
TECHNOMAG

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✗ PICS FROM STUDENTS

✗ OUR CHILDREN'S DAY

പ്രിൻസിപ്പലിന്റെ സന്ദേശം

വിദ്യാർത്ഥികളുടെ കലാ സാഹിത്യ അഭിരുചികളെ കണ്ടെത്താനും വളർത്താനുമുള്ള ഒരു വേദിയാണിത്. കുട്ടികളിലുള്ള സർഗ്ഗവാസനകളെ കണ്ടെത്തി പ്രോത്സാഹിപ്പിക്കുന്നതിൽ നമ്മുടെ മാഗസിൻ എന്നും ഔന്നത്യം കാണിച്ചിട്ടുണ്ട് ഇപ്പോഴിതാ മാറ്റത്തിന്റെ സുപ്രധാനമായ ഒരു ചുവടുവയ്പ് നടത്തിയിരിക്കുന്നു: പരിപൂർണമായി ഡിജിറ്റൽ ആയ മാഗസിൻ നമ്മുടെ കുട്ടികൾ തയ്യാറാക്കിയിരിക്കുന്നു. ഇതിന്റെ പിന്നിൽ പ്രവർത്തിച്ച എല്ലാ കുട്ടികളേയും അവർക്ക് സഹായ സഹകരണങ്ങൾ നൽകിയ അദ്ധ്യാപകരേയും അഭിനന്ദിക്കുന്നു. പ്രഥമ സംരഭം ഹൃദ്യവും ഈടുറ്റതും ആകട്ടെ എന്ന് ആശംസിക്കുന്നു.

ശ്രീമതി സലീന പി

പ്രിൻസിപ്പൽ

ENGLISH

MASTER OR SERVANT???

One day while Akbar was in the court a guard came rushing in. He bowed in front of Akbar and said," O Great and Wise King, one of your ministers from a border town is here to see you. May I show him in?" The King said," Please show him in at once."

The minister came in and bowed in front of Akbar. He said," Greetings my King. It is good to see you after such a long time. Unfortunately I have come to see you with a small problem." Akbar said, "Greetings Minister. I will do my best to solve any problem that you have." The minister turned around and called two men who had come along with him. He pointed to the men and said, "These

men have a strange problem that I cannot solve O King. I will let them explain it to you themselves." Akbar said to the men, "Go ahead and explain." The first man stepped forward and said, "O King, my name is Aamir. I am a trader and I own a lot of land. This man claims that I am his servant. He is so silly, he claims that I have stolen his money and disguised myself as him."

The second man stepped forward and said, "Your Majesty. I am Aamir. And I am the trader who owns a lot of land. About six months ago I went to Afghanistan to do some business. Since I would be gone for six months, I left this man in charge. He is my servant, and I trusted him with all my money and land. When I returned from Afghanistan, I found that he had been using my name to do business of his own. When I challenged him, he began telling people that I was his servant and that he was Aamir."

Akbar looked helpless. He said, “This is indeed a very strange case. I have no idea hove to prove which one of you is the servant and which one the master.” He looked at the courtiers and said,” If any of you can prove which man is telling the truth and which one is lying, I will reward you with a bag of gold coins.” The courtiers came forward one by one and questioned the two men the two men, but none of courtiers could tell for sure which man was lying.

Finally the King looked at Birbal and said,” Birbal, I am afraid that you will have to step in and solve this very strange problem. None of the other courtiers have been successful.” Birbal smiled and said,” I will gladly do best I can O King.”

Birbal walked right up to the men and said,” Do you know that I can read your minds? I have this strange ability, so you cannot the truth from me. I would like both of you to lie down on

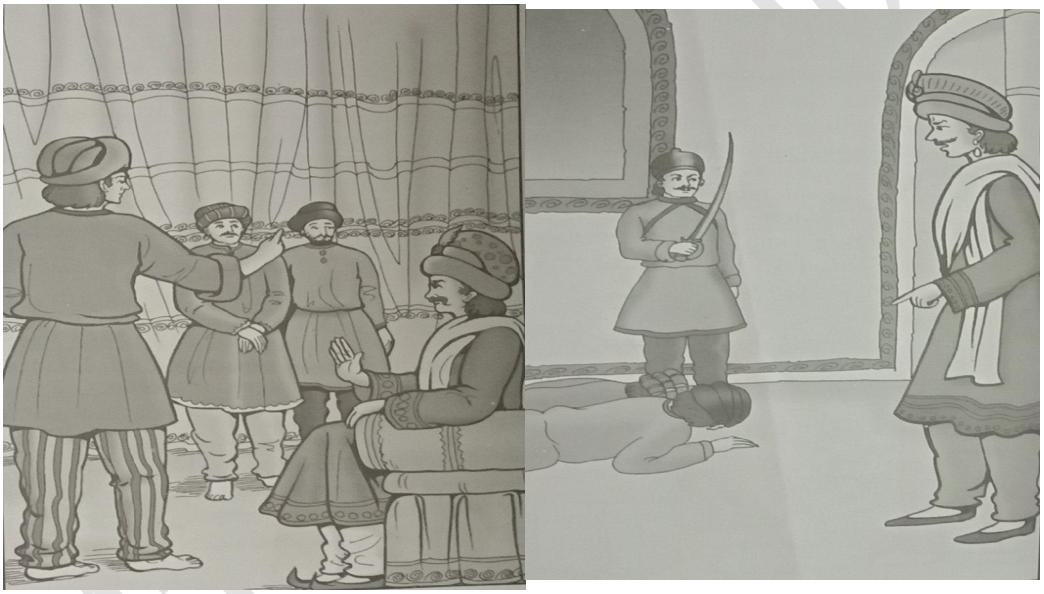
the floor with your faces down." The men did as they were told. Then Birbal said," Now I will close my eyes and concentrate. I will begin to read your minds and find out who is telling the lie."

Birbal closed his eyes and meditated for a while. Suddenly he opened his eyes and said," Ah! Now I know the truth. Guard! Cut of the servant's head."

The guard was confused, because he did not know who the servant was. As he walked towards the men he looked at Birbal helplessly. As he drew near, the man who spoke first jumped up and ran to the King's throne. He cried out," Forgive me O King! I am sorry I tried to steal this man's wealth."

The King, the courtiers and all the other ministers were amazed. Akbar asked Birbal, "But... how did you know that he was lying?"

Birbal laughed and said," I did not know he was lying your Majesty, but he thought that I was telling the truth. He believed me when I said that I could read minds. I knew that the real servant would be afraid to die when I asked the guard to cut of the 'servant's' head."



Akbar told the guards to put the servant in prison. The real Aamir thanked Akbar and Birbal for helping him get back his wealth.

When they had left, Akbar gave Birbal the reward of a bag of gold coins and said," You deserve this

award Birbal. I am so happy that you were here to help me out."

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By,

Alfin Francis
STD IX

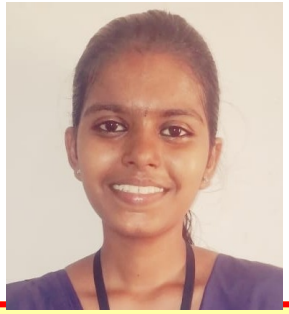
The Life of a Bamboo Tree

Long ago, one day, a ruler who fought battles felt discouraged. He asked for a mentor to solve his problem. The mentor asked the ruler," What is the problem sir, why did you call me?". The ruler said," I am fighting battles for years, but I am not satisfied with my life." The mentor asked him," Do you about the Life of a Bamboo Tree?" he continued, "I will tell you." Once a farmer who was very font of Bamboo trees, planted a bamboo in his field. At the first year, he watered and fertilized the soil. No change happened. At the second year, the farmer watered and fertilized the soil, but, no change occurred. He did the same procedure for five years. Yet nothing happened. But for the fifth year, there came a

sprouting on the soil of the bamboo tree. And almost after six weeks, the bamboo grew ninety feet tall. So, the mentor, asked the ruler "How long did it took for the Bamboo tree to grow ninety feet tall?". The ruler said "six weeks", the mentor said" No, five years and six weeks". The ruler became surprised and the mentor continued" For five years, the bamboo tree was growing a collection of strong roots for the rigidity". The mentor said "Sir, now, I mean that, the battles that you fought and those which you are going to fight are like the strong roots which will help you to lead a luxurious life in the future".

THE END

By, Devika Sreekanth
Class 9
MTHSS, Kaloor

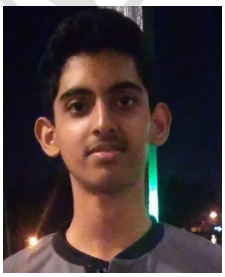


The Call Of The Cthullu

Once the deep ocean research centre took a plan to research at the Challenger deep (Mariana trench) which is the most deepest part of Pacific ocean. For research purpose they sent a submarine to the deep ocean. While going deep inside the trench the pressure increased and they had some difficulties in normal sinking of submarine, so they used their full force to go deep inside the trench. Due to some reasons they lost the communication signal with the research centre. Then they went inside the trench and they saw something and got scared and for the their protection they shot a missile at the spot then the saw a movement of a creature which is very large and it attacked them. Then the large creature came out of the trench and started destroying the buildings. Then the air forces and navy forces started shooting

missiles at the creature then one scientist found that it was the mythical creature named Cthullu who was the protector and guardian of sea of ancient times. It was in a deep sleep for these many thousands of years it got awaken by the disturbance made by the submarines accidently. He got an idea to kill the guardian (Cthullu) by injecting toxic poison on its body he informed the air forces to shoot toxic missiles at the Cthullu. Then they arranged forces to distract it and attack it and they successfully shot the missile at the Cthullu and Once again it has into its deep sleep.....

Cthullu will return....



-Written by

Antony Austin

Class IX

The Clever House owner

On a clear and beautiful night a thief entered a house. Unfortunately he was seen by the houseowner. But the owner didn't call the police he had a plan, he disguised himself as a thief and came in front of the thief and he told he had never seen him and he told that "I know where the locker is, I will help you to take that only one condition "the thief replied "what condition?"."You have to give me half of the money you steal" he replied.

The thief answered positively and agreed to give half of the money. The houseowner took him to the room where the locker is. The houseowner told that he will look whether anyone is coming, you can take the money from the locker room. The houseowner went

out and locked the room from outside and called the police. The police came and arrested the thief. The houseowner became a star in front of the police and in the neighbourhood.

THE END

By

Joseph Hamlin
STD 9

മലയാളം

ജലം

കുടിക്കുവാൻ വേണം ജലം

കുളിക്കുവാൻ വേണം ജലം

നമുക്ക് കലക്കു വാൻ വേണം ജലം

അഴുക്ക് അകറ്റുവാൻ വേണം ജലം

ജലക്ഷാമം ഇന്ന്

നാടാകെ ദുഃഖം

ജനക്ഷേമം ഇന്ന് അതിനാ

എത്രയോ കഷ്ടം

ദുരുപയോഗം അരുത് അതിനാൽ

അരുതരുത്

ജല ദുരുപയോഗം അരുത്

ജലം അമൂല്യമാണ്

അറിയുക ജനതയെ

ജലം അമൂല്യമാണ്

അത് കരുതുക ജനതേ

ജലം അമൂല്യമാണ്

അത് മലിനമാക്കരുത് മാനവാ

അത് മലിനമാക്കരുത് മാനവാ

By,
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മൊബൈൽ

ഒരിടത്ത് ഷമ്മി എന്ന ഒരാൾ താമസിച്ചിരുന്നു. അയാൾ പ്ലേയ്സ്റ്റോറിൽ നിന്നും flash light എന്ന ആപ്ലിക്കേഷൻ ഇൻസ്റ്റാൾ ചെയ്തു. പിന്നെ അയാൾ 10000 രൂപയുടെ ട്രാൻസാക്ഷൻ നടത്താൻ അക്കൗണ്ട് തുറന്നു. ട്രാൻസാക്ഷൻ ഉറപ്പു വരുത്താൻ otp ചോദിച്ചു. മെസ്സേജ് ആയി otp വന്നു.പ്രതീക്ഷിക്കാതെ നോട്ടിഫിക്കേഷനിൽ "യുവർ ട്രാൻസാക്ഷൻ ഈസ് കംപ്ലീറ്റ് " എന്നു ഡിസ്പ്ലേ ചെയ്തു. ഷമ്മി ഇതു കണ്ടപ്പോൾ അമ്പരന്നു പോയി. പിന്നീട് അയാളുടെ സുഹൃത്തായ ഫെലിക്സിനെ വിവരമറിയിച്ചു. സെറ്റിങ്സിൽ ഷമ്മി ഇൻസ്റ്റാൾ ചെയ്ത ആപ്പ്സ് എന്തൊക്കെ തന്റെ ഫോണിൽ ആക്സസ് ചെയ്യുന്നുണ്ടെന്ന് നോക്കാൻ പറഞ്ഞു . തന്റെ ഫോൺ ഹാക്ക് ചെയ്യപ്പെടുന്നുണ്ടെന്നു മനസ്സിലാക്കിയ ഷമ്മിക്ക് വളരെ വിഷമമായി. പിന്നെ തന്റെ ബാങ്ക് അക്കൗണ്ടിൽ നിന്നും 10000 രൂപ പോയതു കണ്ടപ്പോൾ ഷമ്മി മുഖം പൊത്തി കരഞ്ഞു.

സന്ദേശം ---------- നാം നമ്മുടെ മൊബൈലിൽ ആപ്പ്സ് ഇൻസ്റ്റാൾ ചെയ്യുന്നതിന് മുൻപ് ആ ആപ്പ് എന്തൊക്കെ ചെയ്യുന്നുണ്ടെന്ന് പരിശോധിക്കണം. അല്ലെങ്കിൽ വലിയ ഒരു ദുരന്തമുണ്ടാകും.

By,
Benedict Lawrence
Class 9

ബന്ധങ്ങൾക്ക് ഇടയിലെ പാലം

പണ്ടൊരിക്കൽ രണ്ട സഹോദരന്മാർ ജീവിച്ചിരുന്നു. അവർ ആ നാട്ടിലെ ഏറ്റവും നല്ല സഹോദരൻമാർ ആയിരുന്നു. അവർ ആ ഗ്രാമത്തിൽ സന്തോഷത്തോടെ ജീവിക്കുക ആയിരുന്നു.

ഒരു ദിവസം അവർ തമ്മിൽ ഒരു വഴക്കുണ്ടായി. അതോടെ അവർ അടുത്തടുത്ത് രണ്ട വീടുകളിലായി വഴക്കിട്ടു താമസിക്കാൻ തുടങ്ങി. പിറ്റേദിവസം മൂത്ത സഹോദരൻ എഴുന്നേറ്റപ്പോൾ കാണുന്നത് തൻറെ വീടിനും തൻറെ അനുജൻറെ വീടിനും ഇടയിലായി ഒരു ചെറിയ പുഴ പണിതിരിക്കുന്നു. ഇത് കണ്ടപ്പോൾ ദേഷ്യം വന്നു. അവൻ പറഞ്ഞു " ഇവന് ഇത്രയും ധൈര്യമോ!! ഇവൻറെ വീട് കാണാൻ കഴിയാത്ത തരത്തിൽ ഞാനൊരു മതിൽ പണിയും".

അവൻ ഒരു മരപ്പണിക്കാരനെ വിളിച്ചു. അദ്ദേഹത്തിൻറെ പേര് ശങ്കരൻ എന്നായിരുന്നു. മൂത്ത സഹോദരൻ അയാളോട് പറഞ്ഞു," ആ വീട് കാണാൻ കഴിയാത്ത രീതിയിൽ ഇവിടെ ഒരു മതിൽ പണിയുക. ഞാൻ തിരിച്ചു വരുന്നതിനുള്ളിൽ മതില്

പണി പൂർത്തിയായിരിക്കണം". ഇതും പറഞ്ഞു അയാൾ പോയി .

അയാൾ വൈകുന്നേരത്തോടെ തിരിച്ചെത്തി. വന്നപ്പോൾ കാണുന്നത് മതിലിനു പകരം ഒരു പാലമായിരുന്നു. മൂത്ത സഹോദരൻ ശങ്കരനോട് പറഞ്ഞു," ഞാൻ നിന്നോട് പറഞ്ഞത് ഒരു മതിൽ പണിയുവാൻ ആണ് അല്ലാതെ ഒരു പാലം അല്ല". ഇത് പറഞ്ഞു കഴിഞ്ഞപ്പോൾ അയാൾ കാണുന്നത് തൻറെ സഹോദരൻ തൻറെ നേർക്ക് ഓടി വരുന്നതാണ്. ഇളയ സഹോദരൻ പറഞ്ഞു," ചേട്ടാ, ഞാൻ നമുക്കിടയിൽ ഒരു പുഴ പണിതപ്പോൾ ചേട്ടൻ അതിനു മീതെ കൂടി ഒരു പാലം പണിതു. ചേട്ടന് എന്നോട് എത്ര സ്നേഹമാണ്". ഇത് പറഞ്ഞുകൊണ്ട് അവൻ തൻറെ മൂത്ത സഹോദരനെ കെട്ടിപ്പിടിച്ചു.

ഇത് കണ്ടുനിന്ന ശങ്കരൻ പറഞ്ഞു," നമ്മൾ ബന്ധങ്ങൾക്കിടയിൽ മതിലല്ല മറിച്ച്, ഉറപ്പുള്ള പാലങ്ങളാണ് പണിയേണ്ടത്"

By,

Alfin Francis

IX STD

പടിയിറക്കം

ഒരു തവണ കൂടി തിരിഞ്ഞു നോക്കാതെ
ഒരു മാത്ര കൂടിയെൻ ഓർമ്മകളിൽ തിരയാതെ
ഇനി ഞാനിറങ്ങട്ടെ ഈ വഴി കടന്ന്
പതിവുകളെ പഴമയുടെ മടിയിലേക്കിട്ട്.

കർമ്മബന്ധത്തിൻറെ കാണാത്ത ചരടുകൾ
കെട്ടിപ്പിണഞ്ഞ് കിടക്കുന്ന ചുറ്റിലും
അവയറുത്തെറിയുവാൻ നേരമായിപ്പോൾ
അറുക്കുവാനരുതാത്ത അഴിയാത്ത ചരടുകൾ.

ശാസിച്ച് തെറ്റിൻറെ മുനയൊടിച്ചീടിലും
സ്നേഹമാം സ്നേഹത്താൽ മുറിവുണക്കിത്തരും
ഇരുളിനെ വെളിവാക്കി വഴികാട്ടി നിൽക്കും
ഗുരുവരശ്രേഷ്ഠരാം മാർഗ്ഗദീപങ്ങൾ.

ഒന്നിച്ചൊരു വയർ പങ്കിട്ടതില്ല
ഒരു രക്തബിന്ദുവാൽ ബന്ധിതരല്ല
എന്നിട്ടുമെന്തിനും കൈകോർത്ത് നിർത്തിയ
സ്നേഹമന്ത്രങ്ങളാം പ്രിയ സൗഹൃദങ്ങൾ.

കല്ലാൽ മരത്താൽ കെട്ടിക്കയറ്റിയ
കെട്ടിടമാണീ കലാലയമെങ്കിലും
എൻറെ ആത്മാവിൻറെ ശ്വാസമാണിവിടം
എൻറെ സത്വത്തിൻറെ തേജോപ്രഭവകേന്ദ്രം.

എൻറെ ഇന്നലെകളുടെ ഓർമ്മകൾ തിക്കി

തോളിൽ കയറ്റിയ സ്മൃതിസഞ്ചിയൂരി ഞാൻ
ഇനിയൊന്നാഞ്ഞാഞ്ഞെറിഞ്ഞു കളയട്ടെ
ഇന്നിൻ്റെ പിന്നിലെ പറമ്പിലേക്ക്.

ഇന്നുകളിലിന്നലെകൾ നിഴൽ വീഴ്ത്തിടാതെ
നാളെകൾ നിഴലിൽ നിറം മങ്ങിടാതെ
ഇനി ഞാനിറങ്ങട്ടെ ഈ പടി കടന്ന്
പതിവുകളെ പഴമയുടെ മടിയിലേക്കിട്ട്.

- Sreelakshmi miss
(Chemistry Department)

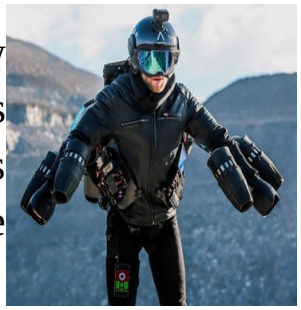
Information Technology

INVENTIONS AND INNOVATIONS 2018-2019

GRAVITY INVENTIONS

We augment the body and mind with a suite of patent pending technology to enable unparalleled human flight.
We featured Richard Browning in our latest Born to Engineer film.
Richard is living proof that that Engineering can make anything happen.

Using the inherent capabilities of the human brain as a flight control computer, he's designed and built the world's most advanced body-controlled flight suit. Richard is Born to Engineer. Richard grew up making model aeroplanes with his aeronautical engineer father. Inspired, he now is taking flight engineering and technology to the next level.



ABOUT RICHARD……

Richard Browning is a British inventor, entrepreneur and speaker. He founded Gravity Industries Ltd in March 2017, the company behind the Daedalus mark 1, a jet pack that uses several miniature jet engines to achieve vertical flight. The kerosene engines are rated at 22 kg of thrust each. Browning uses his arms to control the direction and speed of the flight, whilst being shown

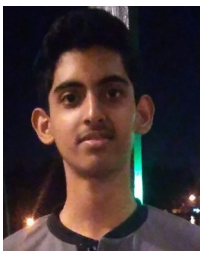
fuel consumption among other usage data within the head-up display he wears inside the helmet. He achieved a speed of 32.02 miles per hour (51.53 km/h) with the suit during a Guinness World Records attempt for 'Fastest speed in a body controlled jet engine powered suit'.

Browning has been dubbed the "real-life Iron Man" by media outlets around the world.

Browning is an ultra-marathon runner and former Royal Marine Reservist. He cycles to work and uses an exercise regime to drop his body weight to 72 kg. He was inspired by his late father, an aeronautical engineer.

----------Antony Austin

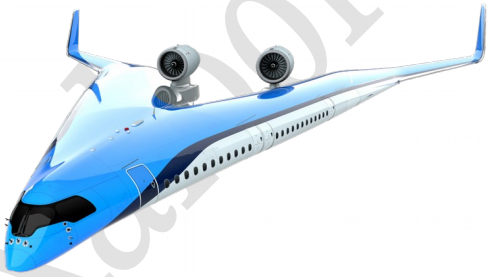
Class 9



V SHAPED AEROPLANE

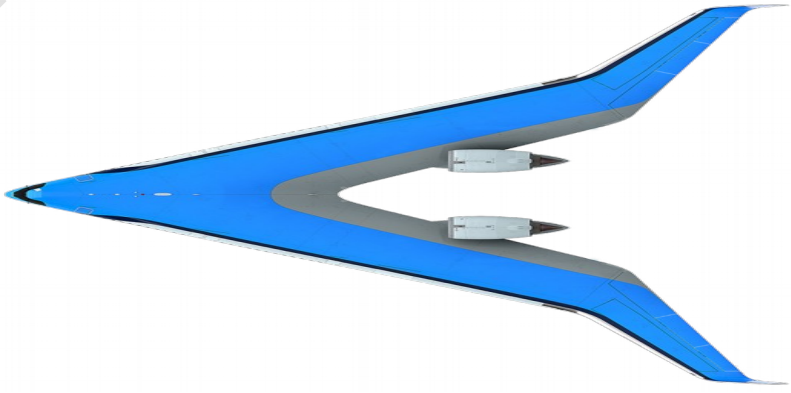
New V-shaped aeroplane will reduce weight and increase fuel efficiency

A new V-shaped aeroplane is being developed in the Netherlands by TU-Delft and KLM Royal Dutch Airlines.



The improved aerodynamics of the V shape reduces the weight of the aircraft and means it could use up to 20% less fuel than the Airbus A350 (the most advanced civilian aircraft in the world today).

The concept is known as the “Flying-V” and embraces an entirely different approach to aircraft design. It is being developed in anticipation of increased



demand for sustainable long-distance flight in the future.

Development is being spearheaded by TU-Delft and KLM Royal Dutch Airlines. Today the project took a major step forward with KLM CEO Pieter Elbers and Dean of the Faculty of Aerospace Engineering at Delft University of Technology (TU Delft) Professor Henri Werij signing a cooperative agreement to work together on the concept at the IATA Annual General Meeting in Seoul.

Currently, KLM plans to unveil a flying scale model of the craft and section of full-size of the interior this October to mark the companies 100th anniversary. The crafts v-shaped design integrates the cargo hold, passenger cabin and the fuel tanks into the wings.

The concept might be sporting a retro/futuristic straight of a 1950's sci-fi comic but

care has been taken to ensure it works with existing infrastructure with minimal distribution.

The Flying V has been scaled down vs it concept design so its' wingspan matches the A350 whilst being slightly shorter. This will allow it to use existing airport gates and runways and fit into the same hanger as the A350.

It also sports the same cargo volume (160m3) and passenger numbers (314) as a A350.The concept Flying-V should provide the team with a good excuse to improve passenger experience within the aircraft. Everything from the seating layout in the wings to the design of the seats and bathrooms will be designed to be as modern and lightweight as possible to ensure the aircraft maximises the efficiency gains the new shape provides.

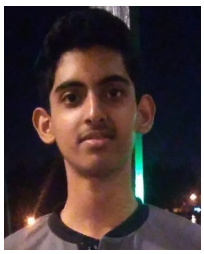
While the Flying-V is propelled a modern fuel-efficient kerosene turbofan engines the team will be working towards a design that could be easily be adapted to make use of innovations in

future propulsion systems. Once the technology is mature enough the craft could use electrically-boosted turbofans.

The Stats

- **LENGTH**: 55 metres
- **WINGSPAN**: 65 metres
- **HEIGHT**: 17 metres
- **NUMBER OF PASSENGERS**: 314
- **CARGO**: 160 m^3
- **FUEL**: 140.000 litres of kerosene
- **FUEL EFFICIENCY**: (20% less fuel than an AIRBUS A350-900)

----------Antony Austin
Class 9



BOSTON DYNAMICS

Atlas

The world's most dynamic humanoid robot, Atlas is a research platform designed to push the limits of whole-body mobility. Atlas's advanced control system and state-of-the-art hardware give the robot the power and balance to demonstrate human-level agility.

Technology

Efficient

Atlas has one of the world's most compact mobile hydraulic systems. Custom motors, valves, and a compact hydraulic power unit enable Atlas to deliver high power to any of its 28 hydraulic joints for impressive feats of mobility.

Stats

Actuation
Hydraulic

Joints
28

Dynamic
Atlas's advanced control system enables highly diverse and agile locomotion, while algorithms reason through complex dynamic interactions involving the whole body and environment to plan movements.

Speed
1.5 m/s

Lightweight
Atlas uses 3D printed parts to give it the strength-to-weight ratio necessary for leaps and somersaults.

Height
1.5 m
Weight
80 kg

By AL – Irfan Ahmed U.N
Class 9

MINIATURE ROBOTICS

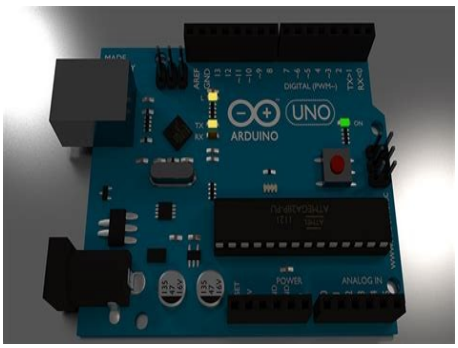
Arduino

What is Arduino?

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing.

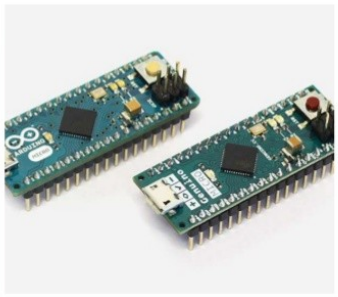
Over the years Arduino has been the brain of thousands of projects, from everyday objects to complex scientific instruments. A worldwide community of makers - students, hobbyists, artists, programmers, and professionals - has gathered around this open-

source platform, their contributions have added up to an incredible amount of accessible knowledge that can be of great help to novices and experts alike.

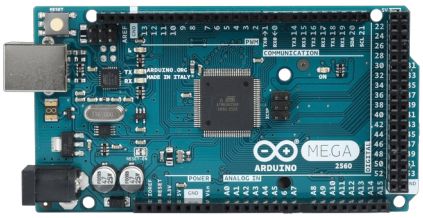


Arduino / Genuino MICRO

Microcontroller	ATmega32U4
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	20
PWM Channels	7
Analog Input Channels	12
DC Current per I/O Pin	20 mA
DC Current for 3.3V Pin	50 mA
Flash Memory	32 KB (ATmega32U4) of which 4 KB used by bootloader
SRAM	2.5 KB (ATmega32U4)
EEPROM	1 KB (ATmega32U4)
Clock Speed	16 MHz
Length	48 mm
Width	18 mm
Weight	13 g



Arduino was born at the Ivrea Interaction Design Institute as an easy tool for fast prototyping, aimed at students without a background in electronics and programming. As soon as it reached a wider community, the Arduino board started changing to adapt to new needs and challenges, differentiating its offer from simple 8-bit boards to products for IoT applications, wearable, 3D printing, and embedded environments. All Arduino boards are completely open-source, empowering users to build them independently and



eventually adapt them to their particular needs. The software, too, is open-source, and it is growing through the contributions of users worldwide.

Why Arduino?

Thanks to its simple and accessible user experience, Arduino has been used in thousands of different projects and applications. The Arduino software is easy-to-use for beginners, yet flexible enough for advanced users. It runs on Mac, Windows, and Linux. Teachers and students use it to build low cost scientific instruments, to prove

chemistry and physics principles, or to get started with programming and robotics. Designers and architects build interactive prototypes, musicians and artists use it for installations and to experiment with new musical instruments. Makers, of course, use it to build many of the projects exhibited at the Maker Faire, for example. Arduino is a key tool to learn new things. Anyone - children, hobbyists, artists, programmers - can start tinkering just following the step by step instructions of a kit, or sharing ideas online with other members of the Arduino community.

There are many other microcontrollers and microcontroller platforms available for physical computing. Parallax Basic Stamp, Netmedia's BX-24, Phidgets, MIT's Handyboard, and many others offer similar functionality. All of these tools take the messy details of microcontroller programming and wrap it up in an easy-to-use package. Arduino also simplifies the process of working with

microcontrollers, but it offers some advantage for teachers, students, and interested amateurs over other systems:

- **Inexpensive** - Arduino boards are relatively inexpensive compared to other microcontroller platforms. The least expensive version of the Arduino module can be assembled by hand, and even the pre-assembled Arduino modules cost less than $50
- **Cross-platform** - The Arduino Software (IDE) runs on Windows, Macintosh OSX, and Linux operating systems. Most microcontroller systems are limited to Windows.
- **Simple, clear programming environment** - The Arduino Software (IDE) is easy-to-use for beginners, yet flexible enough for advanced users to take advantage of as well. For teachers, it's conveniently based on the Processing programming environment, so students learning to program in that environment

will be familiar with how the Arduino IDE works.

- **Open source and extensible software** - The Arduino software is published as open source tools, available for extension by experienced programmers. The language can be expanded through C++ libraries, and people wanting to understand the technical details can make the leap from Arduino to the AVR C programming language on which it's based. Similarly, you can add AVR-C code directly into your Arduino programs if you want to.
- **Open source and extensible hardware** - The plans of the Arduino boards are published under a Creative Commons license, so experienced circuit designers can make their own version of the module, extending it and improving it. Even relatively inexperienced users can build the breadboard version of the

module in order to understand how it works and save money.

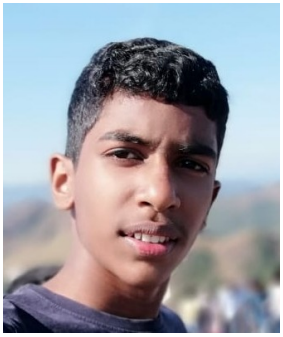
How do I use Arduino?

See the getting started guide. If you are looking for inspiration you can find a great variety of Tutorials on Arduino Project Hub.

The text of the Arduino getting started guide is licensed under a Creative Commons Attribution-ShareAlike 3.0 License. Code samples in the guide are released into the public domain.

-------- Amal Manoj C

Class 9

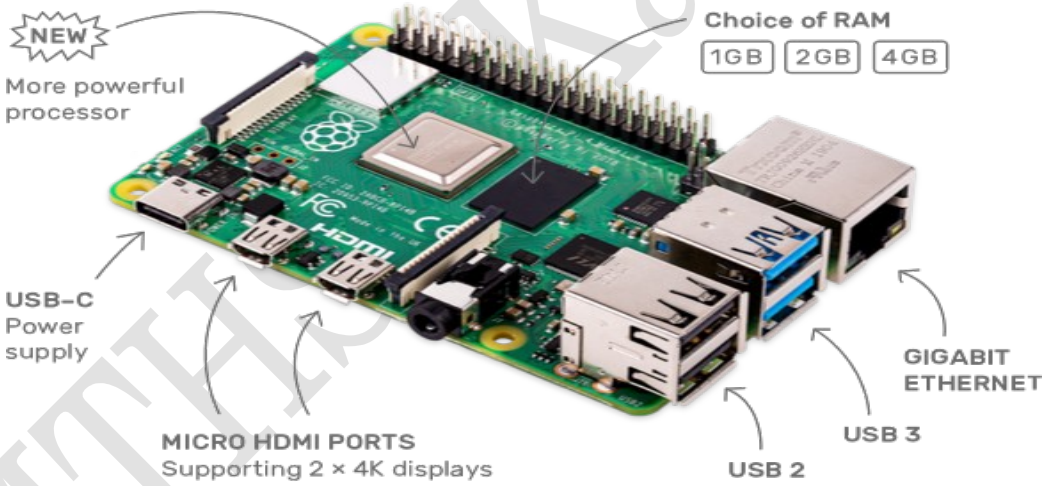


Raspberry Pi 4

Your tiny, dual-display, desktop computer

…and robot brains, smart home hub, media centre, networked AI core, factory controller, and much more

Completely upgraded, re-engineered
Faster, more powerful



From $35

You'll recognise the price along with the basic shape and size, so you can simply drop your new Raspberry Pi into your old projects for an upgrade; and as always, we've kept all our software backwards-compatible, so what you create on a

Raspberry Pi 4 will work on any older models you own too.

Dualdisplays

4K output

We've listened to your feedback: with Raspberry Pi 4, you can run two monitors at once — and in 4K, too!

Your new desktop computer

The speed and performance of the new Raspberry Pi 4 is a step up from earlier models. For the first time, we've built a complete desktop experience. Whether you're editing documents, browsing the web with a bunch of tabs open, juggling spreadsheets or drafting a presentation, you'll find the experience smooth and very recognisable — but on a smaller, more energy-efficient and much more cost-effective machine.

Silent, energy-efficient

The fanless, energy-efficient Raspberry Pi runs silently and uses far less power than other computers.

Fast networking

Raspberry Pi 4 comes with Gigabit Ethernet, along with onboard wireless networking and Bluetooth.

USB 3

Your new Raspberry Pi 4 has upgraded USB capacity: along with two USB 2 ports you'll find two USB 3 ports, which can transfer data up to ten times faster.

RAM

Your choice of RAM

We're making different variants of the Raspberry Pi 4 available, depending on how much RAM you need — 1GB, 2GB or 4GB.

You will need

- A 15W USB-C power supply – we recommend the official Raspberry Pi USB-C Power Supply
- A microSD card loaded with NOOBS, the software that installs the operating system (buy a pre-loaded SD card along with your Raspberry Pi, or download NOOBS to load a card yourself)
- A keyboard and mouse
- Cables to connect to one or two displays via Raspberry Pi 4's micro HDMI ports

Take it further

- Learn how to configure, update, and navigate your Raspberry Pi once it's set up
- Discover a whole range of projects for your Raspberry Pi
- Read more detailed documentation on configuring your Raspberry Pi
- Find out about accessing your Raspberry Pi remotely

mission is to put the power of computing and digital making into the hands of people all over the world. We do this so that more people are able to harness the power of computing and digital technologies for work, to solve problems that matter to them, and to express themselves creatively

By, Anantha Krishnan A.M
Class 9

Quantum Computing

What is Quantum Computing???

Quantum computing is an area of computing focused on developing computer technology based on the principles of quantum theory, which explains

the behavior of energy and material on the atomic and subatomic levels.

Classical computers that we use today can only encode information in bits that take the value of 1 or 0. This restricts their ability. Quantum computing, on the other hand, uses quantum bits or qubits. It harnesses the unique ability of subatomic participles that allows them to exist in more than one state i.e. a 1 and a 0 at the same time. Superposition and entanglement are two features of quantum physics on which these supercomputers are based. This empowers quantum computers to handle operations at speeds exponentially higher than conventional computers and at much lesser energy consumption.

KEY TAKEAWAYS

- Quantum computing is the study of how to use phenomena in quantum physics to create new ways of computing
- The basis of quantum computing is the Qubit. Unlike a normal computer bit, which can be 0 or 1, a Qubit can be either of those, or a superposition of both 0 and 1.

Understanding Quantum Computing

“While the classical computer is very good at calculus, the quantum computer is even better at sorting, finding prime numbers, simulating molecules, and optimization, and thus could open the door to a new computing era,” a Morgan Stanley report noted.

According to the Institute for Quantum Computing at the University of Waterloo, the field of quantum computing started in the 1980s. It was then discovered that certain computational problems could be tackled more efficiently with quantum algorithms than with their classical counterparts.

Quantum computing could contribute greatly in the fields of finance, military affairs, intelligence, drug design and discovery,

aerospace designing, utilities (nuclear fusion), polymer design, Artificial Intelligence (AI) and Big Data search, and digital manufacturing.

Its potential and projected market size has engaged some of the most prominent technology companies to work in the field of quantum computing, including IBM, Microsoft, Google, D-Waves Systems, Alibaba, Nokia, Intel, Airbus, HP, Toshiba, Mitsubishi, SK Telecom, NEC, Raytheon, Lockheed Martin, Rigetti, Biogen, Volkswagen, and Amgen

------ Amal Manoj C
Class 9

Windows – The first GUI System

In my opinion, Windows can be called the ultimate and user-friendly series of operating systems. Starting from the fantasies of Bill Gates, co-founder of Microsoft, we here look at the hierarchy of Windows.

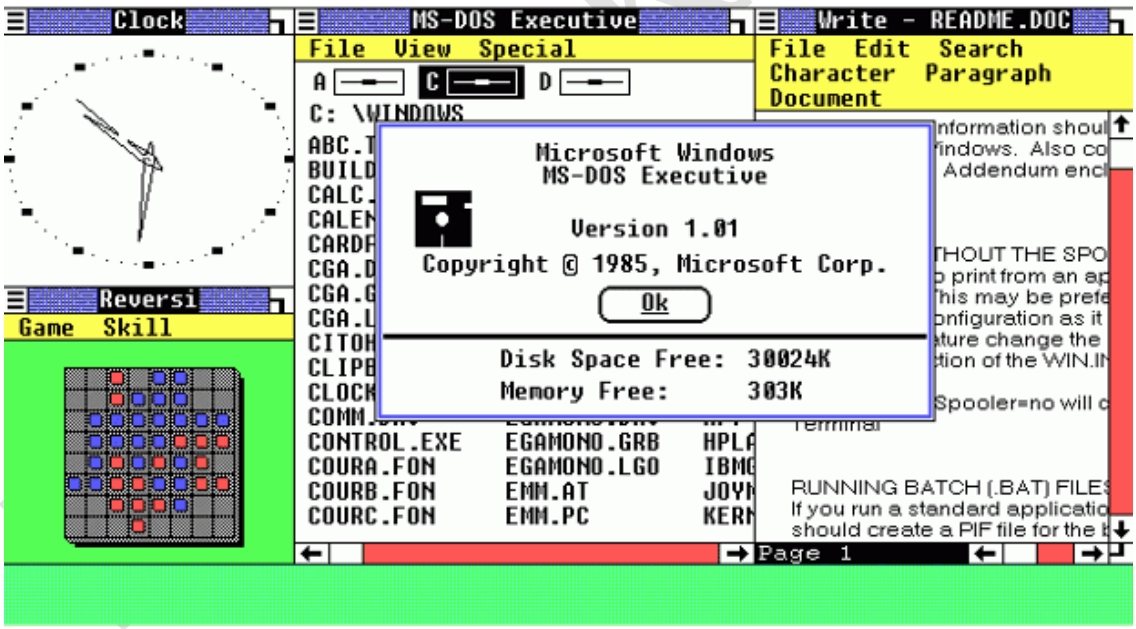
Windows 1 to 10 – A brief Sum up

Windows 1

This is where it all started for Windows. The original Windows 1 was released in November 1985 and was Microsoft's first true attempt at a graphical user interface in 16-bit.

Development was spearheaded by Microsoft founder Bill Gates and ran on top of MS-DOS, which relied on command-line input.

It was notable because it relied heavily on use of a mouse before the mouse was a common computer input device. To help users become familiar with this odd input system, Microsoft included a game, Reversi (visible in the screenshot) that relied on mouse control, not the keyboard, to get people used to moving the mouse around and clicking onscreen elements.

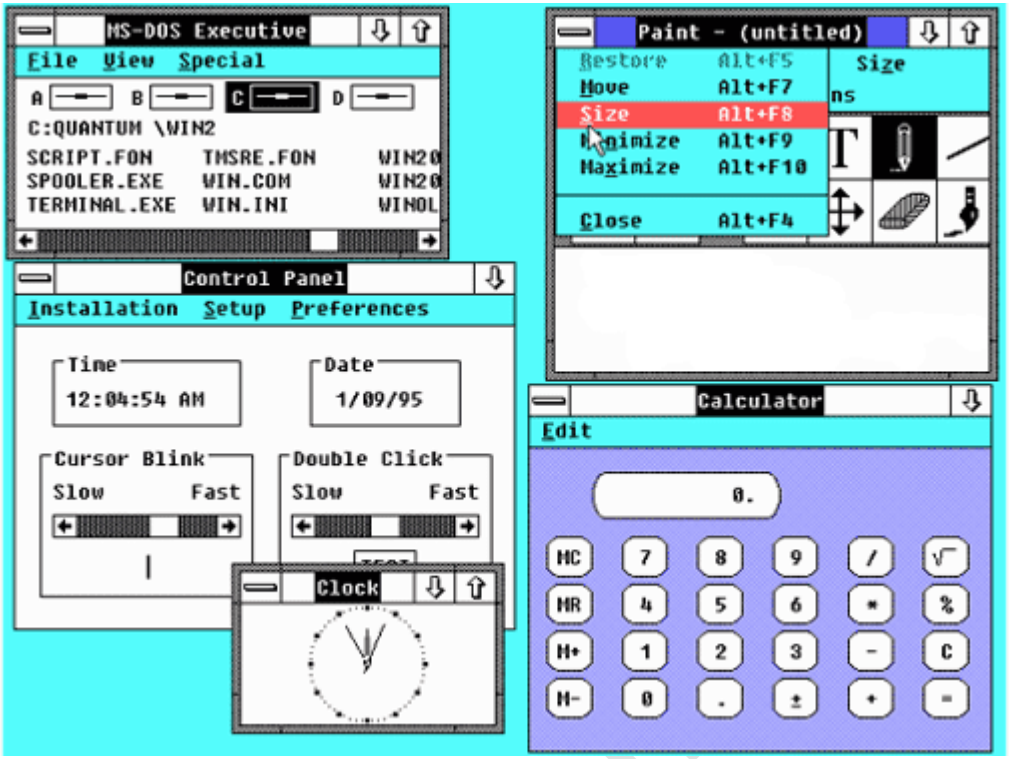


Windows 2

Two years after the release of Windows 1, Microsoft's Windows 2 replaced it in December 1987. The big innovation for Windows 2 was that windows could overlap each other, and it also introduced the ability to minimize or maximize windows instead of "iconising" or "zooming".

The control panel, where various system settings and configuration options were collected together in one place, was introduced in Windows 2 and survives to this day.

Microsoft Word and Excel also made their first appearances running on Windows 2.

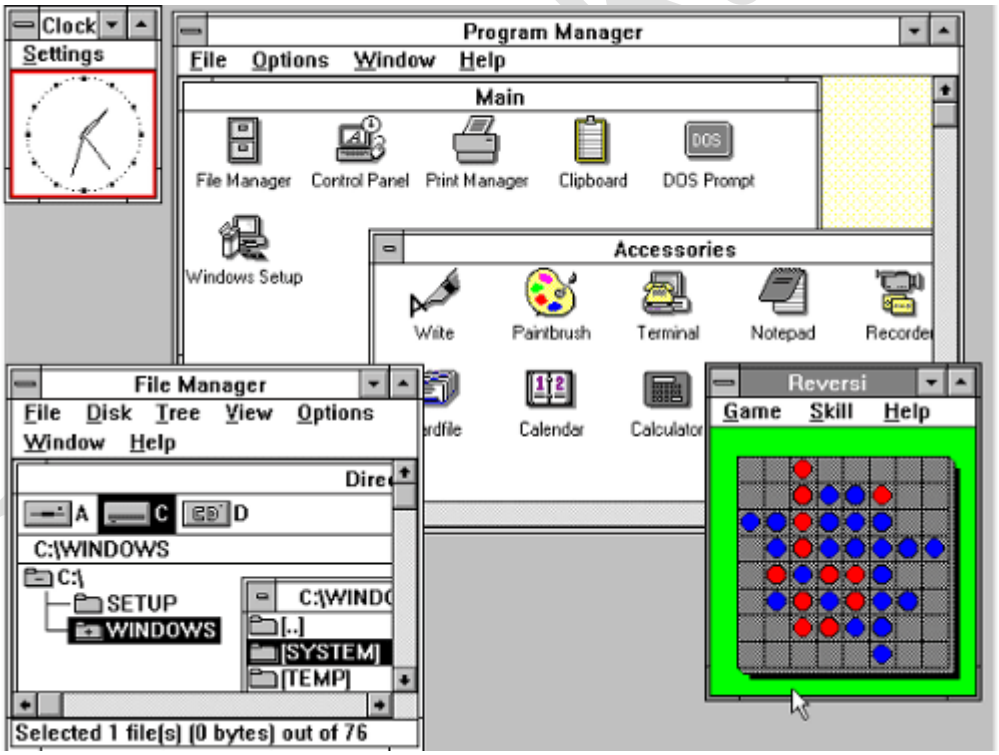


Windows 3

The first Windows that required a hard drive launched in 1990. Windows 3 was the first version to see more widespread success and be considered a challenger to Apple's Macintosh and the Commodore Amiga graphical user interfaces, coming pre-installed on computers from PC-compatible manufacturers including Zenith Data Systems.

Windows 3 introduced the ability to run MS-DOS programmes in windows, which brought multitasking to legacy programmes, and supported 256 colours bringing a more modern, colorful look to the interface.

More important - at least to the sum total of human time wasted - it introduced the card-moving timesink (and mouse use trainer) Solitaire.



Windows 3.1

Windows 1 and 2 both had point release updates, but Windows 3.1 released in 1992 is notable because it introduced TrueType fonts making Windows a viable publishing platform for the first time.

Minesweeper also made its first appearance. Windows 3.1 required 1MB of RAM to run and allowed supported MS-DOS programs to be controlled with a mouse for the first time. Windows 3.1 was also the first Windows to be distributed on a CD-ROM, although once installed on a hard drive it only took up 10 to 15MB (a CD can typically store up to 700MB).

Windows 95

As the name implies, Windows 95 arrived in August 1995 and with it brought the first ever Start button and Start menu. It also introduced the concept of “plug and play” – connect a peripheral and the operating system finds the appropriate drivers for it and

makes it work. That was the idea; it didn't always work in practice.

Windows 95 also introduced a 32-bit environment, the task bar and focused on multitasking. MS-DOS still played an important role for Windows 95, which required it to run some programmes and elements.

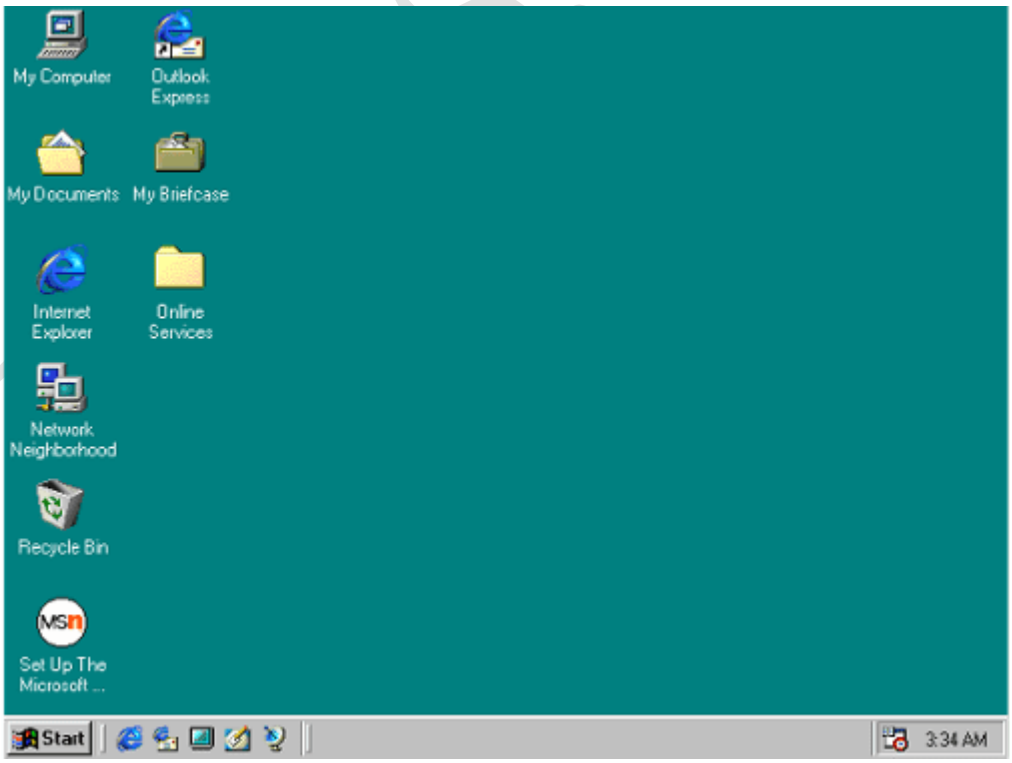
Internet Explorer also made its debut on Windows 95, but was not installed by default requiring the Windows 95 Plus! pack. Later revisions of Windows 95 included IE by default, as Netscape Navigator and NCSA Mosaic were popular at the time.

Windows 98

Released in June 1998, Windows 98 built on Windows 95 and brought with it IE 4, Outlook Express, Windows Address Book, Microsoft Chat and NetShow Player, which was replaced by Windows Media Player 6.2 in Windows 98 Second Edition in 1999.

Windows 98 introduced the back and forward navigation buttons and the address bar in Windows Explorer, among other things. One of the biggest changes was the introduction of the Windows Driver Model for computer components and accessories – one driver to support all future versions of Windows.

USB support was much improved in Windows 98 and led to its widespread adoption, including USB hubs and USB mice.

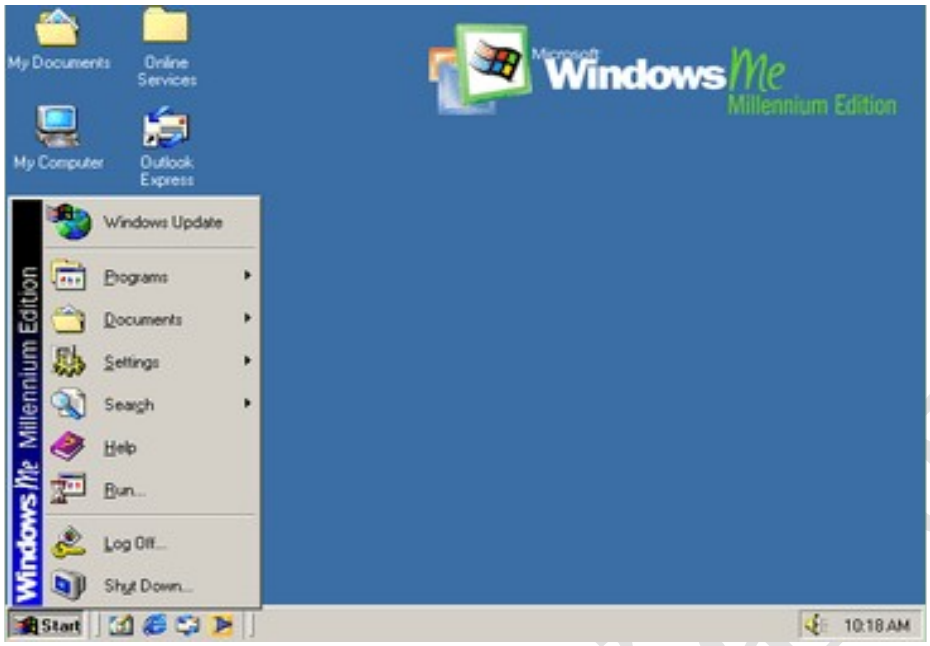


Windows ME

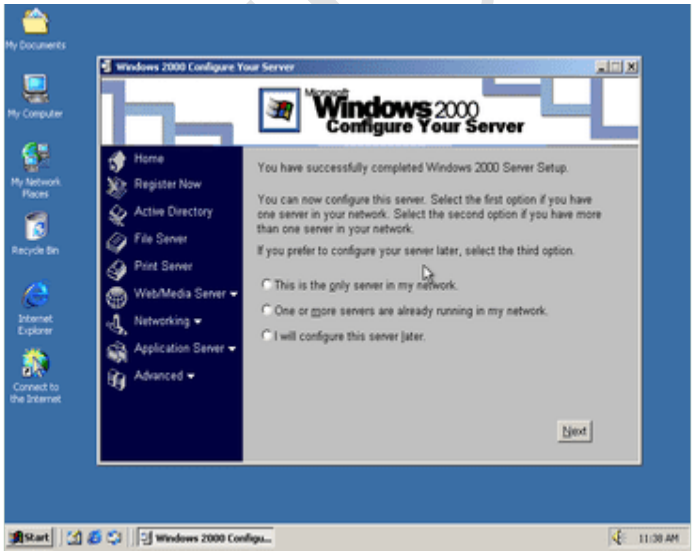
Considered a low point in the Windows series by many – at least, until they saw Windows Vista – Windows Millennium Edition was the last Windows to be based on MS-DOS, and the last in the Windows 9x line.

Released in September 2000, it was the consumer-aimed operating system twined with Windows 2000 aimed at the enterprise market. It introduced some important concepts to consumers, including more automated system recovery tools.

IE 5.5, Windows Media Player 7 and Windows Movie Maker all made their appearance for the first time. Autocomplete also appeared in Windows Explorer, but the operating system was notorious for being buggy, failing to install properly and being generally poor.



Windows 2000



The enterprise twin of ME, Windows 2000 was released in February 2000 and was based on Microsoft's business-orientated system Windows NT and later became the basis for Windows XP.

Microsoft's automatic updating played an important role in Windows 2000 and became the first Windows to support hibernation.

Windows XP

Arguably one of the best Windows versions, Windows XP was released in October 2001 and brought Microsoft's enterprise line and consumer line of operating systems under one roof.It was based on Windows NT like Windows 2000, but brought the consumer-friendly elements from Windows ME. The Start menu and task bar got a visual overhaul, bringing the familiar green Start button, blue task bar and vista wallpaper, along with various shadow and other visual effects.ClearType, which was designed to make text easier to read on LCD screens, was introduced, as were built-in CD burning, autoplay from CDs and other media, plus various automated update and recovery tools, that unlike Windows ME actually worked. Windows XP was the longest running

Microsoft operating system, seeing three major updates and support up until April 2014 – 13 years from its original release date. Windows XP was still used on an estimated 430m PCs when it was discontinued. Its biggest problem was security: though it had a firewall built in, it was turned off by default. Windows XP's huge popularity turned out to be a boon for hackers and criminals, who exploited its flaws, especially in Internet Explorer, mercilessly - leading Bill Gates to initiate a "Trustworthy Computing" initiative and the subsequent issuance of to Service Pack updates that hardened XP against attack substantially.

Windows Vista

Windows XP stayed the course for close to six years before being replaced by Windows Vista in January 2007. Vista updated the look and feel of Windows with more focus on transparent elements, search and security. Its development, under the codename “Longhorn”, was troubled, with ambitious elements abandoned in order to get it into production.

It was buggy, burdened the user with hundreds of requests for app permissions under “User Account Control” - the outcome of the Trustworthy Computing initiative which now meant that users had to approve or disapprove attempts by programs to make various changes. The problem with UAC was that it led to complacency, with people clicking “yes” to almost anything - taking security back to the pre-UAC state. It also ran slowly on older computers despite them being deemed as “Vista Ready” - a labelling that saw it sued because not all versions of Vista could run on PCs with that label.

PC gamers saw a boost from Vista's inclusion of Microsoft's DirectX 10 technology.

Windows Media Player 11 and IE 7 debuted, along with Windows Defender an anti-spyware programme. Vista also included speech recognition, Windows DVD Maker and Photo Gallery, as well as being the first Windows to be distributed on DVD. Later a version of Windows Vista without Windows Media Player was created in response to anti-trust investigations.

Windows 7

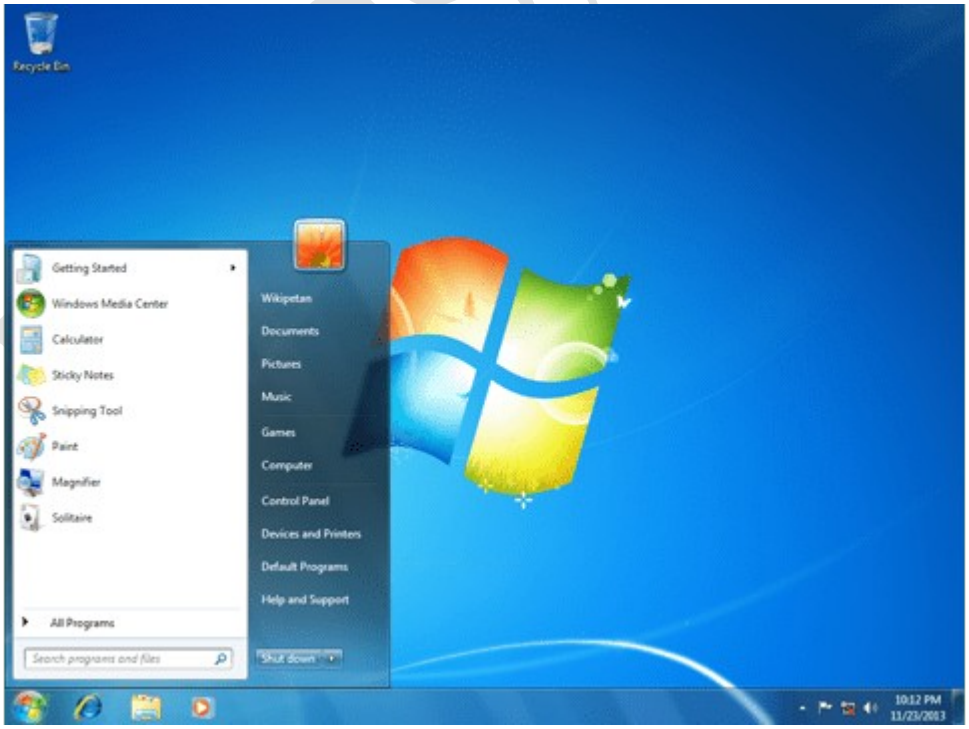
Considered by many as what Windows Vista should have been, Windows 7 was first released in October 2009. It was intended to fix all the problems and criticism faced by Vista, with slight tweaks to its appearance and a concentration on user-friendly features and less "dialogue box overload".

It was faster, more stable and easier to use, becoming the operating system most users

and business would upgrade to from Windows XP, forgoing Vista entirely.

Handwriting recognition debuted in 7, as did the ability to “snap” windows to the tops or sides of the screen, allowing faster more automatic window resizing.

Windows 7 saw Microsoft hit in Europe with antitrust investigations over the pre-installing of IE, which led to a browser ballot screen being shown to new users allowing them to choose, which browser to install on first boot.



Windows 8

Released in October 2012, Windows 8 was Microsoft's most radical overhaul of the Windows interface, ditching the Start button and Start menu in favour of a more touch-friendly Start screen.

The new tiled interface saw programme icons and live tiles, which displayed at-a-glance information normally associated with "widgets", replace the lists of programmes

and icons. A desktop was still included, which resembled Windows 7.

Windows 8 was faster than previous versions of Windows and included support for the new, much faster USB 3.0 devices. The Windows Store, which offers universal Windows apps that run in a full-screen mode only, was introduced. Programs could still be installed from third-parties like other iterations of Windows, but they could only access the traditional desktop interface of Windows.

The radical overhaul was not welcomed by many. Microsoft attempted to tread a fine line between touch-screen support and desktop users, but ultimately desktop users wanting to control Windows with a traditional mouse and keyboard and not a touchscreen felt Windows 8 was a step back. There were also too few touchscreens in use, or on offer, to make its touch-oriented interface useful or even necessary - despite the parallel rise of tablets such as the iPad, and smartphones, which had begun outselling PCs by the end of 2010.

Windows RT, which runs on ARM-based processors traditionally found in smartphones

and non-PC tablets, was introduced at the same time as Windows 8 with the Microsoft Surface tablet. It looked and felt like Windows 8, but could not run traditional Windows applications, instead solely relying on the Windows Store for third-party apps.

Windows 8.1

A free point release to Windows 8 introduced in October 2013, Windows 8.1 marked a shift towards yearly software updates from Microsoft and included the first step in Microsoft's U-turn around its new visual interface.

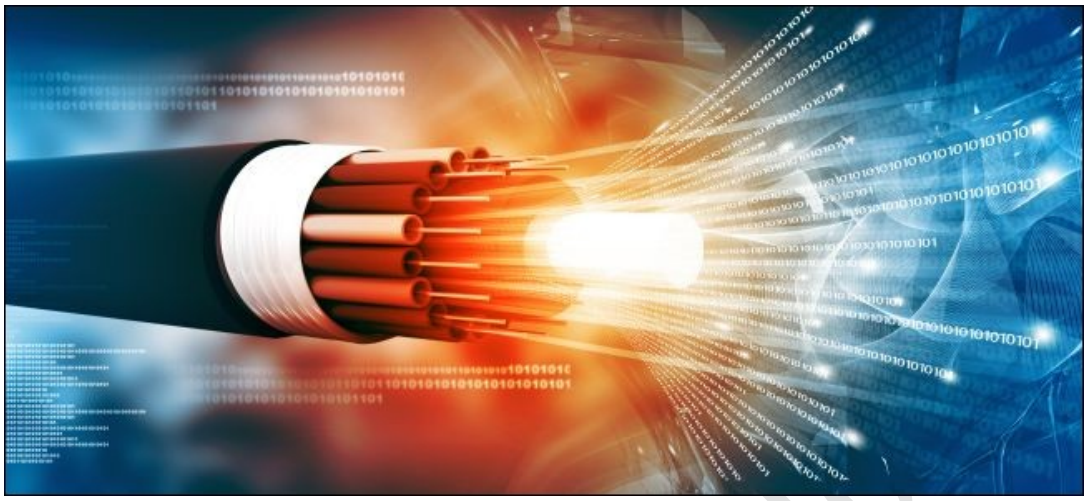
Windows 8.1 re-introduced the Start button, which brought up the Start screen from the desktop view of Windows 8.1. Users could also choose to boot directly into the desktop of Windows 8.1, which was more suitable for those using a desktop computer with a mouse and keyboard than the touch-focused Start screen.

Windows 10

The latest release of Windows. All the features of Windows 8.1 with new animations and control. Cortana AI System introduced.

By,
Pranav Krishna S
CLASS IX

Fiber internet technology



Fibre Internet is the latest change to the way data is transferred around the globe. It's much faster than

cable, way faster than dial-up, and can carry large amounts of data in a single line, often reaching multiple terabits of data transfer fairly easily.

Digital Subscriber Line (DSL) used the existing telephone lines to transmit data,

which were usually made of copper. DSL is slow, old, and has been phased out for the most part in favour of cable, but it remains in some rural areas. The average speed for DSL is around 10 Mbps.

Cable internet uses coaxial cable, also made from copper, and is generally bundled with the same cables used to run the television network. This is why many ISPs offer bundled plans with a TV subscription and Internet Access. The average speed for cable varies but ranges from around 10 Mbps to 200 Mbps

Fiber optic cables use small glass fibers to transmit data using pulses of light. The light travels much like electricity would through a copper wire, but the advantage is that fiber cables can carry multiple signals at once. They're incredibly small, so they're often bundled into larger cables called "fiber optic trunk cables," each containing multiple fiber lines. Fiber cables carry huge amounts of data, and the average speed that you'll see at your house is

around 1 Gbps (often called “gigabit internet”).

Fiber trunk cables form most of the backbone of the modern internet, and you’ll see the benefits of them even if you don’t have “fiber internet.” This is because the Internet Exchange Points (IXPs)—the switching and routing stations that connect your house to the rest of the world—use fiber optic trunk lines to connect to other IXPs.

But when it comes time to connect all the houses in the city to your local IXP (a run usually referred to as “the last mile”), your service provider will usually run traditional coaxial cable to your house. This run becomes the bottleneck for your internet speed. When someone says they have “fiber internet,” what they mean is that the connection from their house to the IXP is also using fiber, eliminating the speed limit of copper cable.

The Limits of Fiber

There's a reason fiber Internet isn't common—cost. Fiber is a lot more expensive to run and doesn't justify the cost when cable lines are often already available. For most people, the 10-200 Mbps speed they get on cable is enough, as most downloads from the internet aren't going to max out that connection anyway.

Your speed is only as good as the weakest link, and while fiber is certainly better than copper, a lot of times you won't see an increase in actual download speeds because of limits on the server from which you're downloading. An app like Steam downloading a 10 GB game seems like it would take only a few seconds on 1000 Mbps fiber connection, but in reality you'll only get around 50 Mbps maximum speed from Steam's servers.

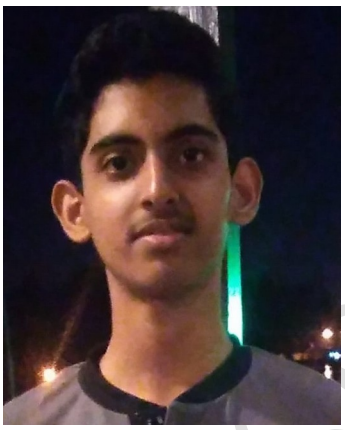
If you're using an application that can take advantage of the increased speed, or have multiple computers in the

house, then fiber might be a good option for you. Right now, though, it remains a service only available in a few select cities.

By, Antony Austin

Class 9

MTHSS



x PICS FROM STUDENTS 9

BY AMAL MANOJ C

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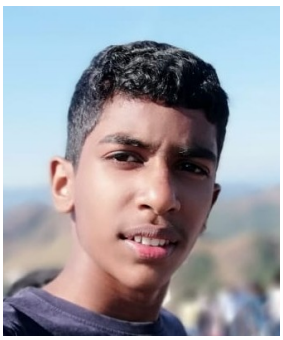

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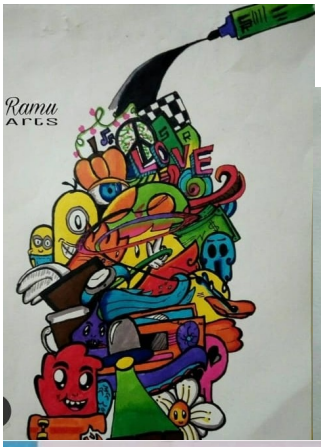
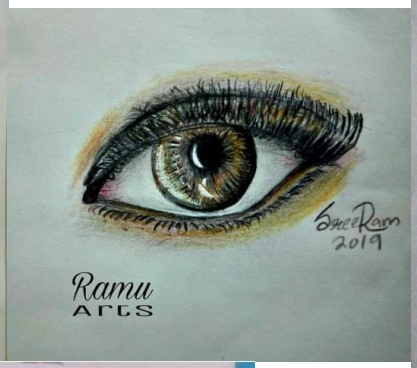
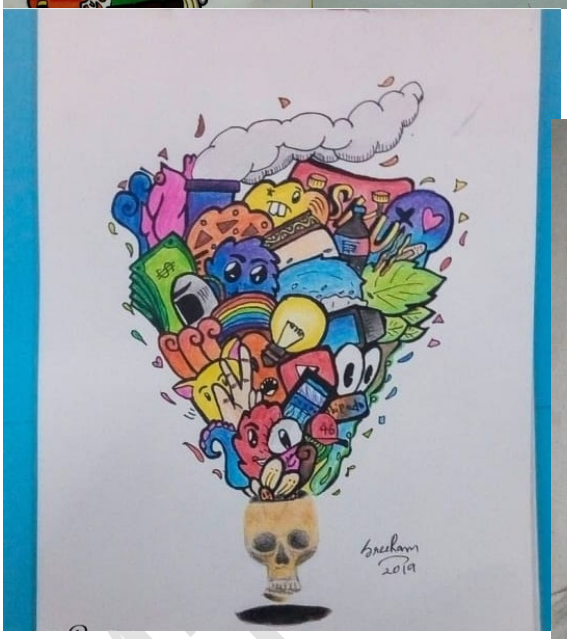


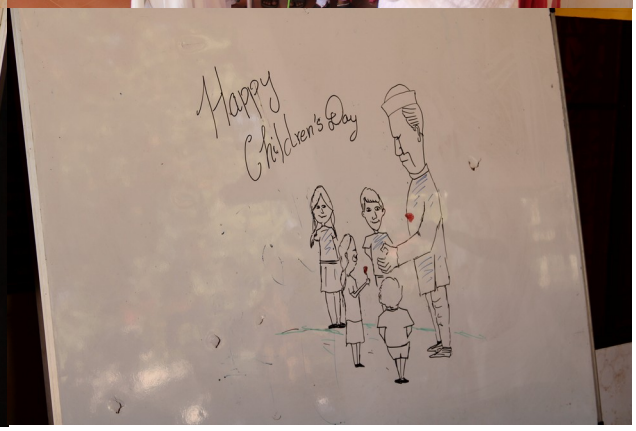




BY SREERAM SREEKANTH

CLASS 9

OUR CHILDREN'S DAY



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