



VUCA

CHRONICLES

ADA LOVELACE

FIRST COMPUTER PROGRAMMER

1815-1852

Volatile **U**ncertain **C**omplex **A**mbiguous

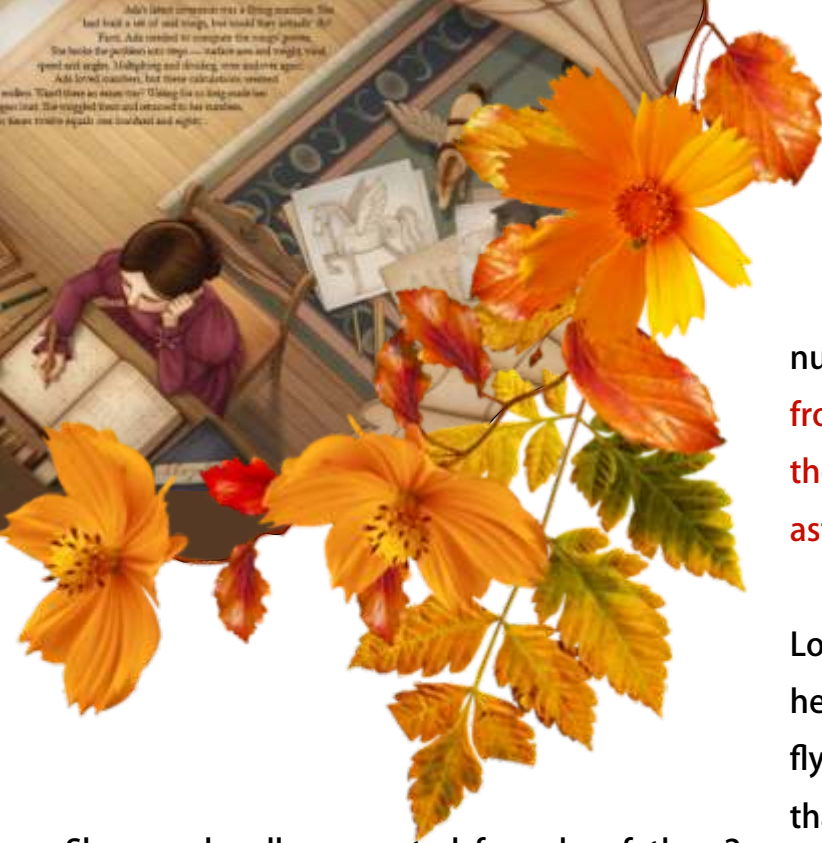
Ada Lovelace

By Avni Sethi, Grade 6, SNS Faridabad



Childhood —

Each year in October, Ada Lovelace Day celebrates women in science. It's fittingly named after the British mathematician known as the first computer programmer. Ada Lovelace originally named Augusta Ada King was born to the famous poet Lord Byron and Anne Isabella Noel Byron.



numbers and language. She received instruction from William Frend, a social reformer; William King, the family's doctor; and Mary Somerville, a Scottish astronomer and mathematician.

Lovelace, sickly for much of her childhood, spent her time dreaming of inventions, such as a bird-like flying machine, and performing the calculations that might make them possible.

Around the age of 17, Ada met Charles Babbage, a mathematician and inventor. The two became friends, and the much older Babbage became as a mentor to Lovelace. Through Babbage, Lovelace began studying advanced mathematics with University of London professor Augustus de Morgan.

Lovelace was enraptured by Babbage's ideas. Known as the father of the computer, he invented the difference engine, which was meant to perform mathematical calculations. Lovelace saw great

She was legally separated from her father 2 months after birth so she never knew her father personally.

Lovelace had an uncommon upbringing for an upper class girl in the mid-1800s. At her mother's demand, tutors taught her mathematics and science. Such challenging subjects were not standard fare for women at the time, but her mother believed that engaging in rigorous studies would prevent Lovelace from developing her father's moody and unpredictable temperament.

Lovelace was also forced to lie still for long periods of time because her mother believed it would help her develop self-control.

Education –

From early on, Lovelace showed an interest in



original article. Her work was published in 1843, in an English science journal. Lovelace used only the initials "A.A.L.," for Augusta Ada Lovelace, in the publication.

potential in Babbage's "analytical machine," an early prototype of a computer, and created the first algorithm for it.

Her notes on Babbage's "engine" contain what many believe to be the first computer program. Lovelace's vision of the machine's expansive capabilities went far beyond the basic calculations done by Babbage and others and anticipated the great role computers would come to play in our society.

Later Lovelace was asked to translate an article on Babbage's analytical engine that had been written by Italian engineer Luigi Federico Menabrea for a Swiss journal.

She didn't only translate the original French text into English but also added her own thoughts and ideas on the machine. Her notes ended up being three times longer than the

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The Analytical Engine
 Lovelace's program turned a complex formula into simple calculations that could be encoded on punched cards and fed into Charles Babbage's Analytical Engine, a mechanical computer that he designed but never built. She published it in 1843, a century before the modern computer age.

"I want to put in something about Babbage's Number, in one of my Notes, as an example of how an explicit function may be worked out by the engine, without having been worked out by human head and hands first."

$$e^x - 1 = \frac{x}{1 + \frac{x}{2} + \frac{x^2}{2 \cdot 3} + \frac{x^3}{2 \cdot 3 \cdot 4} + \&c.}$$

A Universal Computer
 Lovelace did more than write the first computer program. She was also the first person to realise that a general purpose computer could do anything, given the right data and instructions.

"The Analytical Engine weaves algebraic patterns just as the Jacquard loom weaves flowers and leaves."

"Supposing, for instance, that the fundamental relations of pitched sounds in the science of harmony and of musical composition were susceptible of such expression and adaptations, the engine might compose elaborate and scientific pieces of music of any degree of complexity or extent."

Augusta Ada King, Countess of Lovelace
 Born: 10 December 1815
 Died: 27 November 1852

Ada's Algorithm



Charles Dickens. Later Lovelace died from uterine cancer in London on November 27, 1852. She was buried next to her father, in the graveyard of the Church of St. Mary Magdalene in Hucknall, England.

Legacy -

Lovelace's contributions to the field of computer science were not discovered until the 1950s. Her notes were reintroduced to the world by B.V. Bowden, who republished them in *Faster Than Thought: A Symposium on Digital Computing Machines* in 1953. Since then, Ada has received many posthumous honors for her work. In 1980, the U.S. Department of Defense named a newly developed computer language "Ada," after Lovelace.

In her notes, Lovelace described how codes could be created for the device to handle letters and symbols along with numbers. She also theorized a method for the engine to repeat a series of instructions, a process known as looping that computer programs use today. Lovelace also offered up other forward-thinking concepts in the article. For her work, Lovelace is often considered to be the first computer programmer.

In 1835, Lovelace married William King, who 3 years later became The Earl of Lovelace. She then took the title of Countess of Lovelace. They shared a love of horses and had three children together. From most accounts, he supported his wife's academic attempts.

Lovelace and her husband mingled with many of the interesting minds of the times, including scientist Michael Faraday and writer Charles



Nasa's Data Sonification Project

By Vikhyat Yadav, Grade 7, SNS Noida



NASA's Chandra X-ray Center (CXC) has launched a new "sonification" project to convert celestial symbols into sound, converting digital telescope numbers into jaw-dropping images to attract the eye of the universe.

People can now "feel" the picture of the galaxy center, the supernova Cassiopeia A, and the pillars that formed the nebula in the 26,000-year-old region of Earth.

NASA's Chandra X Observatory, the Hubble Space Telescope, and the



bulk before converting it to images. An image is a visual representation of light and illumination of different wavelengths in space and the human eye.

The Chandra Project created a party in heaven by translating the same information into sound. Feet and mass are used to show the brightness and position of the cosmic body or vision. To date, Project Chunar Observer has completed three major celestial models: the Galaxy Center, the Caspian A-Column, and the Nebula.

Spitzer Space Telescope have collected the data.

What is data sonification?

Data sonification means the use of critical sounds to represent real data. Simply put, it is a record of visual information. For example, NASA's Lunar Project recently published information on the use of popular music technology. With the help of this data sonification project, users can now experience multiple visualizations captured by a local image of audio sound. Constellations, dust clouds and black holes can also be felt from above.

How did NASA translate astronomical images into sound?

NASA's Space Telescope collects digital data in





The Galactic Centre

The first example of a Galactic Center is the Galactic Circulation Center. Scientifically, it is white and comprises of a cloud of dust and gas, especially the larger black hole called Ark A * that is four million times the amount of sunlight.

They base these images on data collected from the Chandra X-ray Observatory, Hubble Space Telescope, and Spitzer Space Telescope. Use visible light and infrared light for demonstration.

Translation begins on the left and then on the right. Stars and other combined resources have different ratings. They all form a cross at the bottom right of arc A * where the image is located.

Cassiopeia A

Cassiopeia A, about 11,000 light-years north of Cassiopeia, is one of the most famous starbursts. About 325 years ago, this image showed a wide range of colors. Every color has something. They use red for silicon, yellow for sulfur, purple denotes iron, while green used for calcium.

Unlike the Galactic Centre that moves from left to right, the sound moves from the center of the circular structure.

The Pillars of Creation

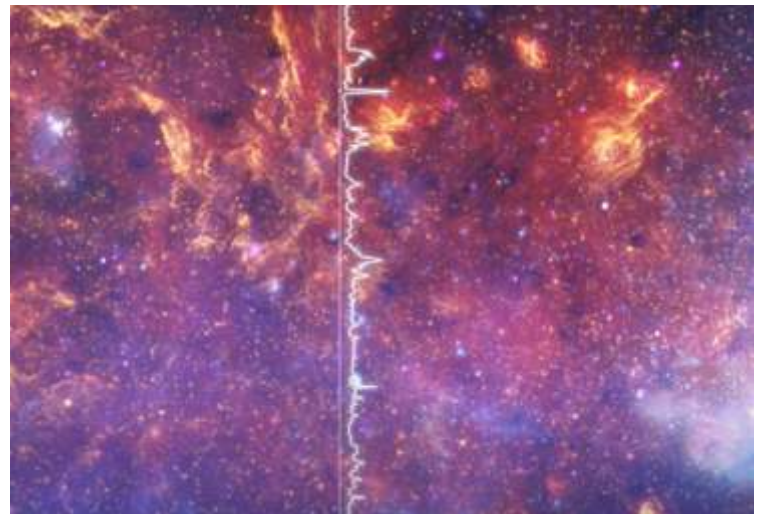
The backbone of creation is in the heart of Eagle Nebula, Messier 16. The Hubble Star Telescope is used to representing large buildings that contain small buildings that contain dust and dirt. Here the different colours are blue oxygen. Red shows sulphur and substances such as nitrogen and hydrogen.





blind communities - to be aware of space information.

As the center of the galaxy, this translation continues from left to right. However, the sound has a wonderful effect on the appearance and sound of the stars and the faint noise from the gas clouds. According to a recent NASA article, users can collaborate with various TV manufacturers. You can use different channels to listen to 3 pictures at once.



Why is this sonification project useful?

The Chandra X-ray Center led the sonification project in collaboration with NASA's University Learning Program (UOL), which aims to "integrate NASA research data into the learning environment." NASA has been working for years to make the site information available to a wider audience.

According to a report by Team Chandra, Sonic programs have allowed viewers - including



The Lady in the blue

By Akshita Gossain , Grade 7, SNS Gurugram

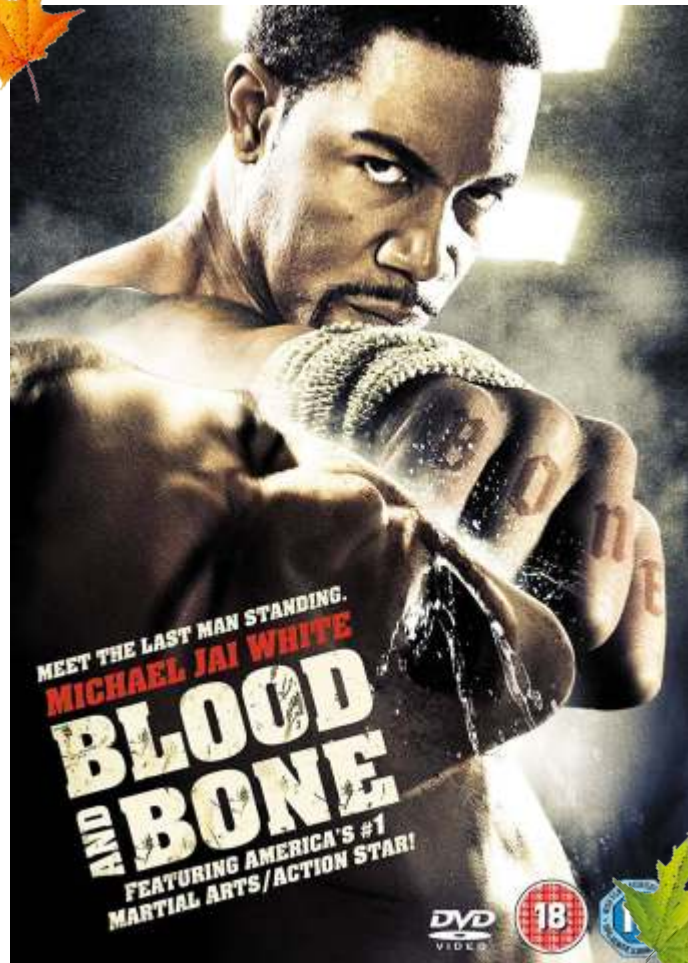


On a dark blue night with stars that gleamed
Everything was calm or so it seemed
The dark blue sea washed over the shore
The lady in the blue cloak could not ask for more
She opened her arms full of dark blue magic
I knew this was going to be very tragic

She stepped into the sea and walked in the blue water
He was nowhere to be seen, the man who taught her
Slowly and carefully she looked behind
Her eyes weren't cruel, they were kind
I only saw her once in my life
But then she dissappeared in a blue supernova light

Book Review: Blood and Bone

By Anurag Gupta, Grade 8, SNS Gurugram



Let me start off by saying that, Children of Blood and Bone is a book you will not regret reading, no matter where your interests lie.

This book is much more than just simple fantasy, you will see it tackle a lot of heavy themes throughout the chapters, without making it all about

like her mother, who was killed by the kingdom soldiers for being a maji. The maji face a lot of oppression from the kingdom's people, and this story is so amazingly written that you can't help but cry with every character, and understand everyone's motivation.

those themes. Rather than preaching, the author deftly weaves things such as racism, discrimination and genocide into a story where all this will make you FEEL from the inside for the characters, realise how flawed this imaginary world is, and yet so similar to ours.

The plot is, how to put it, genius, yet similar enough to conventional fantasy that we are comfortable reading the book and bask in its familiarity. It's a story inspired from west-african mythology, set in a world where there are people called "maji", blessed with power of gods and having control over various aspects of nature, such as Life, Death, Time and the four elements.

The people who DON'T have these powers are scared of maji which leads them to kill all of them, save a few of course. Like our protagonist, Zélie, who has the magic of Life and Death, just

Along with the princess of the kingdom, Amari, Zélie goes on a quest to stop all this oppression and tyranny, and bring the maji back. Believe me, read the book, you will get up only after you've finished it.

The Fall

By Disha Jain, Grade 6, SNS Noida



It's the afternoon grace,
Sunlight falling right on the white floor,
As the light turns yellow the flowers embrace,
This weather feels pure
We wear cardigans of purple, pink, green and white,
Sitting in our balconies we look up – see a kite,
The kite may go anywhere – no one knows where,
But we just want to sit and stare



The sun can be seen with bare eyes,
It's gleaming on my shiny plate,
And slowly steadily the mist gets even more yellow
Oh I will call this the yellowish winter



The outer layer of my snake plant,
Shines bright as the sun throws light,
One won't experience that in the late night
I have an intense feeling to chant!

Sounds just stay where they are,
They don't echo,
This is natural deco!
And feels sober,
It is quite like October,
But.. it is a different weather!

The plants become dormant,
Leaves become alluring,
So much like adornment!
Oh the plants will grow- that's assuring



The birds whistle and take out unusual sounds,
They are high in the sky but their voices reach the
grounds,
There are a few other animals whistling,
And we humans love dancing!

It's hard to guess this weather,
Oh it's when a bird showers a feather,
This is when the yellowish bluish winter makes up,
This is when "the fall" shows up!!





I wrote this poem while I was in my room and staring outside - at the lovely flowers, the wintry season and as the change from winter to summer was taking place.

*This was the view from my room..
the view of my Balcony*

And hence, I have named this poem - the fall. It talks about how time changes and the beauty of nature changes things that just take place in front of our eyes!

But sometimes it gets hard to notice them! So, this is something that happens in our day to day life and nature is a great example of that!

"This weather won't stay for long!"



The Tigray War

By Ananya Taneja, Grade 7, SNS Gurugram



1. When did the Tigray War start?

The Tigray War first started on November the 4th 2020 in the Tigray region of Ethiopia between the Tigray Regional Government, led by the TPLF, also known as the Tigray People's Liberation Front and forces supporting Ethiopian Prime Minister, Abiy Ahmed including president Isaias Afwerki's Eritrean Forces.



2. The History...

Following the end of the Ethiopian Civil War in 1991, Ethiopia became a dominant party state under the rule of the EPRDF also known as the Ethiopian People's Revolutionary Democratic Front.

It is a coalition of ethnically- based parties. The most powerful and and influential member was the TPLF (Tigray People's Liberation Front) and the Chairman, Meles Zenawi until his demise in 2012. The TPLF was a part of the Ethiopian governance up until 2019 because of its refusal to merge into the Prosperity Party.

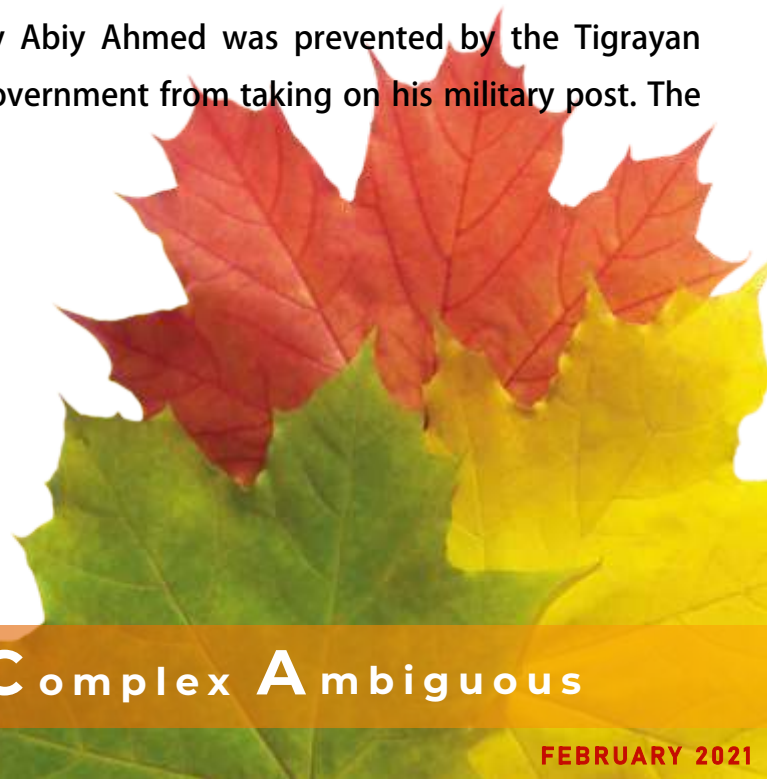
Last year, tensions between the TPLF and the Ethiopian government escalated in months before the November Tigray Military Intervention. The Prime Minister, Abiy Ahmed accused the TPLF Party members in the

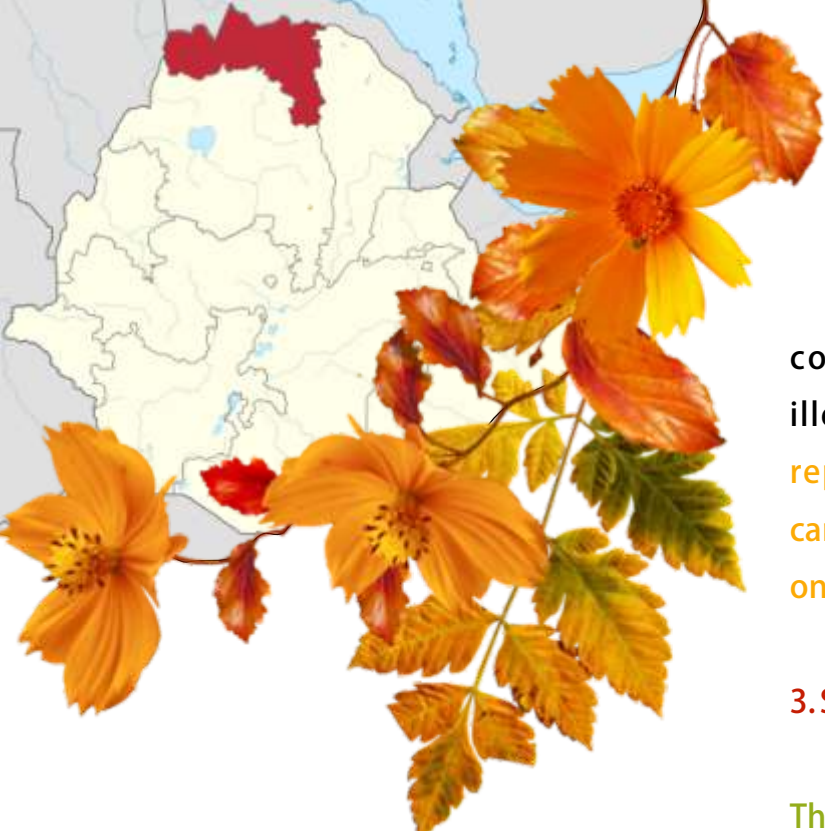
government of undermining his authority. By contrast, the Tigray authorities saw the refusal to recognise the September 2020 elections for the Tigray parliament as the reason for the outbreak of the conflict.

The Ethiopian government considered the September Tigray Election to be illegal. Ethiopian elite units were transported to Gherghera base near Asmar "as part of a security pact" by the Prime Minister and Afwerki in a plan to "strike out of existence the TPLF", according to former Eritrean Minister of Defence, Mesfin Hagos.

In late October, the ERC stated that it was trying to mediate between the federal and Tigrayan governments, but that pre-conditions set by both sides were blocking progress.

As tension continued to grow, a general appointed by Abiy Ahmed was prevented by the Tigrayan government from taking on his military post. The





consider "the incumbent" constitutionally illegitimate after 5 October. TPLF proposed replacing the government by a technocratic caretaker government as detailed in a plan posted on Facebook by the COEFF.

3. Spillover in South Sudan...

Thousands of people were believed to have been killed in the conflict and around 44,000 have fled to Sudan. On 29 November, claims that South Sudan was harboring Debretsion, led to the Ethiopian ambassador to South Sudan abruptly returning to Ethiopia, and South Sudanese diplomats in Ethiopia allegedly being given 72 hours to leave the country.

4. The alleged Somali involvement...


Somalia was involved in the Tigray War according to former head of the Somali National Intelligence and Security Agency, Abdilsalan Guld. Guld said that the soldiers, aged from 20 to 30 years old, were

day prior to the TPLF's 4 November Northern Command attacks, the federal parliament of Ethiopia had suggested designating the TPLF as a terrorist organisation

The Constitution of Ethiopia states in Article 39.1, "Every Nation, Nationality and People in Ethiopia has an unconditional right to self-determination, including the right to secession."

Article 62.9 grants House of Federation the right to "order Federal intervention if any State, in violation of Constitution, endangers the constitutional order."

In late September 2020, the TPLF stated that the constitutional term limit of the HoF, the House of People's Representatives (HoPR), the Prime Minister and the Council of Ministers was 5 October 2020, and that for this reason, it would

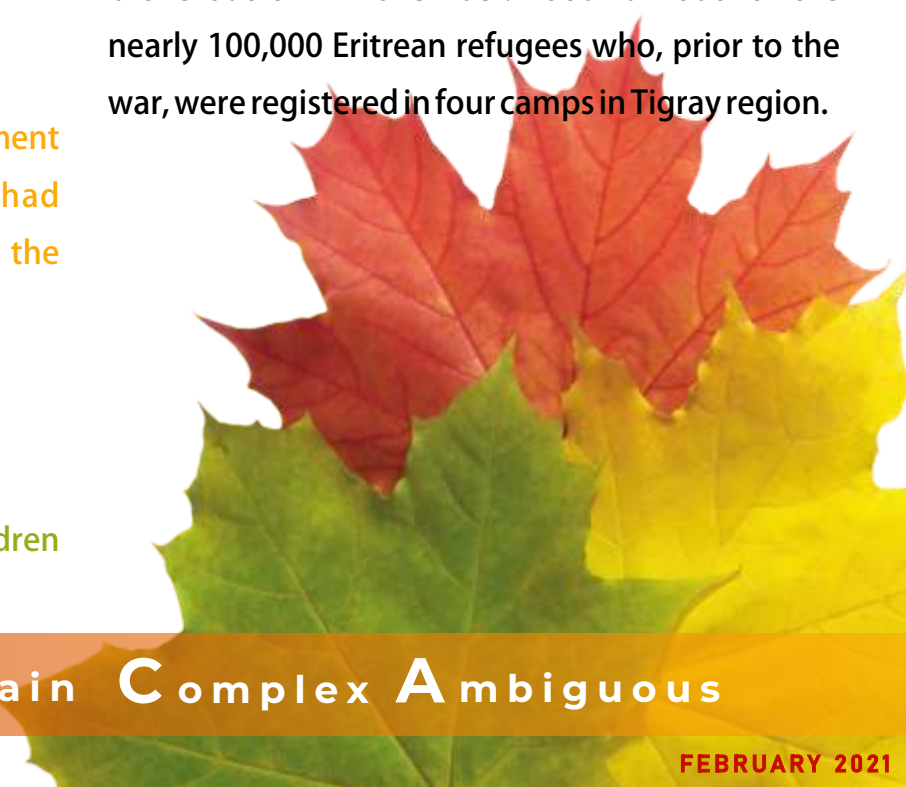


are cut off from desperately needed aid and humanitarian assistance.

The Ethiopian federal government has strictly controlled access to the Tigray region (since the start of the conflict), and the UN said it is frustrated that talks with the Ethiopian government have not yet secured adequate humanitarian access.

These include, "food, including ready-to-use therapeutic food for the treatment of child malnutrition, medicines, water, fuel and other essentials that are running low" said UNICEF. As of December 2020, the UN estimates more than one million people have been internally displaced by the fighting.

Communications and travel links remained severed with the Tigray region since the deadly conflict broke out on 4 November. Food ran out for the nearly 100,000 Eritrean refugees who, prior to the war, were registered in four camps in Tigray region.



secretly taken from Mogadishu and sent to Asmara for military training. Guld stated that 370 of the Somali troops trained by Eritrea were killed in Tigray and hundreds of others were severely injured.

On 18 January 2021, the head of Somalia's parliamentary committee on foreign affairs asked the Somali president to investigate claims by family members that their sons had gone off to fight in Ethiopia and are now missing.

On 19 January 2021, the Somalian government denied the claim that Somali troops had trained in Eritrea and then deployed in the Tigray Region of Ethiopia.

5. A humanitarian crisis...

According to the UN, some 2.3 million children



return to normality. Soldiers fired at the protestors, killing one.

The head of the transport division of Ayder Referral Hospital and his son were beaten by soldiers, and stated that there were many injured who were not being brought to the hospital.

On 2 February 2021, 20,000 of the refugees, mostly from the Hitsats and Shimelba camps, remained unaccounted for, according to the United Nations High Commissioner for Refugees.

The U.N. has in November 2020 reported that people in Tigray are fleeing their capital city. The Ethiopian government had warned them of "no mercy" if residents didn't move away from the TPLF leaders, whom they accused of hiding among the population.



6. Protests...

Tuesday 9 February 2021, when religious leaders started a visit to Mekelle organised by federal authorities to show that the situation was "normal", protestors used stones and burnt tyres to block central parts of the town in objection to the claim that the situation had



World War II

By Kashika Dhingra, Grade 7, SNS Gurugram



*"Hatred does not cease by hatred, but only by love.
That is the eternal rule."*

~ Buddha

WW2: for many reasons, the most heinous, monstrous war in history.

I was first introduced to this term 'holocaust' by my mother. She was reading a book one day, and I asked her how the story was, she replied saying "saddening". I remember asking her why, to which she said, "it's about the Holocaust". I was intrigued by this term, and since I had access to the internet, I researched upon it a bit further.

At first, I was disturbed, and mostly confused on how one single man



could hold the power to influence almost an entire country and diminish 2/3rds of the population of a race. **You might have guessed it by now, this man I am referring to is the one and only Adolf Hitler.**

The name that sent shivers down people's spines, the name of a person so extremely powerful and full of hatred, the name of a human who seemed so inhuman...Unlike most articles I have read on this topic, **I will make it more about the suffering of the Jewish race rather than the Nazis and their political ideas.**

The war began in 1939, on 1st September, the day German forces invaded Poland. **Hitlers policies since he began his rule in Germany, were always anti-Semitic and non-Jewish.** He promoted rumors about how Jews occupy more jobs, **leaving the Arians hungry and homeless, how they ate babies and fed on**

Christian blood. As you are probably aware, such religious ideas take over several people's minds immediately. He promoted his campaign off these rumors and how, if he became ruler, he would erase such problems. **The problems he refers to be the Jews themselves, not unemployment, homelessness or religious divides.**

I must admit, even though I hate this man to the very bone, his words held power of another kind. The way he spoke, he could convince you to jump off a cliff. As his campaign went on and on, as he gained more supporters, and power as well.

Now let us fast forward a couple months, when the idea of concentration camps was implemented, and hatred was spread across Europe further. Concentration camps such as Chelimo, Belzec, Sobador, Treblinka, Madanes and Auschwitz-Birkenau were the areas where most of the killing happened.



chambers which had deceiving shower like knobs, through which they were exposed to a deadly gas, killing hundreds in mere minutes.

The ones who made it inside the camp alive, were tattooed, numbered like some samples in a lab and their heads were shaven to reduce lice infestations. The methods used to kill other than the gas chambers, was to dig graves for their fellow Jews, build roofs and other tough work. You might think they would feed them well at least, but- no.

They were fed thin, watery soup made of cabbage and water, with sometimes, if you are lucky enough, some potatoes, otherwise, potato peels were the most you could expect. Sometimes they did not even get food for days. So, after a day of slaving away, they were either served boiled water, or nothing, some starving and dying because of the same.

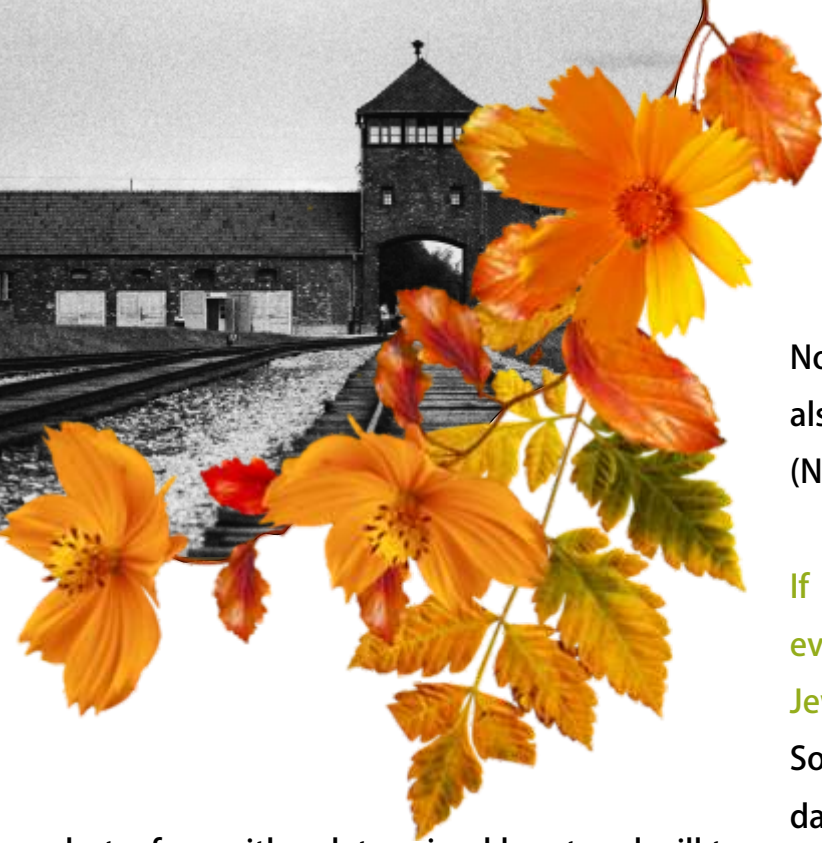
Jews were captured (all women, men, children, people of old age. No one was spared of this torture unless by death itself) and were taken to these mass extermination camps by cattle trains or carts. They were locked up in these for days with 2 buckets as a washroom inside the cart itself, for 300-500 people. As described by survivors, it smelt horrid, everyone was sweaty and cramped, people were constantly coughing and crying making it an even more saddening place.

When these people reached the entrance of the camps, they were separated into sections, women and girls went separately and men and boys too.

Women, men, children or babies too young or somehow incapable to do physically demanding work, were instantly sent to 'shower', to decrease panic, but were put in

At this point, even I would lose faith in the world,





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but a few, with a determined heart and will to tell their stories kept going.

In one case, as some Jews were exceptionally skilled, they were even hired as workers by some officers.

One smart wood worker, planned this detailed mission and build a bed frame for a Nazi officer, and somehow found a pen and paper and wrote the entire story of how Nazis were bringing thousands of people to camp, and killing , starving, making them do labor etc. and rolled the piece of paper and stuffed it into one of the parts of the bed , as they didn't think anyone would even get to know what was going on behind these wired camp doors after the war ended , and their innumerable deaths , lives would all be insignificant.

Not only were they tortured but some women were also harassed and sexually assaulted by the gestapo (Nazi police).

If all this was not disturbing enough, they killed everyone in front of an assembly of all the camp Jews to set an example and more fear than ever. Some family members had to watch their sons, daughters, fathers, mothers die in front of their own eyes, with their killers still treating them like vermin.

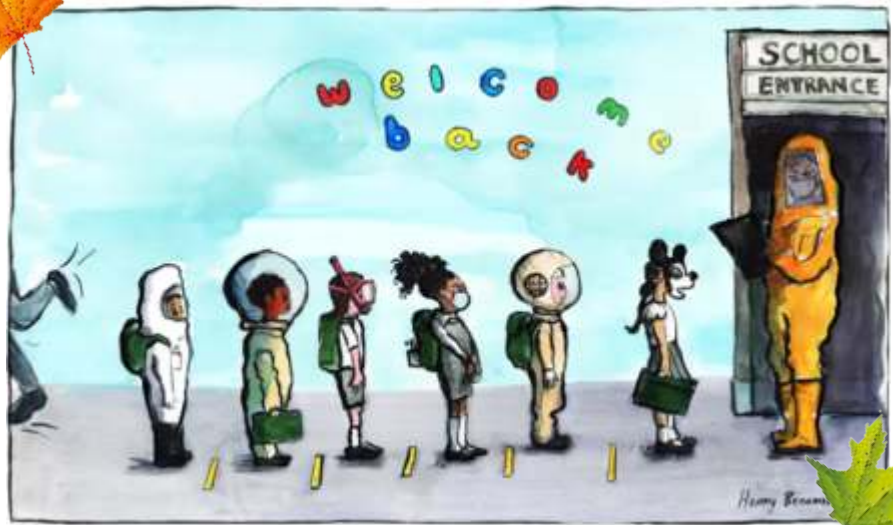
I do not know about you but just writing/ (reading) this was traumatizing for me; I do not understand the strength of those who survived this horrifying event.

I am glad this war, and this article are both over here, thanks for reading.



Should Schools Reopen?

By Shreeja Mallick, Grade 7, SNS Noida



Once Lon Watters rightly said, **“School is a building which has four walls with tomorrow inside it.”** School is where we learn and grow each day. **It's the guiding path towards our future with teachers to teach, mentors to guide, friends for fun and teamwork.** At school we incorporate confidence, knowledge, creativity and collaboration. It is an institution for excelling in academics and extracurricular activities.

The global pandemic has locked the school gates for a year now. **For the first time in history, kids desperately desire to go to school, whereas, parents stubbornly refuse to send them to school.** Nevertheless, all of us



miss school, don't we?

Though online classes were the only possible solution, it certainly lacked the physical presence of individuals that makes and builds the personality of the youth. **Everything is done in seclusion, within lonely four walls and in front of the screens with numerous restrictions. Monotonous, isn't it?**

It has been a tough time for our teachers, parents and ourselves. Staying home and staying safe, has made us realise the importance of physical schools.

The youth need to connect to one another and the world to learn while fostering their own emotional development and social wellbeing; and schools are the best and the most feasible way to engage in this kind of holistic learning. Those few rectangular infrastructures don't

only have knowledge within them, but also invincible friendships, loads of entertainment and a meaningful future for all.

Isn't it fun playing in huge grounds during recess, or sitting together chit chatting in dining areas? **This pandemic might have given us a whole new perspective on schooling, however, in my opinion, the more physically united and connected we are, the better we perceive and enjoy ourselves!** It is necessary to be present in a school infrastructure, as it brings in a sense of professionalism and responsibility.

The government has permitted schools to reopen. Unfortunately, the hazardous serial killer virus still exists, murdering numerous lives. **However, does that mean that we restrict ourselves from the physical world? We pause the developments and learnings?**



Physical presence in school is extremely essential for one's career and livelihood. In consideration of the current situation, the schools have brilliantly equipped themselves with the regulations; now the ball is in your court. Are you ready to go to physical school?

Malls are thronged with people and hotels with reservations, so why not schools? As per government orders, few essential rules are mandates during this period and have to be religiously followed.

Maintaining social distance, wearing masks and sanitizing hands are the most vital rules. The schools are seamlessly implementing these rules and have been able to create fruitful solutions for their insurance.

In schools the furniture's are well-covered, classrooms are spaced appropriately, daily sanitization takes place, students are asked to come to school in alternate batches to control the crowd, school transport and food is currently prohibited.

Various such mandates have been implemented and are rigorously followed.



The Bhopal Gas Tragedy Disaster

By Vats, Grade 8, SNS Gurugram



Bhopal disaster, chemical leak in 1984 in the city of Bhopal, Madhya Pradesh state, India. At the time, it was called the worst industrial accident in history.

On December 3, 1984, about 45 tons of the dangerous gas methyl isocyanate escaped from an insecticide plant that was owned by the Indian subsidiary of the American firm Union Carbide Corporation. The gas drifted over the densely populated neighbourhoods around the plant, killing thousands of people immediately and creating a panic as



government had properly cleaned the site. Soil and water contamination in the area was blamed for chronic health problems and high instances of birth defects in the area's inhabitants.

In 2004 the Indian Supreme Court ordered the state to supply clean drinking water to the residents of Bhopal because of groundwater contamination.

In 2010 several former executives of Union Carbide's India subsidiary—all Indian citizens—were convicted by a Bhopal court of negligence in the disaster.

tens of thousands of others attempted to flee Bhopal.

The final death toll was estimated to be between 15,000 and 20,000. Some half a million survivors suffered respiratory problems, eye irritation or blindness, and other maladies resulting from exposure to the toxic gas; many were awarded compensation of a few hundred dollars. Investigations later established that substandard operating and safety procedures at the understaffed plant had led to the catastrophe. In 1998 the former factory site was turned over to the state of Madhya Pradesh.

In the early 21st century more than 400 tons of industrial waste were still present on the site. Despite continued protests and attempts at litigation, neither the Dow Chemical Company, which bought out the Union Carbide Corporation in 2001, nor the Indian





SHIV NADAR SCHOOL

Education for Life



Volatile **U**ncertain **C**omplex **A**mbiguous