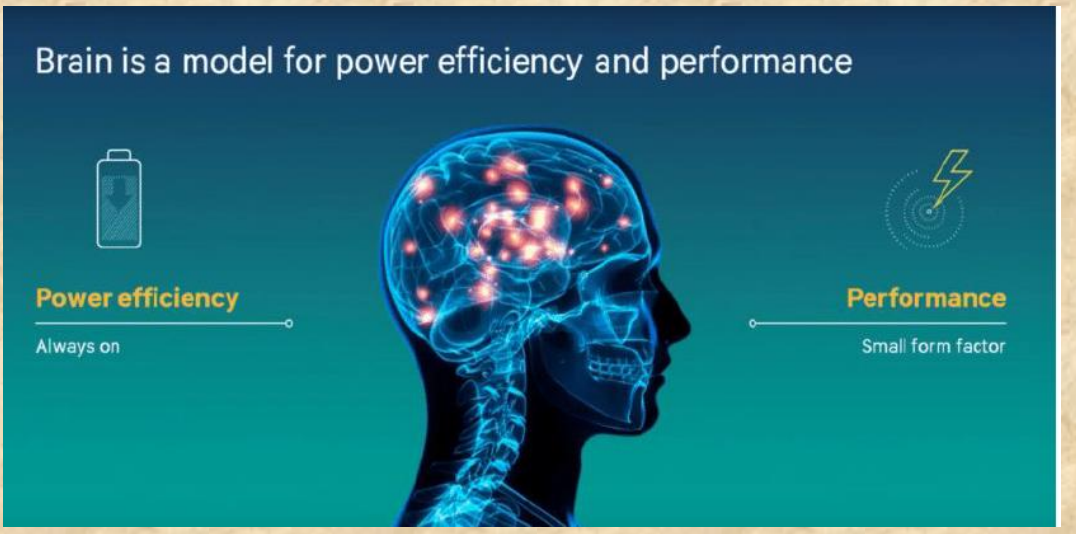


Computers will help people to understand brains better and understanding brains will help people to build better computers.

Once, it was fashionable to describe the brain as being like hydraulic systems employed to create fountains. As tech moved on, it is time for computers. Instead of thinking of brains as being like computers, they wish to make computers more like brains. This way, they believed, humanity will end up not only with better understanding of how the brain works, but also with better and smarter computers. Neuromorphic Computing, a concept developed by Carver Mead, is meant to describe the use of electronic systems that operates using the same physics of computation used by nervous system. It nowrepresents a

wider concept that bridges computing systems and neural systems in both directions. A slightly different view of NC is,however,possible: in an effort to overcome the limitations of current technologies, many researchers are investigating novel computing architectures that mimic biological neural structures with purpose of achieving the computational capabilities of such systems with similar volume and energy efficiency. Their goal is to design a computer that has all of three characters that brains have and computers don't. These are:

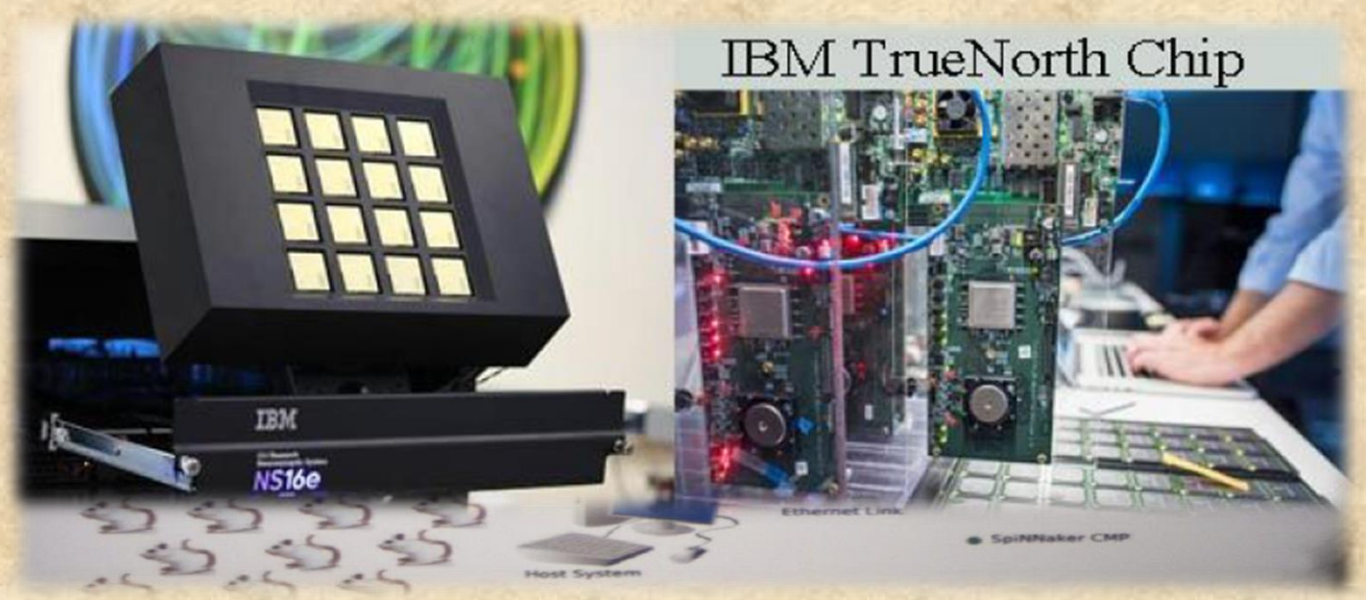
1. Low power consumption (human brain use about 20 watts, whereas supercomputers used to try to stimulate them in megawatts)
2. Fault tolerance (losing just one transistor can wreck a microprocessor but brains lose neurons all the time)
3. Lack of need to be programmed(brain learns and changes spontaneously as they interact with the world, instead of following the fixed paths and branches of a predetermined algorithm). I means building artificial brain cells and connecting them up in various ways, to



try to mimic what happens naturally in brain.

Today there are several projects and approaches to neuromorphic technology,among which the best known is The Truenorth Chip developed at the IBM.

In 2011,they revealed this brain like chip has built departing from the hypothesis that the cerebral cortex comprises certainCortical microcircuits. The chip works like human brain,it doesn't have one large CPU but a Huge member of artificial neurons, which are interconnected.



Picture Courtesy: Ananya Majumdar

(3rd Year, Sec-A)

I believe

I believe

I believe in every drop of rain that falls, a flower that grows.

I believe that somewhere in the darkest night, a candle glows.

I believe for everyone who goes astray

Someone will come to show the way.

I believe, I believe.

I believe, in the terrible storm, the smallest prayer will still be heard.

I believe that someone somewhere hears every word.

Every time I hear a new born cry,

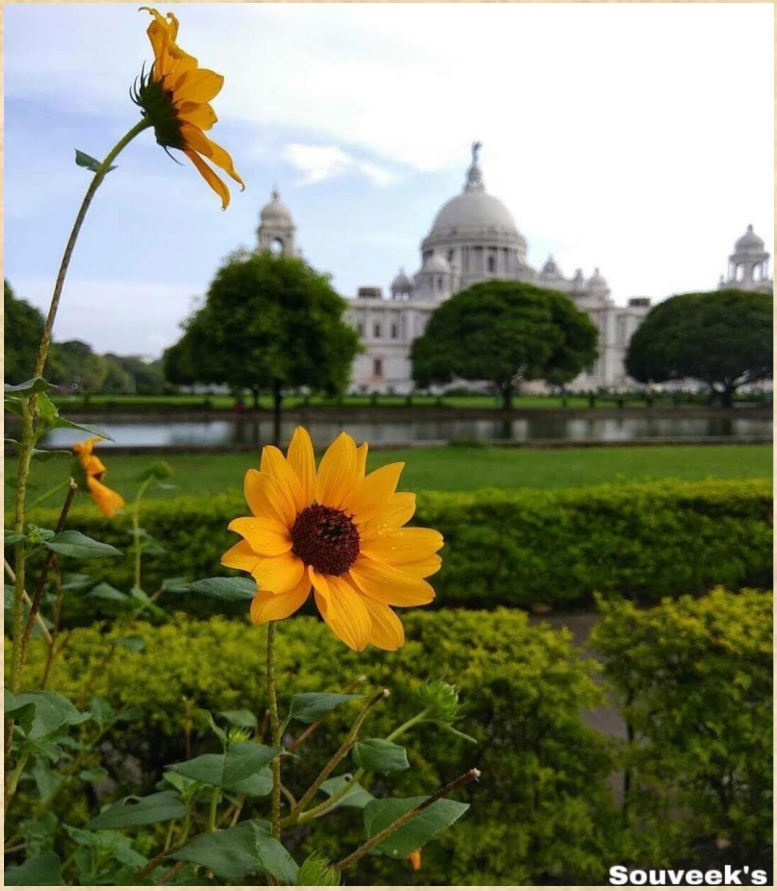
Or touch a leaf or see the sky,

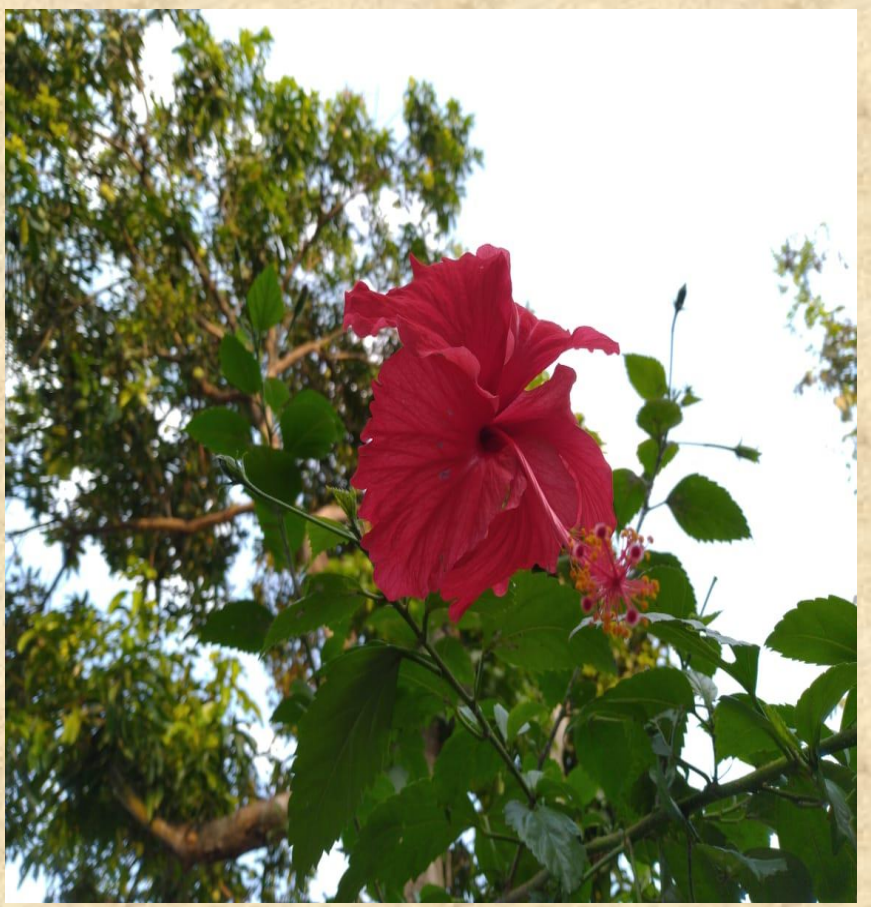
Then I know why,

I believe……

by- Somali De (1st year, Sec-A)

Picture Courtesy: Souveek Roy
(2nd Year, Sec-B)





Picture Courtesy: Atanu Santra
(2nd Year, Sec-A)

FREEDOM OF INTERNET

In this day and age when much has been debated upon freedom and independence, one sphere which has been left rather ignored unintentionally is our (relative) freedom to enjoy Internet. The present generation needs internet, or more specifically social media and it's constant updates and humor, as much as we need oxygen. But what if we were put in a situation where we became unable to share memes (definitely our top priority) and information, unsure about the consequences of doing so?

That is the situation which is unfolding in the European Union. The much debated Article 13 of the EU Copyright Directive has gained a lot of traction in the online community for all the wrong reasons. The draconian law holds websites responsible for copyright violations concerning user-submitted content. The reason as to why this law is so damaging to the flow of information is because of two aspects. On one hand, it requires sites and search engines to pay news outlets for linking to their stories, making cross-posting links financially prohibitive. And on the other hand, it expects websites that allow users to post content, to individually assess each post for copyright violations, which is beyond human capacity. Of course, this isn't the first attack on the freedom of internet. Last year, the net neutrality laws received a lot of flak as it basically allowed Internet Service Providers to regulate how fast a website loads for its audience depending on how much the website has paid the ISP.

—Kankan Paul

2nd Year Section B

Flora & Fauna...


SHOT ON MI A2
MI DUAL CAMERA
Sayantan's


SHOT ON MI A2
MI DUAL CAMERA
Sayantan's


SHOT ON MI A2
MI DUAL CAMERA
Sayantan's


Sayantan's

❖

कभीनाकभीफिरसेहमारेरास्तेटकराएंगेतोजरूर

कभीनाकभीफिरसेतूममूझसेमिलोगेतोजरूर

जरूरीतोनहीवोमूलाकतहसीनहोगी

इतनायकीनहैहममुसकूराऐगेतोजरूर

❖

by- Tanmoy Majumder (1st Year, Sec-A)

Need For Speed..

—Picture Courtesy: Souveek Roy
(2nd Year, Sec-B)

Breaking down

-Rishabh Raj Gupta

I went in the room surrounded by the sleepy afternoon silence, I could see the to and fro motion of lord Shiva calendar because of the fan.

The old Videocon TV with a money plant on it had a wooden chair as it's neighbors.

The sound of whirling of the fan added silence to the room.

I dropped my bag off the shoulder, sweat had darkened my t-shirt. I saw an LIC dairy glancing at me from the same wooden chair.

I picked it up. A small paper folding was there as bookmark...I opened it.

It read **" I missed u my son , me and your father waited for a long time but u didn't came, So we thought to go for place better than loneliness....."**

She

by- Somali De (1st year, Sec-A)

She was beautiful, different, popular, and nutty as a fruitcake. A dreamer, a doer. Her friends and family were like a blessing to her. Singing was more than her passion, it was her identity. Her songs were famous all over. Her only dream was the International Singing Championship, and she believed that nothing could ever stop her from achieving her goal.

Everything in her life was perfect until she was hit by throat cancer third stage. The deadliest disease was an irreparable scar, it added a new chapter to her life. The girl knew she would die after two years or so, but that could never extinguish the fire in her heart. She was only seventeen years old, she never wanted to stop but carry on. Everyday injections and medicines were the most important part of her daily chores.

The age when other teenagers played around, enjoyed their lives, she was pitted into the darkness. Hope was the constant companion that she could survive the difficult days coming ahead. Every night the girl promised to herself that she would live and fight.

It was the day of her surgery. Everyone stood outside the room where she was taken to.

Tears rolled down her mother's eyes, she couldn't see her daughter going through such pain every single day. After five hours of surgery the doctor came out of the room. Everyone went up to him and declared that the operation was successful but it was just a temporary one.

A year passed...

Cancer destroyed her inside out. She could barely talk, singing was a dream then and going for the competition was next to impossible. Her long hair all chopped off, she was all bald and beautiful. She laughed and hid all her tears, all the pain.

Another operation was done but it failed, her medication continued, and she kept on writing songs, she promised to herself that she would fight this battle, she might lose but she won't give up. Cancer made her stronger than before.

It was a dark winter night, she was writing a song titled 'My battle', and suddenly she felt that her throat was getting choked and she could barely breathe, she could not call anyone, blood came out of her throat, she started throwing her hands and legs in all direction as that pain was unbearable. After the last few minutes fighting the young girl breathed her last breath. The night

felt more dark and chilly for her parents. It was a nightmare for all. But she died as a warrior. She survived more than the time the doctor said.

She proved to be a Survivor, a Daughter, and not a Victim.

Picture Courtesy: Aman Jaiswal
(2nd Year, Sec-A)

Picture Courtesy: Rajat Kumar
(2nd Year, Sec-A)


Sagnik


Sagnik

ক্যান্সারে আর মৃত্যু নয় !!

-by Souhardya Patra (2nd Year, Sec-A)

মার্চ, ২০১৫

আমারবন্ধু,অনুরাগের (নাম পরিবর্তিত) টি সেলএকিউটলিম্ফব্লাস্টিকলিম্ফোমাধরাপড়ে,তখনথেকেইতারপ্রয়োজনীয়সমস্তরকমচিকিৎসাশুরুহয়এবংএইপ্রতিকূলতাসত্ত্বেওসেমাধ্যমিকপরীক্ষায়ভালোফলকরে।

ধীরেসেসুস্থহতেথাকলোকিন্তুদুর্ভাগ্যবসত৩বছরপরেইহটাৎইতারশারীরিকঅবস্থারঅবনতিহতেথাকে, তারসুস্থহবারএকমাত্রউপায়ছিলবোনম্যারোট্রান্সপ্লান্ট, তবেএইখরচসাপেক্ষচিকিৎসা(৩০লক্ষ)

মাধ্যমেরপরিষেবাগ্রহণকরাতারপরিবারেরআওতারবাইরেছিল।এইকঠিনপরিস্থিতিতেআমরাকজনবন্ধুরাএবংআত্মীয়েরাআর্থিকসাহায্যকরেছিলাম.

কলকাতারএকপ্রখ্যাতহাসপাতালেসেআবারসুস্থহতেশুরুকরেকিন্তু১৪ইজুলাইহঠাৎইহৃদরোগেআক্রান্তহয়এবংতারনাকমুখথেকেক্রমাগতরক্তপড়তেশুরুকরে, ডাক্তারদেরমতেএরকারণহলফুসফুসে "ফাংগালইনফেকশন", এইজন্যতাকে ICU থেকেভেন্টিলেশনএপাঠানোহয়।অনুরাগপ্রথমথেকেইএকজনফুটবলপ্রেমীছিলতাইসেবারেরওয়ার্ল্ডকাপটাসেদেখেছিলোআমারসাথেহাসপাতালেবসে।

সেপ্টেম্বরমাসেঅনুরাগআমাদেরথেকেছেড়েচলেযায়শিখিয়েদিয়েযায়জীবনেরলড়াইকিভাবেলড়তেহয়।

এরদুইসপ্তাহপরেইজানলামযেমার্কিনযুক্তরাষ্ট্রেরজেমসপিএলিসনওজাপানেরতাসুকুহঞ্জফিজিওলজিও মেডিসিনেনোবেলপুরস্কারপায় ,
তারাপ্রমাণকরতেসক্ষমহয়যেক্যান্সারকোষধ্বংসকরতেপারেশারীরিকঅনাক্রমতাই,
সেইজন্যসম্পূর্নএকনতুনপ্রযুক্তিরঔষধতৈরিহতেচলেছে।এইওষুধগুলোরক্লাসহলোচেকপইন্টইনহিবিটরসএরকয়েকটিউদাহরণহলোইপিলিমূমাব, নিবলুমাব, পেমব্রলিযুমাব

অনাক্রমতায়আক্সেলারেটরসওব্রেক

আমাদেরঅনাক্রমতারমূলকাজহলোনিজকোষএবংবহিরাগতকোষেরমধ্যেপৃথকীকরণকরাযাতেআক্রমণকারীব্যাকটেরিয়া,
ভাইরাসপ্রভৃতিকেধ্বংসকরতেপারে।শ্বেতরক্তকণিকাএরএকবিশেষপ্রকারটিকোষপ্রধানভূমিকাপালনকরে।টিকোষেরগ্রাহকগুলিবহিরাগতদেরশনাক্তকরতেপারেএবংবিক্রিয়াশুরুকরে ,
কিন্তুটিকোষেরএইকাজেরজন্যঅতিরিক্তপ্রোটিনএরদরকারযাবিক্রিয়াতরান্বিতকরে।অনেকবিজ্ঞানী এইপ্রাথমিকগবেষণায়আত্মনিয়োগকরেছেএবংএমনকয়েক্তিপ্রোটিনআবিষ্কারকরেনযেগুলোব্রেকহিসেবেকাজকরেঅনাক্রমতাকেবাধাদেয়।এইভাবেএমনসমন্বয়সাধনহবেযাতেঅনক্রমতাকেবলবহিরাগতকোষকেইধ্বংসকরবেকিন্তুনিজস্বসুস্থকোষএইধ্বংসেরহাতথেকেরেহাইপাবে।

ইমিউনথেরাপিরনতুনমূলতত্ব

৯০এরদশকইউনিভার্সিটিঅবক্যালিফোর্নিয়াতেজেমসপিঅ্যালিসনটিকোষেরপ্রোটিন CTLA 4 নিয়েগবেষণাকরলেনএবংদেখলেনযে CTLA 4 টিকোষেরউপরব্রেকহিসেবেকাজকরেতখনঅন্যান্যবিজ্ঞানীরাএইপদ্ধতিকেঅটোইমিউনডিসঅর্ডারএকাজেলাগায়,
কিন্তুঅ্যালিসনঅন্যভাবেজিনিসটাকেভেবেছিলেনতিনিএকঅ্যান্টিবডিআবিষ্কারকরেছিলেনযেটা CTLA 4 এরসাথেযুক্তহয়েএরকাজটাকেবন্ধকরে। CTLA 4 এরকাজপ্রতিরোধহলেটিকোষকেবাধাদেবারমতকিছুনাথাকায়টিকোষক্যান্সারকোষকেধ্বংসকরতেপারে।অ্যালিসনএবংতারসঙ্গীরাতাদেরপ্রথমপরীক্ষাকরেছিলেন১৯৯৪সালেরশেষদিকেএকক্যান্সার আক্রান্তইদুরেরউপর,
দেখাগিয়েছিলইদুরেরঅ্যান্টিটিউমারটিকোষসক্রিয়হয়েগিয়েছিলব্রেকেরনিষ্ক্রিয়তায়।এভাবেইইদুরের শরীরেক্যান্সারদমনকরাগিয়েছিল।অ্যালিসনএইপদ্ধতিটামানুষেরসার্থেথেরাপিহিসেবেকাজেলাগাতে চেয়েছিল।

২০১০সালেএটামানুষেরউপরপ্রথমপ্রয়োগকরাহয়েছিলোযাত্বকএরক্যানসারকেপ্রতিরোধকরে, এইরকমঅভূতপূর্বফলআগেকখনোদেখাযায়নি

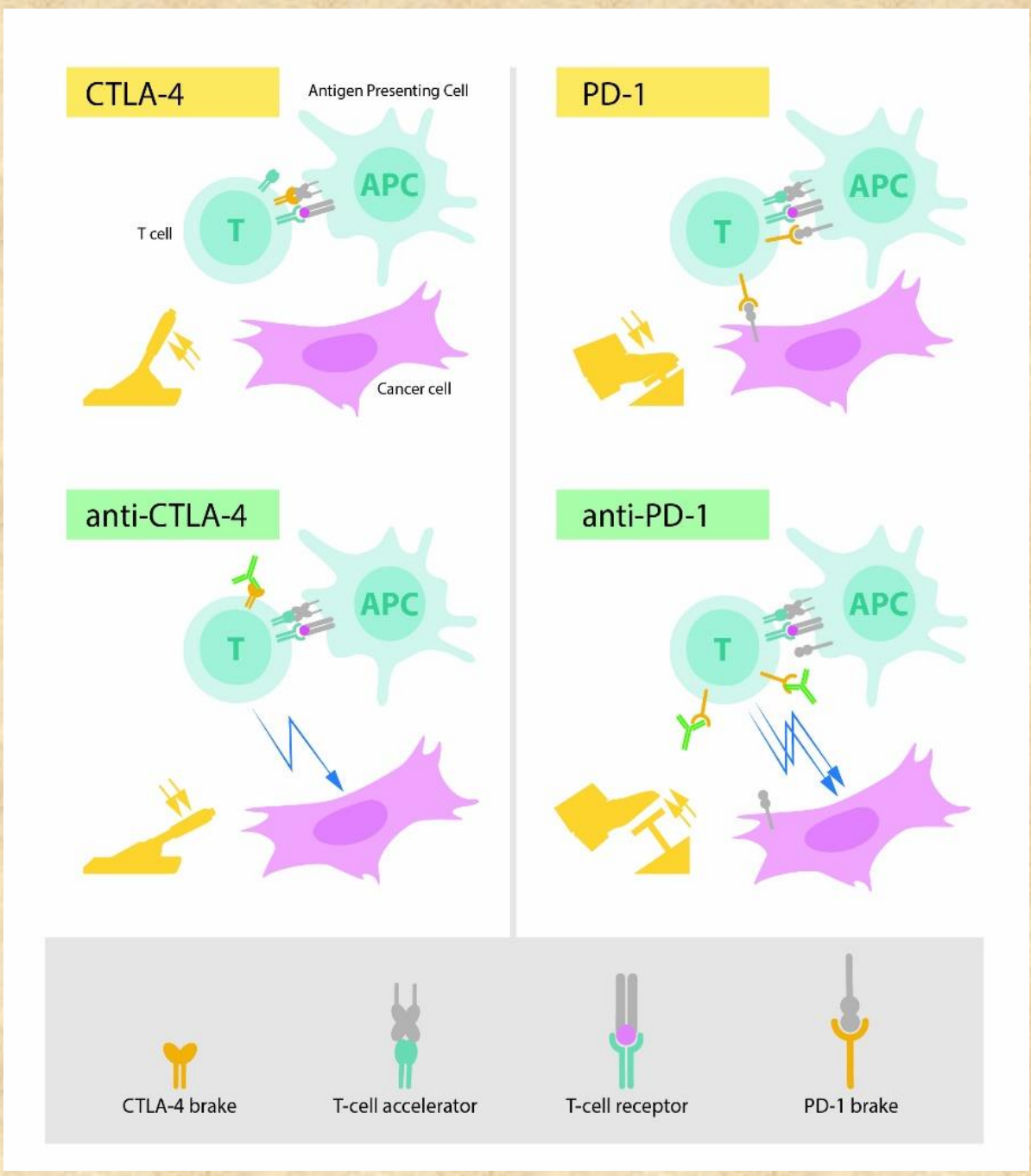
PD-1 এরআবিষ্কারএবংক্যান্সারদমনেগুরুত্ব

১৯৯২সালেতাসুকুহনযোআবিষ্কারকরেছিলেন PD-1 ,
এটাএমনএকটাপ্রোটিনযেটিটিকোষেরউপরেথাকে।তিনিকিওতইউনিভার্সিটিতেঅনেকবর্ষধরেগবেষণাকরেউনিদেখেনযে PD-1 CTLA 4 টিকোষব্রেকহিসেবেকাজকরেকিন্তুএকটিঅন্যপদ্ধতিতে। PD-1
ব্লকেডপ্রথমেজন্তুরউপরেপ্রয়োগকরাহয়পরে২০১২সালেসেটিমানুষেরউপরপ্রয়োগকরাহয়।দেখাগেল যেপ্রায়সমস্তধরনেরক্যান্সারেরবিরুদ্ধেএটিলড়াইকরতেসক্ষম,
বিশেষকরেমেটাস্টাটিকক্যানসারকেপ্রতিরোধকরাযেতেপারেযামেডিক্যালসাইন্সেএকঅভূতপূর্বসাফল্য

ইমিউনচেকপয়েন্টথেরাপি

এইপদ্ধতিদিয়েঅ্যাডভান্সলেভেলেরক্যান্সারচিকিৎসাকরাযায়।কিন্তুএরপ্রধানখামতিহলোএরপার্শপ্রতিক্রিয়াযেটানিয়েএখনওকাজচলছে।তুলনামূলকভাবে PD-1 বেশিকার্যকরীকারণলাংক্যান্সার, রেনালক্যান্সার, লিম্ফোমা, মেলানোমাপ্রভৃতিতেসুফলপাওয়াগিয়েছে।বর্তমানেদেখাযাচ্ছে CTLA 4 এবং PD-1 এরযৌথপ্রয়োগইবেশিকার্যকরী।এভাবেইহণযোওঅ্যালিসননিজেদেরআবিষ্কারেরপরবাকিবিজ্ঞানীদেরঅনুপ্রাণিতকরছে।একশোবছরেরবেশিসময়ধরেবিজ্ঞানীরাঅনাক্রমতাকেক্যান্সারেরবিরুদ্ধেনিয়োগকরারচেষ্টাচালিয়েগেছেন।এইদুজনেরদৌলতেক্যান্সারচিকিৎসারদৃষ্টিভঙ্গি পাল্টেগেছে।

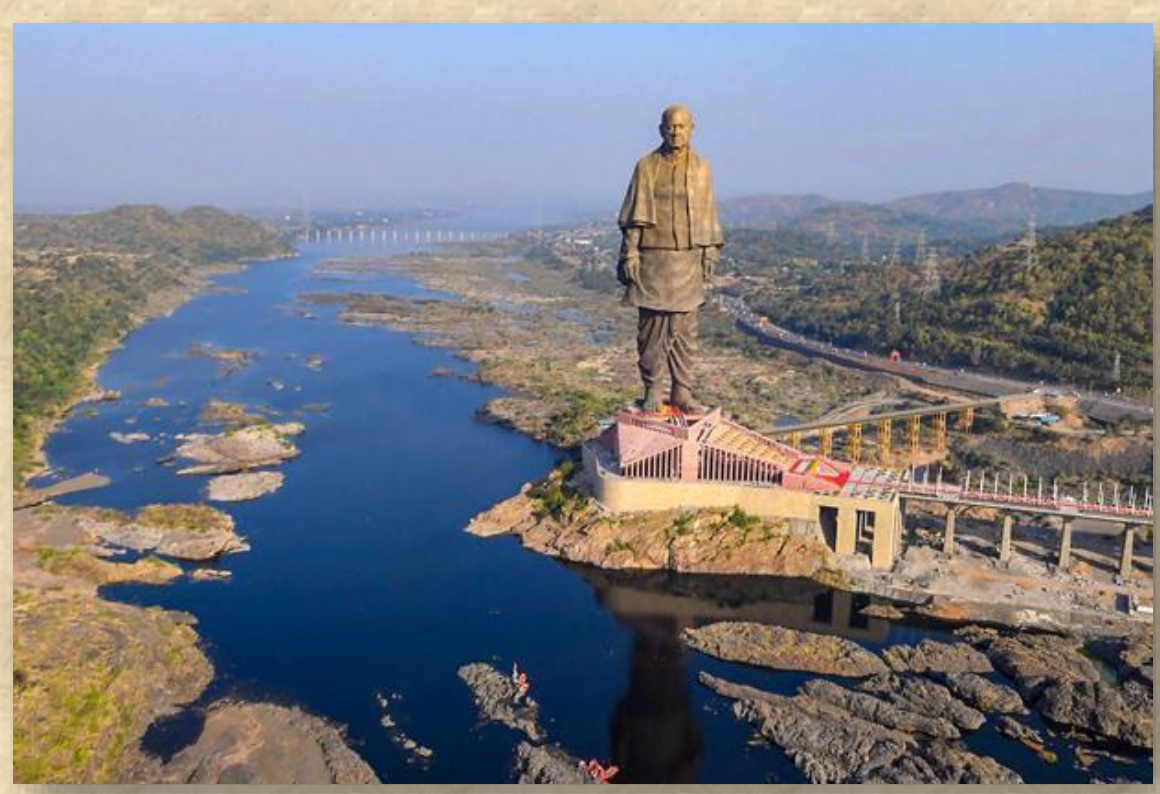
এইআবিষ্কারঅন্তত১বছরআগেহলেহয়তওআমাদেরছেড়েযেতনা।


CTLA-4
Antigen Presenting Cell
APC
T
T cell
Cancer cell
PD-1
APC
T
anti-CTLA-4
APC
T
anti-PD-1
APC
T
CTLA-4 brake
T-cell accelerator
T-cell receptor
PD-1 brake

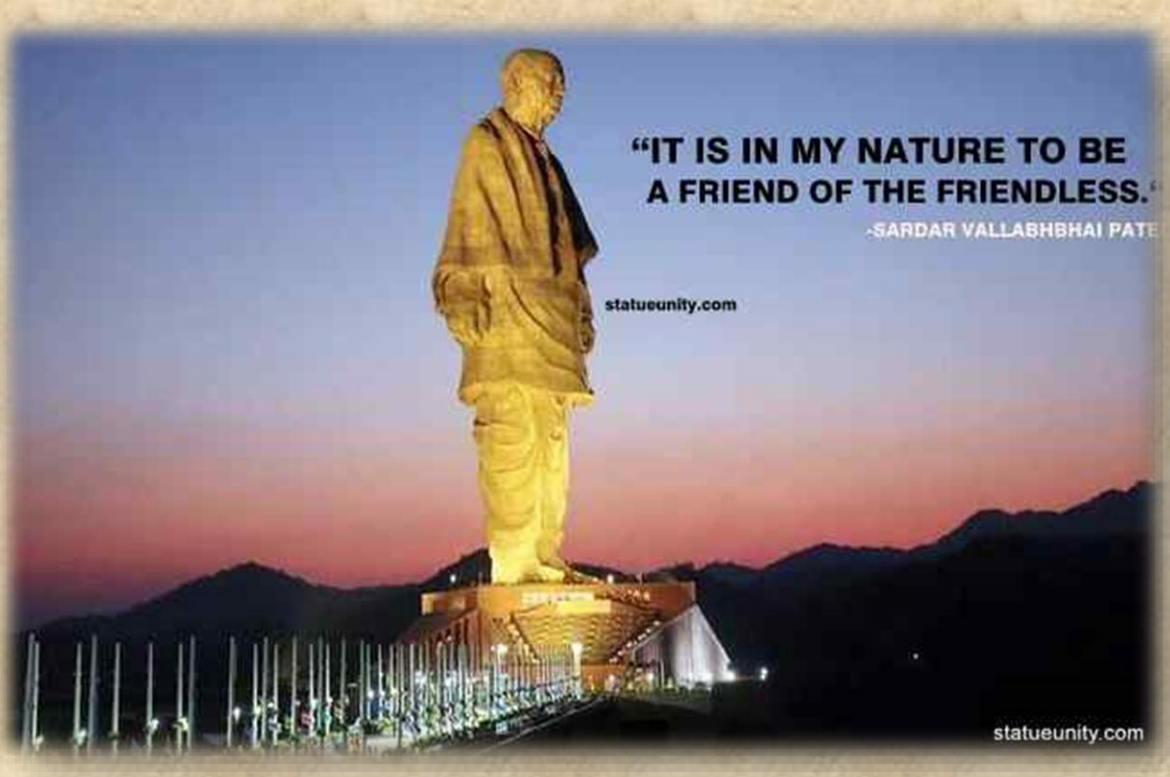

Sagnik

Statue of Unity: A tribute to Indian Engineering Skills

The Statue of Unity is a behemoth statue of the Great Indian Statesman and independence activist leader, Sardar Vallabbhai Patel, highly respecting his leadership in uniting the 562 princely states of India to form the single Union of India. It is the world's tallest statue with a height of about 597 feet overtaking the Statue of Liberty whose height is about 150 feet, nearly four times more. It is located on a river island facing the Sardar Sarovar Dam on river Narmada in Kevadiya Colony.



The statue depicts Sardar Vallabbhai Patel, one of the most prominent leaders of the Indian independence movement, the first Deputy Prime Minister of India, and responsible for the conquest of hundreds of princely states. Sardar Patel's dhoti clad legs and sandals for footwear rendered the design thinner at the base, than at the top, thereby affecting its stability. This was addressed by maintaining a slenderness ratio of 16:19 than the ratio 8:14 for taller buildings. The statue is built to withstand winds upto 180 km/hr and earthquakes measuring 6.5-7 on the Richter scale which are at a depth of about 10 km and at a radius of about 12 km around the statue. This is made possible by the use of 250 ton tuned mass dampers which ensures maximum stability. The total height of the structure is about 790 feet which includes a base of 190 feet and statue of



597 feet.

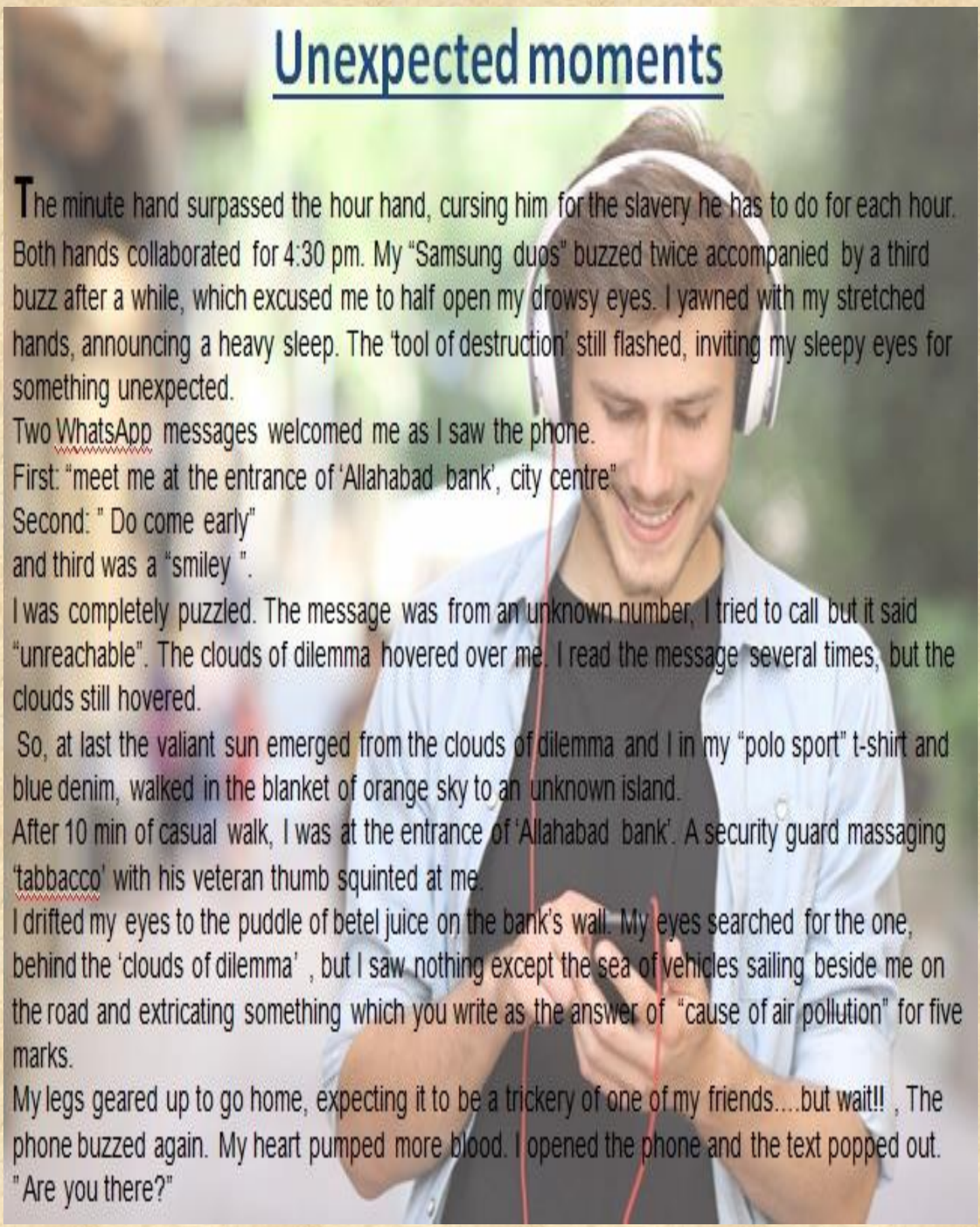
The statue was built by public private partnership model, with most of the money being raised by the Government of Gujarat. The Gujarat Government had allotted Rs 600 crores for the project in the budget from 2012 to 2015. In the 2014-15 Union Budget, Rs 200 crores were allocated for the construction of the statue. A consortium comprising Turner Constructions, Michael Graves and Associates and the Meinhardt Group supervised the project. It took nearly 6 months to complete- 15 months for planning, 40 months for construction and 2 months for handing over by the consortium. The total cost of the project is estimated to be around Rs 2,063 crores.

Indian Infrastructure company, Larsen and Toubro won the contract for its lowest bid of Rs 2,989 crores for the design, construction and maintenance. They commenced construction work from 31st October 2014, L&T employed nearly 3000 workers and 250 engineers for the construction. The core of the statue utilized 2,10,000 cubic metres of cement concrete, 6500 tonnes of structural steel and 18500 tonnes of reinforced steel. The outer façade is made up of 1700 tonnes of bronze plates and 1850 tonnes of bronze cladding which in turn comprised nearly 565 macro and 6000 micro panels. Construction of the monument was completed in mid-October 2018 and the inauguration was done on 31 October 2018, by Prime Minister, Shri Narendra Modi. The statue is divided

into five zones, of which only three are accessible to public. From its base to the level of Patel's shins is the first zone which has three levels and includes an exhibition area, mezzanine and roof. Zone 1 contains a memorial garden and a museum. The second zone reaches up to Patel's thighs, while the third extends up to the viewing gallery at 153m. Zone 4 is the maintenance area, while the final zone consists of the head and the shoulder. The viewing gallery can accommodate up to 200 visitors at a time and give a view of the dam and the environment.

~by: Sourav Datta
3rd Year, Sec:A
Dept. Of Civil Engineering

Unexpected moments



The minute hand surpassed the hour hand, cursing him for the slavery he has to do for each hour. Both hands collaborated for 4:30 pm. My "Samsung duos" buzzed twice accompanied by a third buzz after a while, which excused me to half open my drowsy eyes. I yawned with my stretched hands, announcing a heavy sleep. The 'tool of destruction' still flashed, inviting my sleepy eyes for something unexpected.

Two WhatsApp messages welcomed me as I saw the phone.

First: "meet me at the entrance of 'Allahabad bank', city centre"

Second: " Do come early"

and third was a "smiley ".

I was completely puzzled. The message was from an unknown number, I tried to call but it said "unreachable". The clouds of dilemma hovered over me. I read the message several times, but the clouds still hovered.

So, at last the valiant sun emerged from the clouds of dilemma and I in my "polo sport" t-shirt and blue denim, walked in the blanket of orange sky to an unknown island.

After 10 min of casual walk, I was at the entrance of 'Allahabad bank'. A security guard massaging 'tabbacco' with his veteran thumb squinted at me.

I drifted my eyes to the puddle of betel juice on the bank's wall. My eyes searched for the one, behind the 'clouds of dilemma' , but I saw nothing except the sea of vehicles sailing beside me on the road and extricating something which you write as the answer of "cause of air pollution" for five marks.

My legs geared up to go home, expecting it to be a trickery of one of my friends....but wait!! , The phone buzzed again. My heart pumped more blood. I opened the phone and the text popped out.

" Are you there?"

By- Rishabh Raj Gupta
2nd Year, Sec-A

GREEN CONCRETE

~by Sourav Saha (2nd year, Sec-A)

INTRODUCTION

GREEN concrete has nothing to do with color. It is a concept of using eco-friendly materials in concrete, to make the system more sustainable. Green concrete is very often and also cheap to produce, because for example, waste products are used as a partial substitute for cement, charges. The size of construction industry all over the world is growing at faster rate. The huge construction growth boosts demand for construction materials. Aggregates are the main constituent of concrete. Due to continuously mining the availability of aggregates has emerged problems in recent times. To overcome this problem, there is need to find replacement to some extent. Nowadays, there is a solution to some extent and the solution is known as "Green Concrete". . It is a concept of thinking environment into concrete considering every aspect from raw materials manufacture over mix design to structural design, construction, and service life.

THE PROPERTIES OF GREEN CONCRETE

1.) **Workability:which is basically the ease with which concrete can be compacted fully without segregating or bleeding.**

2.) **Segregation:which is basically separation of coarse particles from the green concrete.**

3.) **Bleeding:which is the appearance of water along with cement particles on the surface of freshly laid concrete.**

4.) **Harshness:which is the resistance offered by the concrete to it's surface finish.**

ADVANTAGES OF GREEN CONCRETE

- **Much change is not required for the preparation of green concrete compared to conventional concrete.**
- **Reduces environmental pollution.**
- **Have good thermal and acid resistance.**
- **Compressive and split tensile strength is better with some materials compared to conventional concrete.**
- **Reduces the consumption of cement overall.**

•Green concrete is economical compared to conventional concrete.

• Green concrete having better workability than conventional concrete.

DISADVANTAGES OF GREEN CONCRETE

•Structures constructed with green concrete have comparatively less life than structures with conventional concrete.

• Compressive strength and other characteristics are less compared to conventional concrete.

• Water absorption is high.

• Shrinkage and creep are high compared to conventional concrete.

• Flexural strength is less in green concrete

SCOPE IN INDIA

Green concrete is a revolutionary topic in the history of concrete industry. As green concrete is made with concrete wastes it does take more time to come in India because of industries having problem to dispose wastes and also, having reduced Environmental impact with reduction in CO_2 emission.

UPGRADATION OF TRAFFIC FOR EMERGENCY SERVICES

~by: Keshav Kumar
3rd Year, Sec A
Dept. Of Civil Engineering

Now a days we are living in an era where vehicle are more than that of roads required to move, so it is quite usual to have the problem of heavy traffic specially during office hours.

And also all of us have seen at least once in a day or may be every day while we are on traffic signals that an ambulance is making noise behind us as there may be a patient fighting for his/her life and we can't do anything for him/her because we are stuck or that ambulance is stuck between the vehicles or we may have seen that a fire fighter van is stuck on a signal and someone's home/office/factory or people are burning and we can't do anything for this.

So I was thinking why can't 'the department of roads and traffic make a separatelane for emergencyservices?And this will change many things,the thing that the roads and traffic department have to do isseparate the existing roads on each and every signal via an emergency lane.This will work in the manner that when the signal getsred, one will

stop their vehicle on this(emergency) lane so that any ambulance or any emergency services will go through it, only when the

signal isred, andafter the signal getsgreen, every one can use that lane.

This will not take too much of money as it may be done on existing roads and there isno need to make a new lane for this.Supposethere is one way 3 lane road on a particular signal so till the signal gets green no one is allowed to go on that lane and after the signal gets green that lane will be used as normal lane that's it.

I know that every one want to keep his vehicle one side so that the emergency services can go faster where it is needed but how can we side to these emergency services as there is no space for us to keep our cars/vehicle side.

So all we have to do is keep a separate lane on every signal crossing and guide all the traffic guards to maintain this when the signal gets red.

In conclusion I can say that this may create a little bit of problem for normal people but it will we better for someone who is fighting for his/her life in an ambulance or any burning building.

The Golden Gate Bridge

-By Sourav Dutta (3rd Year, Sec-A)

The Golden Gate Bridge is a suspension bridge spanning the Golden Gate, the 1.6 km wide strait connecting San Francisco Bay and the Pacific Ocean. Although the idea of a bridge spanning the Golden Gate was not new, the proposal that eventually took hold was made in a 1916 San Francisco Bulletin article by former engineering student James Wilkins. San Francisco's City Engineer estimated the cost at $100 million (equivalent to $2.3 billion today), and impractical for the time.

DESIGN:

Strauss was chief engineer in charge of overall design and construction of the bridge project. However, because he had little

understanding orexperience with cable-suspension designs,responsibility for much of the engineering and architecture fell on other experts.

Strauss's initial design proposal (two double cantilever spans linked by a central suspension segment) was unacceptable from a visual standpoint. The final graceful suspension design was conceived and championed by Leon Moisseiff, the engineer of the Manhattan Bridge in New York City. Irving Morrow, a relatively unknown residential architect, designed the overall shape of the bridge towers, the lighting scheme, and Art Deco elements, such as the tower decorations, streetlights, railing, and walkways.

The famous International Orange color was originally used as a sealant for the bridge. The US Navy had wanted it to be painted with black and yellow stripes to ensure visibility by passing ships.

DIMENSIONS:

The bridge is generally made up of steel, with a total length of about 8981 feet (roughly 2737 m) and the width is about 90 feet (roughly 27 m). The height of the bridge is about 746 feet (approximately 227 m). Clearance provided at toll gates is about 14 feet (roughly 4.3 m) and the clearance provided below the bridge, especially for high tides is about 220 feet (roughly about 67 m).

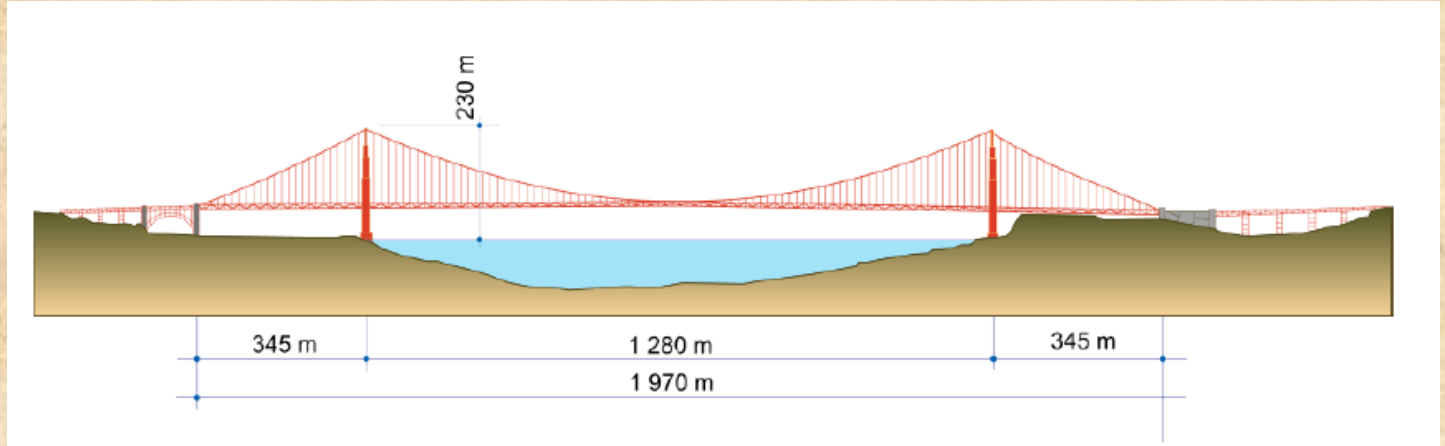


Figure showing height, depth and span from end to end

CONSTRUCTION:

Construction began on January 5, 1933. The project cost more than $35 million, ($514 million in 2018 dollars) completing ahead of schedule and $1.3 million under budget (equivalent to $23.8 million today).

The Golden Gate Bridge construction project was carried out by the McClintic-Marshall Construction Co., a subsidiary of Bethlehem Steel Corporation founded by Howard H. McClintic and Charles D. Marshall, both of Lehigh University. Strauss remained head of the project, overseeing day-to-day construction and making some ground breaking contributions. A graduate of the University of Cincinnati, he placed a brick from his alma mater's demolished McMicken Hall in the south anchorage before the concrete was poured.

He innovated the use of movable safety netting beneath the construction site, which saved the lives of many

otherwise-unprotected ironworkers. Of eleven men killed from falls during construction, ten were killed on February 17, 1937, when the bridge was near completion and the net failed under the stress of a scaffold that had fallen. The workers' platform that was attached to a rolling hanger on a track collapsed when the bolts that were connected to the track were too small and the amount of weight was too great to bear. The platform fell into the safety net, but was too heavy and the net gave way.

Two out of the twelve workers survived the 200-foot (61 m) fall into the icy waters, including the 37-year-old foreman, Slim Lambert. Nineteen others who were saved by the net over the course of construction became members of their Half Way to Hell Club.

During the bridge work, the Assistant Civil Engineer of California Alfred Finnila had overseen the entire iron work of the bridge as well as half of the bridge's road work.

Picture Courtesy:
Saptarshi Dutta
(2nd Year, Sec-A)

SUDOKU

The Rules of Sudoku:

- Each row, column, and nonet can contain each number (typically 1 to 9) exactly once.
- The sum of all numbers in any nonet, row, or column must match the small number printed in its corner. For traditional Sudoku puzzles featuring the numbers 1 to 9, this sum is equal to 45.

Puzzle 1 (Easy, difficulty rating 0.39)

					2		4	9
				1	5			2
9	5		8	3		6		
	1	9				7		
2								3
		8				1	5	
		4		9	6		1	5
5			4	7				
3	2		5					

Puzzle 2 (Easy, difficulty rating 0.40)

		4				9	5	
		7		5	8		3	
		2		3			6	8
		9	5	8				
			2		4			
				6	3	4		
1	7			4		5		
	2		6	9		8		
	4	8				1		

Puzzle 3 (Hard, difficulty rating 0.65)

4				2				
		2		5	3		1	
	7	5	6		9	4		8
8				7				
	1						9	
				6				1
5		6	7		2	1	4	
	4		5	3		2		
				9				5

Puzzle 4 (Medium, difficulty rating 0.59)

			8	3			2	
	2		7		6	3	9	
					2	1		
	7	6		5			3	
4								6
	5			7		9	8	
		4	9					
	8	7	4		5		6	
	1			2	7			

SOLUTIONS

Puzzle 1 (Easy, difficulty rating 0.39)

1	8	3	7	6	2	5	4	9
6	4	7	9	1	5	8	3	2
9	5	2	8	3	4	6	7	1
4	1	9	3	5	8	7	2	6
2	6	5	1	4	7	9	8	3
7	3	8	6	2	9	1	5	4
8	7	4	2	9	6	3	1	5
5	9	1	4	7	3	2	6	8
3	2	6	5	8	1	4	9	7

Puzzle 2 (Easy, difficulty rating 0.40)

8	3	4	7	2	6	9	5	1
6	9	7	1	5	8	2	3	4
5	1	2	4	3	9	7	6	8
4	6	9	5	8	7	3	1	2
7	5	3	2	1	4	6	8	9
2	8	1	9	6	3	4	7	5
1	7	6	8	4	2	5	9	3
3	2	5	6	9	1	8	4	7
9	4	8	3	7	5	1	2	6

Puzzle 3 (Hard, difficulty rating 0.65)

4	6	1	8	2	7	9	5	3
9	8	2	4	5	3	7	1	6
3	7	5	6	1	9	4	2	8
8	9	3	2	7	1	5	6	4
6	1	7	3	4	5	8	9	2
2	5	4	9	6	8	3	7	1
5	3	6	7	8	2	1	4	9
1	4	9	5	3	6	2	8	7
7	2	8	1	9	4	6	3	5

Puzzle 4 (Medium, difficulty rating 0.59)

7	4	9	8	3	1	6	2	5
5	2	1	7	4	6	3	9	8
3	6	8	5	9	2	1	7	4
8	7	6	2	5	9	4	3	1
4	9	2	1	8	3	7	5	6
1	5	3	6	7	4	9	8	2
2	3	4	9	6	8	5	1	7
9	8	7	4	1	5	2	6	3
6	1	5	3	2	7	8	4	9

Submitted by: Priyam Sur (3rd Year, Sec-B)

Distinguished Lecture Program

- **DISTINGUISHED LECTURE PROGRAMME on "Cooling Towers"**

The Department of Civil Engineering, Heritage Institute of Technology had organized a "Distinguished Lecture Programme" on 30/03/2017 for the departmental students at 3:00p.m. in AV Hall.

In this programme, Mr. Ranjit Kumar Banik, Principal Engineer (Civil), Paharpur Cooling Towers Ltd. Delivered a lecture and discussed about various types of Cooling Towers, that are being used in steel plants, Mega Thermal plants, etc.

He described it through 3D modeling with various design aspects, calculations and construction steps with the help of actual photographs from the project sites.

Interactive session with the students was very much fruitful and the students have shown their keen interest on this subject.

The session was concluded with a vote of thanks to Mr. Banik.

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PAHARPUR COOLING TOWERS LTD
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Kolkata - 700 027, INDIA
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One Day Workshop on “Emerging Trends in Civil Engineering” conducted on 22.04.2019 in SEMINAR HALL

One –day workshop was conducted by CE department on “Emerging Trends in Civil Engineering”.

We are extremely thankful to our esteemed speakers, who are experts from respective industry persons and also indebted to Prof. Subhshankar Chowdhury, Workshop Co-ordinator.

Departmental Student Achievement

Ranjan Kumar Gupta, B.Tech student of 2nd year Civil Engineering Department has made the department proud.

Some of his achievements:

Our students of Heritage Institute of Technology are doing wonders in the area of innovation and entrepreneurship!!

Recently our students Ranjan Kumar Gupta (B.Tech, 2nd Year, CE) and Anushka Nayak (B.Tech, 3rd Year, EE) has been selected by NIT, Durgapur for Festival of Innovation & Entrepreneurship (FINE) which was organized by NIF (National Innovation Foundation) and was inaugurated by the Hon'ble President of India, Shri Ram Nath Kovind.They also met Prof Anil Kumar Gupta, professor of IIM, Ahmedabad.

Yet, again a proud moment for all of us !!

The whole team comprised of Ranjan Kumar Gupta (B.Tech, 2nd Year, CE) and few other students of Heritage Academy participated HULT PRIZE Regional Summit which was recently held at Ho Chin Minh city, Vietnam.

With All Your Blessings..