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- Promoting collaborative research through special interest groups, state of the art research labs and industry institute interactions.
- Facilitating value added courses to produce highly competent and socially conscious information technology professionals and entrepreneurs

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NOTE FROM THE EDITOR

Greetings everyone! We are delighted to meet you with iTunes' latest edition of this month! India is one of the most diverse countries with its various religions, traditions and languages. It is also one among the oldest countries in the world. We, as proud Indians never run out of things to say about our beautiful land full of wonders. And this is what this month's edition is all about! We have a number of student articles that will enrich your knowledge about India. By the end, we hope that you will be left with feelings of immense pride and happiness about being an Indian. Happy reading!

- Rachel Aradhana D

TAJ MAHAL

HISTORY OF ARCHITECTURE

- The Taj Mahal represents the finest and most sophisticated example of Mughal architecture.
- The distraught Mughal Emperor Shah Jahan commissioned the mausoleum upon the death of his favourite wife Mumtaz Begum.
- Today it is one of the most famous and recognisable buildings in the world and the white domed marble mausoleum is the most familiar part of the monument.
- Taj Mahal is an extensive complex of buildings and gardens that extends over 22.44 hectares and includes subsidiary tombs, waterworks infrastructure, the small town of Taj Ganji' and a 'moonlight garden' to the north of the river.
- Construction began in 1632 AD, on the south bank of the River Yamuna in Agra, and was substantially complete by 1648 AD
- The architects Ustad Ahmad Lahauri and Mir Abd ul Karim.

CONCEPTS, SYMBOLISM AND INTERPRETATION

- In Dimensional organisation- The Taj complex is ordered by grids Symmetry and geometric planning played an important role in ordering the complex.
- In the Taj Mahal, the hierarchical use of red sandstone and white marble contributes manifold symbolic significance
- Red sandstone also had significance in the Persian origins of the Mughal empire.
- In the Taj Mahal the relative importance of each building in the complex is denoted by the amount of white marble that is used.

TAJ MAHAL GATEWAY

- Spread over a width of 150 feet and standing tall at 100 feet, the Taj gateway is entrance to a monument.
- Made of red sandstone, this three storeyed building is topped by cupolas or chattris.
- As grand an entrance as this is, it was never used by Shah Jahan and the royal party, as they always arrived from the Agra Fort by boat.
- Inscriptions start at the bottom and but miraculously look the same size as your eyes travel up the arch.

FINAL OF DOME

- The main finial was originally made of gold but was replaced by a copy made of gilded bronze in the early 19th century.
- The summit of the gold gilded finial perched at almost 220 feet from the ground, gives a finishing look to the Taj Mahal.
- The motif is a Hindu symbol with bent lotus leaves mounted on a "kalash" with a coconut on top.

IWANS

- The tradition of having iwans in both residential and public buildings found their way into Mughal architecture
- By definition, iwans are vaulted spaces covered by three sides and open from one having an ornate gateway that was called a "pishtaq".
- The monument has 28 iwans in all, with four main iwans on the four faces of the structure.
- The other 24 iwans are identical in size with four on each face and two on the angled sides.

TOMB

- The tomb is the central focus standing on a square plinth
- It consists of a symmetrical building with an iwan topped by a large dome and finial.
- Its basic elements are Persian in origin
- On each of these sides, a huge pishtaq, orvaulted archway, frames the iwan with two similarly shaped, arched balconies stacked on either side.

ORNAMENTATION AND MOULDINGS

- The Taj Mahal depicts elaborate carvings with around forty three different kinds of gems used.
- The carving at the Taj Mahal done using a technique called "manabbatkari", which essentially is a carving that stands out from a flat surface.
- The manabbat kari process involves drawing the flower patterns directly on the marble with henna and then using fine chisels to carve them out.

MATERIALS, COST AND CALLIGRAPHY

- The Taj Mahal was constructed using materials from all over India and Asia. The buildings are constructed with walls of brick and rubble inner cores faced with either marble or sandstone locked together with iron dowels and clamps.
- Much of the calligraphy is composed of florid thuluth script, made of jasper or black marble, inlaid in white marble panels.
- Higher panels are written in slightly larger script to reduce the skewing effect when viewed from below.
- Throughout the complex, passages from the Qur'an are used as decorative elements.

MOSQUE-FLOORING AND CEILING

- The flooring of the mosque is beautifully laid out.
- Giving a carpet feel, the floor area is inlaid with red marble stone in the pattern of prayer mats.
- The ceiling of the mosque has an ornate display of beautiful geometric patterns.
- The white inlay work stand out splendidly against the red sandstone background.

FACTS AND MYTHS

- A total of 28 types of precious and semiprecious jewels are set in the marble.
- Shah Jahan was put under house arrest in 1658 by his son, Aurangzeb. So he was only able to view the Taj Mahal from his window for the last eight years of his life before being entombed there.
- The Taj Mahal was covered with a huge scaffold during the second world war, so that it looked like a stockpile of bamboo to bombers.

- Legend has it that Emperor Shah Jahan intended to build another Taj Mahal in black marble across the river but a war with his sons interrupted these plans.

CONCLUSION

- In conclusion, every Indian takes pride in the beauty of the Taj Mahal and its heritage.
- This monument is famous all over the world. Around 2 to 4 million people come to visit the Taj Mahal every year.
- The beauty and history of the monument attract people the most and makes it famous all over the world.

- SOWMYA V
19IT099

DWARKA

INTRODUCTION

- The ancient city of Dwaraka, situated on the extreme West Coast of Indian territory.
- Dwaraka is the capital of the western coast of Saurashtra (Gujarat).
- It occupies an important place in the cultural and religious history of India.
- The first clear historical record is dated 574 A.D. and occurs in the Palitana Plates of Samanta Simhaditya

HISTORY OF ANCIENT DWARAKA

- The town has association with Lord Krishna, who founded this town by reclaiming 12 Yojans.
- Dwarka was the kingdom of Lord Sri Krishna.
- Krishna built this opulent city in order toprotect the residents of Mathura while he fought with Jarasandha and Kalayavana.
- Dwarka is one among the char dhams in India.
- The Yadavas, who had migrated from Mathura, established their kingdom here when the city was known as "Kaushathali".
- It was during this period that the city underwent rebuilding and was named Dwarka.
- It is also one among 108 Divya Deshams glorified in the Divya Prabhandas of Alwarsanas of land from the sea.

WHY KRISHNA CONSTRUCTED DWARKA CITY?

• King Kamsa had two queens Asti and Prapti.
• They were the daughters of Jarasandha, the king of Magadha Province (Currently Bihar).

- After the death of Kamsa, his two wives became widows and they returned to the shelter of their father since Kamsa had no grown-up sons.
- The queens explained the death of Kamsa and their awkward positions to their father Jarasandha.
- The king was ashamed to hear the pitiable condition of his daughters and decided to kill all the members of Yadu Dynasty.
- For the safety of people Krishna and Yadavas shifted from Mathura to Dwaraka
- Land was given by Samudra Deva and city was built by Vishwa Karma

DISCOVERY OF DWARKA

- Under the guidance of Dr. Rao a great marine biologist along with a team of underwater explorer discovered ruins of Dwaraka
- This team carried out archeological Expeditions between 1983-1992 and articles and antiquities were sent for Carbon Dating
- They were found belonging to 15th to 18th century BC

PRESENT-DAY DWARKA

- Dwaraka is a municipality of Devbhoomi Dwaraka district in the state of Gujarat in northwestern India. It is located on the western shore of the Okhamandal Peninsula on the right bank of the Gomti River
- The city's Dwarkadhish Temple dedicated to Krishna was originally built around 2,500 years ago, but was destroyed by Mahmud Begada rulers and subsequently rebuilt in the 16th century.

- As an important pilgrimage center for Hindus, Dwarka has several notable temples, including Rukmini Devi Temple, Gomti Ghat, and Bet Dwarka.
- On 7 September 1965, during the Indo Pakistani War of that year, the city was briefly attacked by Pakistan Navy forces in Operation Dwarka
- Dwarka is one of 12 heritage cities across the country selected under the Heritage City Development and Augmentation Yojana (HRIDAY) scheme of the Government of India to develop civic infrastructure

CHAR DHAMS

- Char Dham are the names of four pilgrimage sites in India that are immensely respected by Hindus.
- It comprises Badrinath, Dwarka, Puri, and Rameswaram.
- It is considered highly sacred by Hindus to visit the char Dham during one's lifetime.

UNDERWATER CITY

- Underwater ancient city off the coast of Bet Dwarka has been proposed to be developed as a scuba diving site.
- This project is a joint initiative of Adventure Sports Ltd (ASL) and the Government of Gujarat, with an investment of Rupees 13 crores.
- This is believed to be the first effort anywhere in the world to exploit a submerged city for tourism.
- Water and beach sports are also being promoted by the state government, and there are proposals to further promote aero and submarine sports.

- The implications of accepting the archeologists' finds as proof that the sunken city is indeed the legendary Dwarka would be very significant for the understanding of what the Mahabharata is.
- It would no longer be merely a book of myths and legends, but in fact, at least to some extent, a genuine account of past events.
- Even if we don't know what the cultural background of the people is, if it does happen to be a city that is 9500 years old, that is older than the Sumerian civilization by several thousand years.
- It is older than the Egyptian, older than the Chinese.
- So, it would radically affect our whole picture of the development of urban civilization on this planet.

VIBHISHEAK L S
19ITI16

HERITAGE OF INDIAN CLOTHING: KANCHIPURAM SILK SAREES

INTRODUCTION

It's clear that Indian women love to drape her body in the 6 yards of sheer elegance that gives her hers best look in any festive or wedding occasion. Connotation for Kanchipuram Sarees gains special mention amongst all as it is one of India's alluringly exquisite saree originating from the district of Kanchipuram, Tamil Nadu which shines with radiance as it exhibits the formal celebration.

THE HISTORY WE KNOW:

The history of Kanjeevaram silk sarees can be traced back to Hindu mythology. It is said that the Kanjeevaram Silk Weavers are the descendants of Markanda, who was known for weaving clothes for the Gods themselves. Originating from a small town of Kanchipuram, Tamil Nadu this gorgeous weave has a history of more than 400 years. It is said that the two major weaving communities, the Devangas and the Saligars came all the way from Andra Pradesh and settled in the village of Kanchipuram. Utilizing their weaving skills they started weaving mesmerizing Kanjeevaram silk sarees including gorgeous designs of figures they saw on the temples around the village.

THE TRUE HISTORY:

The story of silk began more than five thousand years ago in the court of China's first emperor. It is said that a young concubine named Lei Tsu, by way of experiment, discovered the 'finest natural textile thread known to man'. Gradually a trade route to the west emerged known as 'silk road'. It wandered through hostile lands and ended thousands of miles away at market places in the middle east. For centuries only the Chinese knew the secrets of silk production and the exportation of silkworms was strictly forbidden. Around 140 BC silkworm eggs and and mulberry cuttings reached Khotan, in present-day Afghanistan, allegedly smuggled by a Chinese princess who went to marry the king and found the prospect of a silkless life unbearable. From then it went to India and a century later to Korea and Japan. Today, Bangalore, India produces the finest mulberry silk in the world and Kanchipuram produces the best known silk saree- The Kanjeevaram.Kanjeevaram doesn't only depend on weavers to be made, but also on several other industries. Below we explore all the steps involved in making a Kanjeevaram saree.

INTERESTING FACTS ABOUT THE SAREE:

- One of the most special features of Kanjeevaram silk sarees is that the Pallu and the borders are weaved separately and eventually join together.

- The zigzag pattern that joins both the parts is also known as the pitni. The Pallu of the Kanjeevaram saree is usually quite different in design and color from the body.

- The Kanjeevaram fabric is considered to be one of the most durable and strong fabrics. As the saree is made of three Silk threads twisted together with the silver wire it becomes more durable. Usually, a Kanjeevaram saree can be as heavy as 2 kilos.
- The designs of kancheevaram silk sarees are so unique. Starting from the beginning till now Kanjeevaram silk sarees include gorgeous mythological stories into the design along with stunning Temple figurines. They also have motifs from various temples and general paintings in the border of the saree. The body of these gorgeous beauties boats of Temple designs, stripes, and floral buttas.

STAGES OF PRODUCING A KANCHEEVARAM SILK SAREE:

1. Sericulture is the process of raising silkworms and harvesting cocoons. It is an agro-based industry and its major activities consist of food-plant cultivation to feed the silkworms which spin silk cocoons.
2. Most of the cocoons from the previous step are used in silk extraction, but some leave the cocoon as moths. The male moths will mate and die once the deed is done, while the females will stick around to lay about 200-300 eggs each. Women are usually employed for the reeling process. With advanced machinery silk is unwound from multiple cocoons at the same time.
3. Once the silk has been collected, it has to be prepared for dyeing. This involves washing and degumming of the silk yarn. Several women and men folk are involved in this process. Most of the dyes are obtained from natural resources.

4. The most characteristic feature about the Kanjeevaram is its Zari. This zari adds luster and essence to the Kanjeevaram structure. Zari is an even thread traditionally made of fine gold or silver.
5. One of the more creative aspects of making a Kanjeevaram saree is the designing part. This is the process in which the color combinations of the saree is decided.
6. **The weaving process:** Woven in pure mulberry silk each and every Kanjeevaram silk saree is a masterpiece in itself. It is a perfect blend of gorgeous silk from the south and the pure gold and silver Zari from Gujarat. In order to keep the thickness and stiffness of this fabric, the threads are dipped in rice water and sun-dried before using it. This is followed by interlocking the theme silver wire with the Silk threads. After this, the golden thread is used to complete the weave.

THE OPPRESSION FACED BY THIS CULTURAL HANDLOOM:

The Kanchipuram silk industry has managed to survive many highs and lows and has made its presence felt internationally. However, the biggest challenges faced by it today are undertaking modifications to suit changing customer preferences, use of modern technology and product diversification.
The government has undertaken a campaign to abolish child labor from the Kanchipuram silk industry. Under this campaign, committees have been formed to scrutinize saree-producing units. Some loom owners have been charged with making use of child labor. To discourage the use of child labor, the government has developed equipment that performs the job of a helper.

CONCLUSION

As India is a diversified country, so every state has its own traditional way of draping itself in the Saree whether its North, South, East or West, women just fancy themselves for it to put them on and rave about whatever the occasion is.
Due to its popularity soon a six-yard weave was included. You will be mesmerized by the beautiful designs and blend of colors of these sarees.

19IT007 ANANDHALAKSHMI PA

VIRTUAL PLATFORMS - A NEW WAY OF LIFE
ONLINE EDUCATIONAL PLATFORM

Nowadays, most of them are using virtual platform fastly and easily. The concept of traditional education has changed radically within the last couple of years. Being physically present in a classroom isn't the only learning option anymore — not with the rise of the internet and new technologies, at least. Nowadays, you have access to a quality education whenever and wherever you want, as long as you can get online. We are now entering a new era - the revolution of online education.
Online education is a sensible choice whether you're a teenager or an adult. As a student, this can be a useful learning method for sharpening your skills in a difficult subject, or learning a new skill.

REASONS WHY YOU SHOULD GET INVOLVED IN ONLINE EDUCATION

First reason is '**it flexible**' - Using an online educational platform allows for a better balance of work and studies, so there's no need to give anything up. Studying online teaches you vital **time management skills**, which makes finding a good work-study balance easier.
Second reason is '**it offers a wide selection of programs**' – Using online platform we can learn many new skills. We can earn certificates by completing various courses in online. Studying your program online is also a great option for getting an official certificate, diploma, or degree without physically setting foot on a university campus.

The third reason is **'its accessible' – you can teach or study from anywhere in the world**. This means there's no need to commute from one place to another or follow a rigid schedule. By this platform, not only do you **save time**, but you also save money, which can be spent on other priorities. The virtual classroom is also available anywhere there's an internet connection, and a good way to take advantage of this is to travel.
The fourth reason is **'it allows for a customized learning experience'** - Online classes tend to be smaller than conventional class sizes. Most of the time, online learning platforms only allow one student at a time, and in almost all cases, this allows for greater interaction and more feedback between you and your tutor.

"In times where small instructor-led classrooms tend to be the exception, electronic learning solutions can offer more collaboration and interaction with experts and peers, as well as a higher success rate than the live alternative."

Online learning courses allow information to be delivered in short and easily digestible pieces. They use formats such as video games, simulators, and videos that allow students to absorb information at their own pace and access content when and where they need it. With these tools, training can be done anywhere and at any time; the only thing students need is internet access.

The fifth reason is '**It's more cost-effective than traditional education**' – Online learning is not only more effective than traditional learning methods, but it can also be significantly more cost-efficient compared to traditional training tools such as printed manuals or in-person classes.
There's also often a wide range of payment options that let you pay in installments or per class. This allows for better budget management. You can also save money from the commute and class materials, which are often available for free.
Finally, these are only a few reasons to choose online education, and why 90 percent of students today think that online learning is the same or better than the traditional classroom experience. Every student must assess their unique situation and decide according to their needs and goals, and while this alternative to traditional education is not for everyone, it's still a convenient option with virtually endless options for international students all over the world.

"Online learning is rapidly becoming one of the most cost-effective ways to educate the world's rapidly expanding workforce."

PRIYADHARSHINI.N
20IT072

ARTIFICIAL INTELLIGENCE

The simulation of human intelligence processes by machines, particularly computer systems, is known as artificial intelligence. Expert systems, natural language processing, speech recognition, and machine vision are examples of AI applications. It is a broad topic of computer science focused with creating intelligent machines that can accomplish activities that would normally require human intelligence.

HISTORY

Alan Turing changed history for the second time with a simple question: "Can machines think?" Less than a decade after breaking the Nazi encryption machine Enigma and helping the Allies win World War II, mathematician Alan Turing changed history once more with a simple question: "Can machines think?"

The core purpose and vision of artificial intelligence were set by Turing's paper "Computing Machinery and Intelligence" (1950) and the Turing Test that followed.

At its most basic level, AI is a discipline of computer science whose goal is to answer yes to Turing's question. It is the goal of artificial intelligence researchers to reproduce or simulate human intellect in robots.

Artificial intelligence's broad purpose has sparked a slew of questions and arguments. So much so that there is no commonly acknowledged definition of the field.

Ancient Greek mythology included intelligent robots and artificial entities for the first time. The creation of syllogism and its application of deductive reasoning by Aristotle was a watershed point in humanity's search to comprehend its own intelligence. Despite its long and deep roots, artificial intelligence as we know it today has only been around for a century.

When digital computers were widely available in the mid-1950s, AI researchers began to investigate the idea of reducing human intellect to step-by-step symbol manipulation, a concept known as Symbolic AI or GOFAI. Cybernetics and artificial neural network-based approaches have been abandoned or relegated to the background.

In 1956, a workshop at Dartmouth College spawned the discipline of AI research. The participants went on to become the pioneers and leaders of AI research. They and their students created "astonishing" systems, in which computers learned checkers strategies, solved algebraic word problems, proved logical theorems, and spoke English. By the middle of the 1960s, the Department of Defense had substantially supported research in the United States, and facilities had been created all over the world.

In the 1960s and 1970s, researchers were sure that symbolic techniques would one day succeed in constructing a machine with artificial general intelligence, and this was the field's objective. "Within twenty years, machines will be capable of accomplishing whatever work a man can do," Herbert Simon said. "Within a decade... the problem of generating 'artificial intelligence' will essentially be addressed," wrote Marvin Minsky.

THE FOUR TYPES OF ARTIFICIAL INTELLIGENCE

- REACTIVE MACHINES

A reactive machine is guided by the most fundamental AI principles and, as the name suggests, is solely capable of perceiving and reacting to the world around it. Because a reactive machine lacks memory, it cannot depend on previous experiences to guide real-time decision-making.

- LIMITED MEMORY

When gathering information and assessing prospective options, artificial intelligence with limited memory can store previous data and predictions, essentially peering into the past for indications on what might happen tomorrow. Artificial intelligence with limited memory is more complicated and has more possibilities than reactive machines.

- THEORY OF MIND

Theory of Mind is exactly that: a theory. We haven't yet developed the technology and scientific capabilities required to advance artificial intelligence to the next level.

- SELF-AWARENESS

The ultimate stage for AI to become self-aware will be to build a Theory of Mind in artificial intelligence, which will happen sometime in the future. This type of artificial intelligence is conscious on a human level and is aware of its own presence in the world as well as the presence and emotional condition of others. It would be able to deduce what others may require based on not just what they say to them, but also how they say it.

Artificial intelligence can be divided into two categories:

❖ Narrow AI

Narrow AI, often known as "Weak AI," is a type of artificial intelligence that functions in a constrained setting and simulates human intellect. While narrow AI is frequently focused on executing a specific task very well, these machines operate under many more constraints and limits than even the most basic human intelligence.

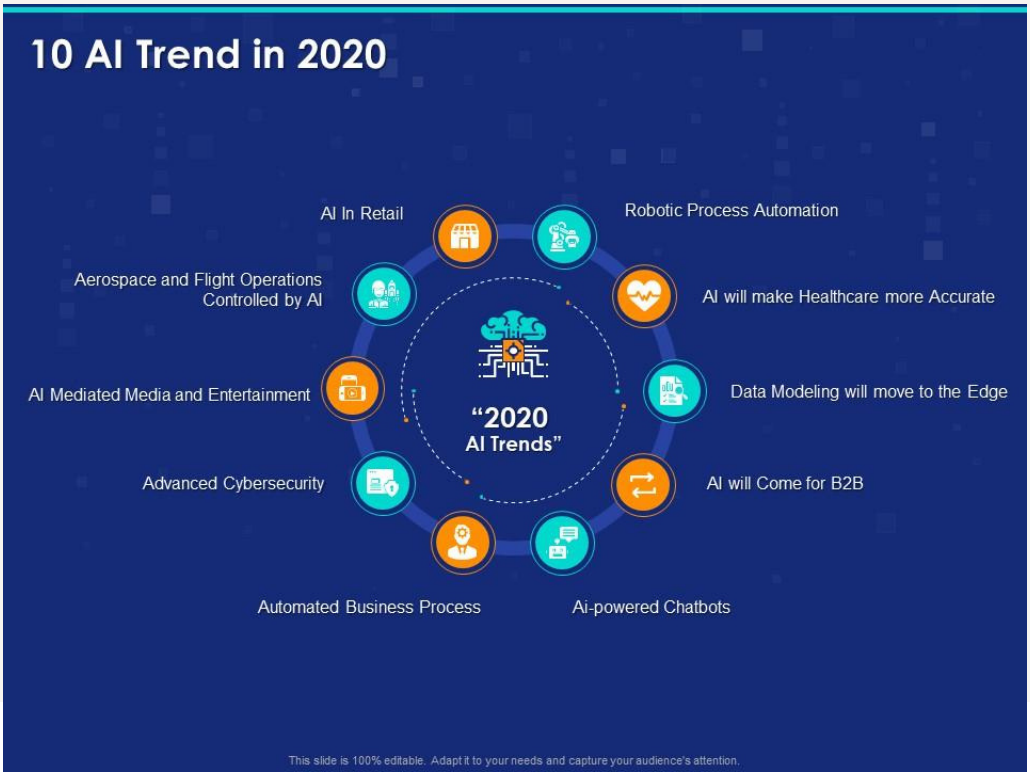
❖ Artificial General Intelligence (AGI):

AGI, often known as "Strong AI," is the type of artificial intelligence we see in movies like Westworld's machines or Star Trek: The Next Generation's Data. AGI is a machine that has general intelligence and can use that intelligence to solve any problem, much like a person can.

APPLICATIONS

AI applications were at the centre of the most economically successful fields of computing in the 2010s, and have since become a commonplace part of daily life. Search engines (such as Google Search), online advertising targeting, recommendation systems (such as Netflix, YouTube, or Amazon), internet traffic driving, targeted advertising (AdSense, Facebook), and virtual assistants all use AI (such as Siri or Alexa), Face recognition (Apple's Face ID or Microsoft's DeepFace), image labelling (used by Facebook, Apple's iPhoto, and TikTok), autonomous vehicles (including drones and self-driving cars), automatic language translation (Microsoft Translator, Google

Translate), facial recognition (Apple's Face ID or Microsoft's DeepFace), image labelling (used by Facebook, Apple's iPhoto, and TikTok), and spam filtering.



By 2020, Natural Language Processing systems like the massive GPT-3 (at the time, the world's biggest artificial neural network) were matching human performance on preexisting benchmarks, albeit without the system achieving common sense understanding of the benchmarks' contents. DeepMind's AlphaFold 2 (2020) exhibited the ability to discover the 3D structure of a protein in hours rather than months. Other apps predict the outcome of court cases, create art (such poetry or painting), and prove mathematical theorems.

Thus, Several works use artificial intelligence to push us to address the fundamental question of what makes us human, by presenting us with artificial beings who can feel.

19IT122_ESHWARAN ABR

GARAD SAREE

Here's a video on Garad Saree
by DHANUJA V (19IT021)
Watch it on YouTube using this link:
https://www.youtube.com/watch?v=fi08UkIYsb8

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