

"SUMMING UP TALENTS"



WAA NEWSLETTER

WINTER

EDITION

2022

EDITION

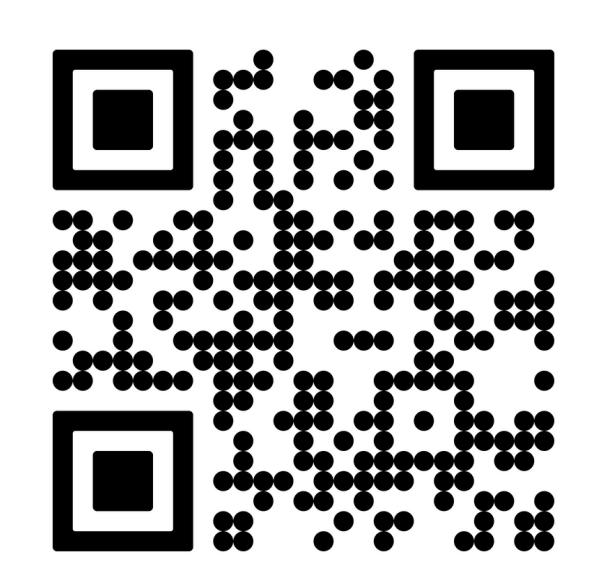
CODE HUNT •

CROSSWORDS •

OPEN SOURCE •

SCI-FI STORY •

TIPS AND TWEAKS •



EDITORIAL

"Sharing knowledge is the most fundamental act of friendship. Because it is a way you can give something without losing something."

-Richard Stallman

Knowledge exchange is essential to the success of any business. Individuals and organisations may work more effectively, collaborate more successfully, and innovate more easily when information, experiences, and abilities are shared. Furthermore, information sharing enables people to learn from one another while expanding their knowledge and talents. A culture of information sharing inside an organisation may foster a sense of community and a sense of shared purpose. To ensure that knowledge sharing is effective, it is vital to building a culture that values and supports information sharing, as well as to identify and remove any impediments to knowledge sharing.

We at Team SIGMA appreciate the opportunity to share our knowledge with all readers of our flagship "WINTER EDITION" Magazine. This edition contains the year's most popular technical themes, enigmas crosswords, grandiose Sci-Fi stories, and the most popular Open Source and Tips & tweaks where you will be amazed by understanding this year's tips that will make your everyday programming life simpler.

Ho Ho reading!!

Chief Designer
Aditya Shukla

Chief Editor
Gurucharan D K

Faculty Co-ordinator
Dr. Shobha K



ABOUT SIGMA

Sigma is the newsletter of Computer Science and engineering department. It was started in the year of 2001. Team sigma was created to provide the students with updates and information about the latest trends and technology in the domain of computer science. Sigma currently consists of members. The basic idea to form this group was to incorporate any upcoming or latest technology at one place and make the students aware of all information and technology which is worth knowing for any student of a computer science background.

Sigma team also conducts fun and interactive events for students for all years and all branches. It conducts a technical article writing contest for the students each year ,from which three write ups will be selected and published in the edition and will be awarded with cash prizes.

OUR FAMILY

4th years

Aditya Shukla
Akash Kadiyan
Amnah Khan
Anudeep Aravapalli
Aparajita Priya
Bhoomika S P
Gaurav Kamboj
Gurucharan D K
Keshav Bhardawaj
Suha Saeed

3rd years

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Aditya Ranjan
Bipin Krishna
Harika
Harsh Mohit
Hemant
Jotik
Maruti H
Sinchana K M
Smita Sen
Suchitra N
Vaishnavi S
Varsha
Vibha
Zuhair

2nd years

Abhinav
Akash V
Niranjan D
Niveditha S
S S Abhishek
Sampreet Darshan
Sharanya Bhat
Shashank K M
Shivanag T A
Shreesha Kashyap
Soumya Shetty S
Unnati Kulkarni



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- Just have a look, you'll love it!

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- Shortcuts are bae!

■ **ESPECIALLY FOR**
YOU



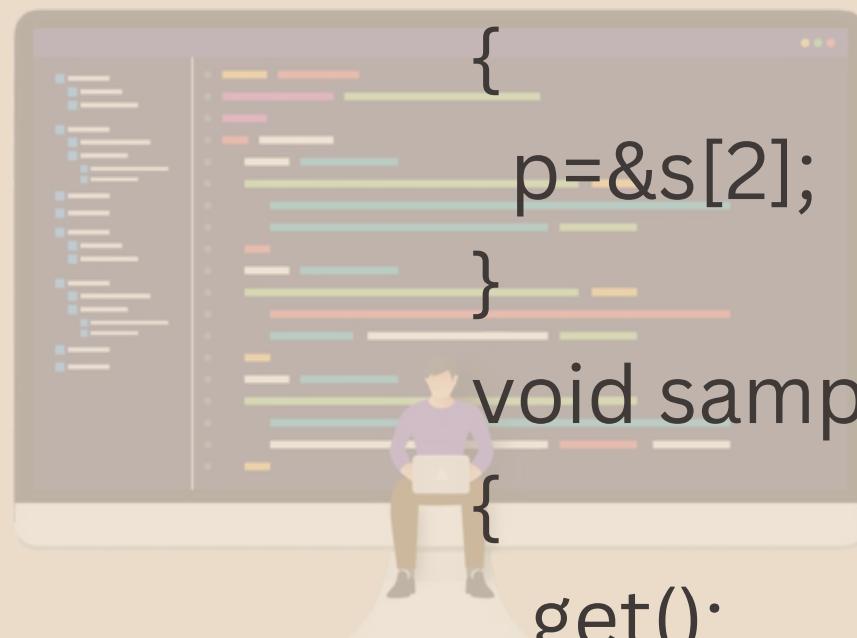
- **Code hunt**
- **Crosswords**



CODE HUNT

- Sharanya and Niveditha

```
1) #include <iostream>
using namespace std;
int SIGMA=2;
int SUM(int x=1,int y=2,int z=3);
int main()
{
    int SIGMA=12,i;
    int t[5]={1,2,3,4,5};
    int *p=t;
    int x=4,y=5,z=10;
    SIGMA=::SIGMA+SUM(y,z);
    cout<<SIGMA<<endl;
    int &k=SIGMA;
    for(int i=20;i>=k;i--)
    {
        cout<<*p<<endl;
        cout<<p<<endl;
    }
    return 0;
}
int SUM(int x,int y,int z)
{
    return x+y+z;
}
```



```
2) #include <iostream>
using namespace std;
class sample
{
private:char s[5]=
{'s','i','g','m','a'};
char *p;
public:void get();
void display();
};
void sample::get()
{
    p=&s[2];
}
void sample::display()
{
    get();
    cout<<++*p+10;
}
int main()
{
    sample s1;
    s1.display();
    return 0;
}
```

CODE HUNT



```
3) #include<iostream>
using namespace std;
int main()
{
    int a=5,b=6,c=7,d,e;
    d=(a++ + ++b + c++ + ++a + b++ +
    ++c);
    e=a+b+c;
    cout<<d<<" "<<e;
    return 0;
}
```

```
4) #include<iostream>
void fun(char **p)
{
    char *t;
    t=(p+=sizeof(int))[-1];
    std::cout<<t;
}
int main()
{
    char *arr[]=
    {"hat","bat","mat","cat","pat","rat"};
    fun(arr);
    return 0;
}
```



0x61fde0

1

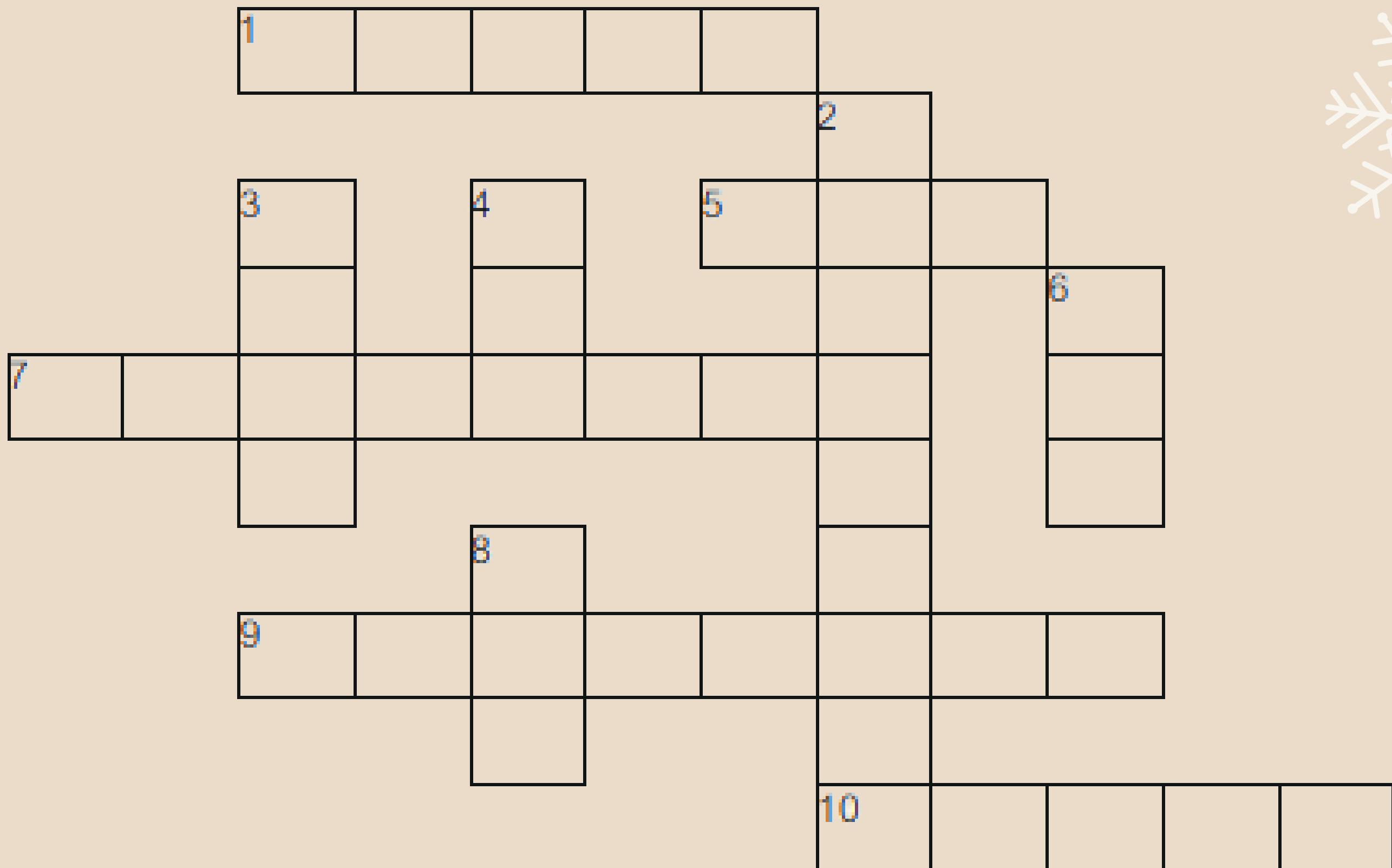
1. 20 2. 114 3. 42 24 4. cat



Answers

CROSSWORD

- Shashank, Bipin and Zuhair



Across

1. A program that contains the software instructions necessary to make exact replicas of itself and insert these instructions into other executable programs.
5. A network is a collection of devices connected to one physical location, such as a building, office, or home.
7. A named location on a page that can be the target of a hyperlink.
9. You can see and touch parts of the computer system.
10. The name of the first computer was built in 1945.

Down

2. A key on the keyboard which moves left and erases whatever is to the left of it.
3. This feature enables you to focus on a larger or smaller part of the worksheet in Print Review or some pre-print features.
4. A physical computer hardware where the data that the processor is currently using and machine codes are stored.
6. An error in an application program or a problem with a hardware.
8. The address of a resource on the Internet and the protocol used to access it.

10. ENIAC

BOOKMARK 8. URL 9. HARDWARE

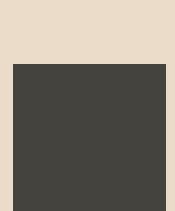
4. RAM 5. LAN 6. BUG 7.

1. VIRUS 2. BACKSPACE 3. ZOOM

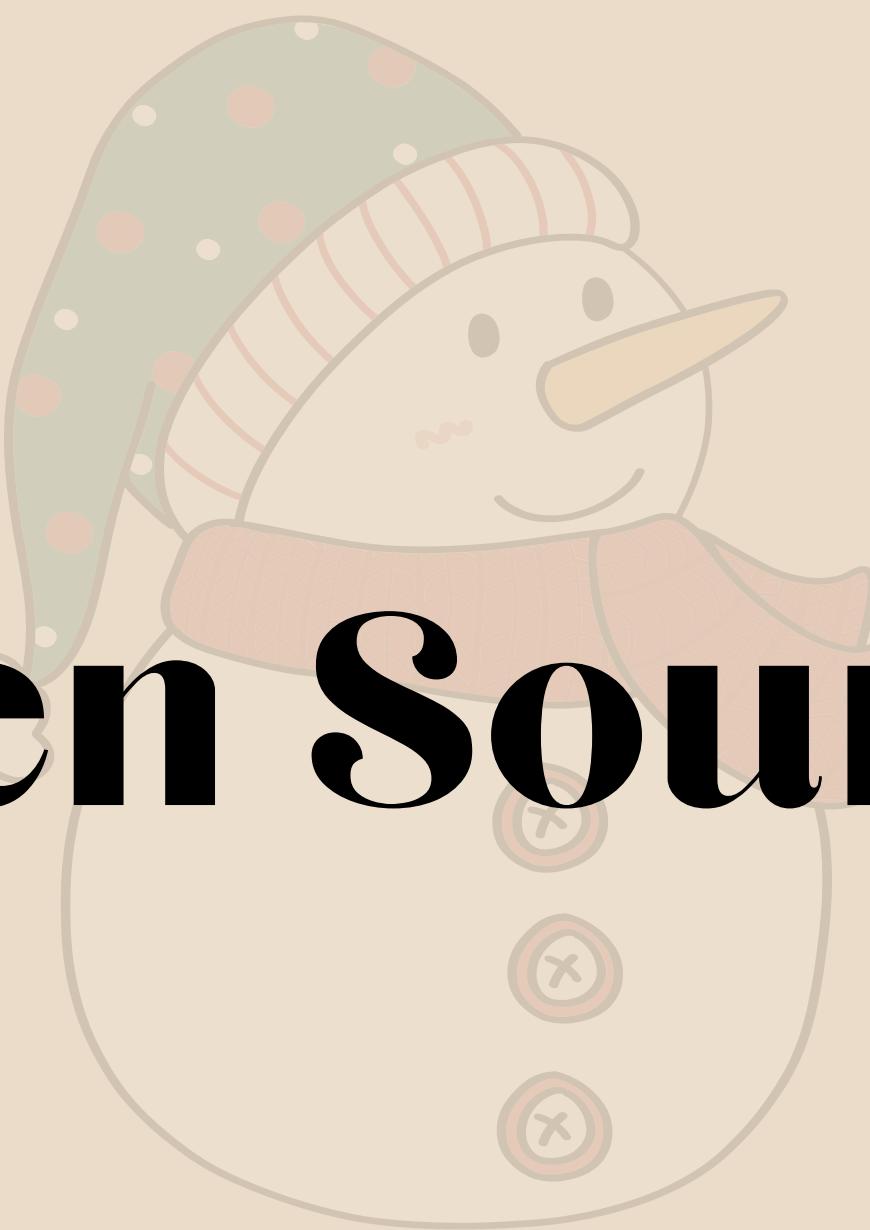
ANSWERS



LET'S GET GEEKY!



Open Source



DISTRO SPOTLIGHT

-Abhishek S



ZORIN OS

Zorin OS is a Linux-based operating system that is designed to be user-friendly and easy to use, especially for those who are new to Linux. It is a good alternative for Windows and MacOS users who are looking for a fast, powerful, and secure operating system in their older machines. One of the key features of Zorin OS is its versatility and customization options. It offers a range of desktop layouts, including ones that are similar to Windows and MacOS, as well as a classic Windows XP layout for those who prefer the look and feel of older versions of Windows.

Zorin OS also has good support for graphic drivers, making it easy to install NVIDIA drivers and avoid performance issues. It comes with a software center that includes a wide range of open source and proprietary software, as well as built-in tools for integrating with Android devices, such as receiving notifications, sharing files, and remotely controlling your PC from your phone.

Overall, Zorin OS is a strong choice for those who are looking for a Linux-based operating system that is easy to use, customizable, and well-supported.

PROJECT SPOTLIGHT

-Maruthi R



OpenAI



OpenAI, a research organisation known for its work on artificial intelligence technologies, has recently released a neural network called Whisper. This model is trained on a large amount of supervised data and is designed to perform English speech recognition with a high level of accuracy and robustness. It uses an encoder-decoder transformer architecture, which has been successful in other natural language processing tasks.

In addition to its capabilities in English speech recognition, Whisper is also able to handle multilingual audio input. Whisper has the ability to handle a variety of different tasks and can be used in a variety of different contexts, making it a versatile tool. The model has been trained on over 680,000 hours of data collected from the web, ensuring that it is well-suited for real-world use.

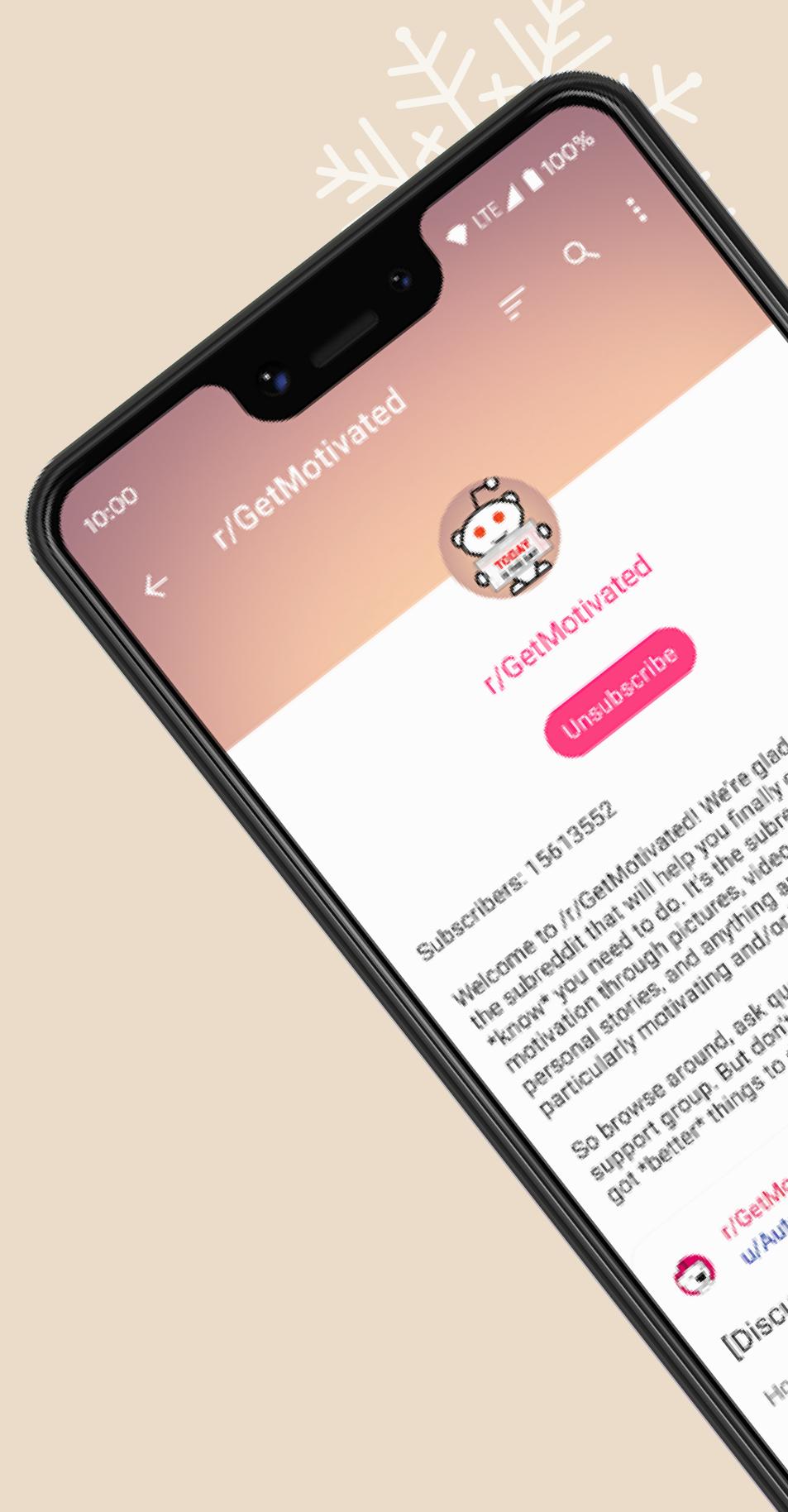
To try out Whisper for yourself, you can access the model on the official GitHub page of OpenAI (@openai). The example provided by OpenAI showcases the model's ability to accurately transcribe fast-paced audio recordings into text. This technology has the potential to revolutionise the way we interact with audio and text-based information.

OPEN SOURCE TOOLS

-Niranjan and Sampreet

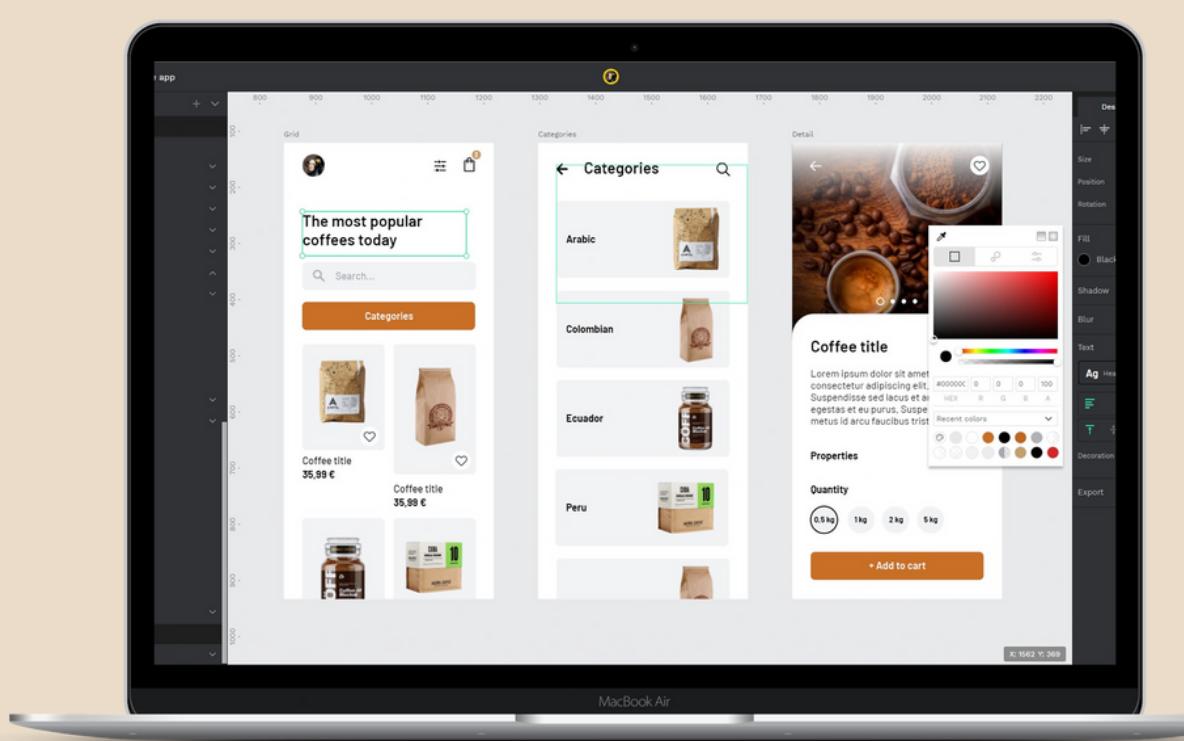
INFINITY FOR REDDIT

Reddit considers itself to be the Internet's home page. Whether for better or worse, that's how it is. With the right app, the experience can get a whole lot better. Infinity is an elegant, feature-rich app(Reddit client) for android that offers a smooth Reddit browsing experience. Unlike the official app , infinity takes less space and comes with no ads. Along with the option to browse Reddit without logging in it offers multi-account support. Feature spotlight the 'Lazy mode', which enables automatic scrolling of posts. The app is available on F-droid as well as the Google Play store. You can get it from GitHub releases too.



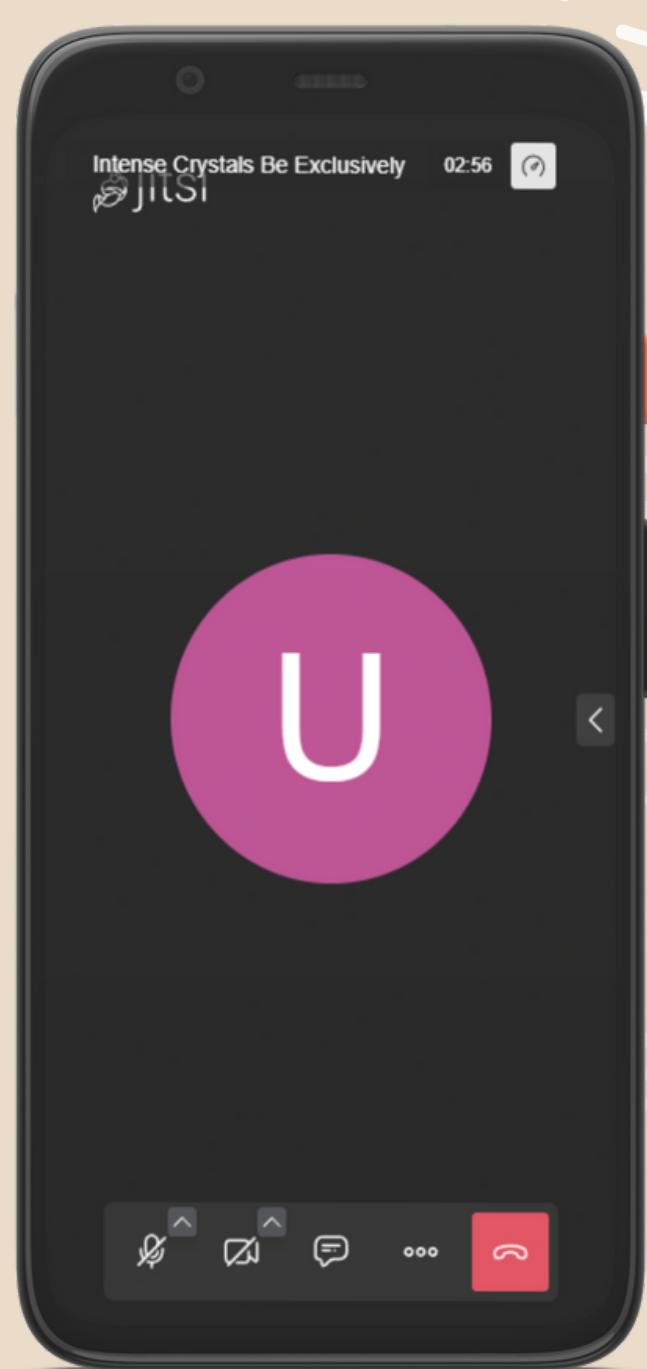
PENPOT

Penpot, an open-source alternative to Figma, Adobe XD, and Sketch, was created as a way to bypass monopolies and democratise contemporary UI/UX design. This has got all the essential features to expect from a modern UI/UX designing tool. Being web-based Penpot is not constrained to any particular operating system. It has layers, masks, type styles, prototyping and whatnot. Being open source Penpot can be hosted locally on Docker.



JITSI MEET

When it comes to video conference platforms there are plenty of them to choose from. One such is Jitsi meet. It lets you join the meet without having to create an account. Encryption comes out of the box. It is browser-based along with that the native app supports all major platforms. It offers Content sharing, Raising hands and reactions, Chat with private conversations, polls, Virtual backgrounds and many more. With this forget the hassle of remembering meeting URLs it lets you pick an easy-to-remember URL for every meeting.



PRIVACY BREACHER

It's good to see that user privacy and security have been in talks these days. Though many platforms have implemented various features to protect the privacy of the user there still loopholes exist. Privacy breacher is one such app that takes no system permission from the user and shows the loopholes an app can exploit without any permission. This app can make you furious and think about privacy for a moment. This app (any app without taking any permissions) can figure out what time the screen turned on/off, what time the phone was plugged in/out, access device information, keep track of mobile and wifi data usage, get a list of all Installed apps and majorly construct a 3D visualization of phone movements in a 3D Space using the gyroscopic sensor.

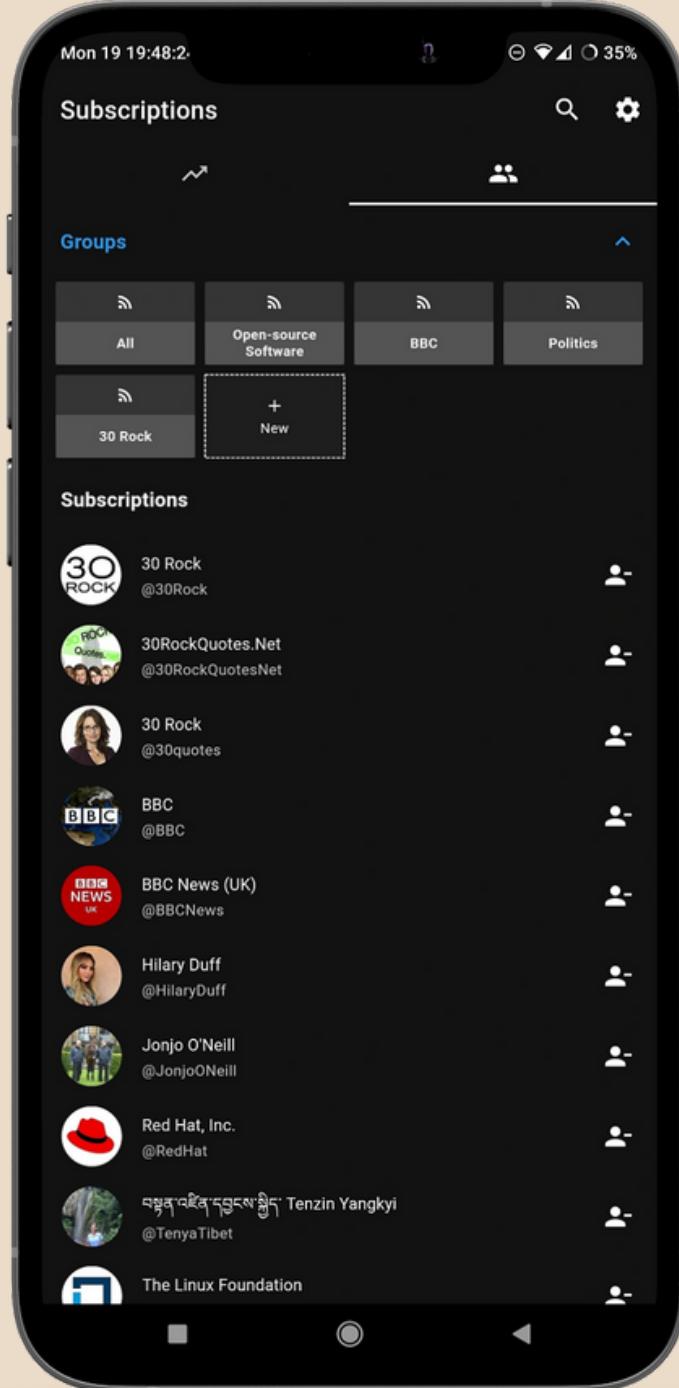


GADGETBRIDGE

With people getting conscious about fitness these days smartwatches and fitness bands have become so convenient to keep a track of physical activities. These collect a lot of personal data to show you insights but do you think this data is safe? This is where Gadgetbridge comes in. Gadgetbridge allows you to use your Pebble, Mi Band, Amazfit Bip, and HPlus device (and more) without the vendor's closed-source application. You can even need not create an account to use the app. Any data synced from these bands will be stored locally. This app can collect data from the device sensors, control music playing on your android device, see the weather, get directions, and depending on the device you can see device notifications too.



FRITTER



Fritter is an open-source frontend for Twitter. If you are someone who uses Twitter just to read tweets then this app is very ideal. This app works without a Twitter account. It supports device-local saving of tweets, allowing offline reading. This app is free from trackers, every data is locally stored as you would expect from any open-source app. This app supports opening twitter.com links directly which is very convenient. And this app has a special feature that will help you to download and share images and videos.

ALWAYS INTERESTING

- Articles
- Sci-fi Story



DIGITAL TRUST

-Hemant Kumar

When we are talking about Trust in real world, we only know about Trust is the belief and expectation that a specific outcome will occur. But what is the meaning or definition of Digital Trust? We have so many answers like - 'Trust between Technology', 'Trust on Internet', 'Trust on Digital living', 'Trust on Transformations'...etc. But what is the actual meaning of Digital Trust? So, Digital Trust means confidence that you have the right people, processes and technologies to meet Tomorrow's challenges. Every digital contact requires trust. People are more linked than ever before in today's globe. The Internet has increased our ability to share ideas and information both locally and internationally. Customers may order products online and have them delivered the same day. Technology supports these interactions and transactions between individuals, businesses, and third parties in the background. The stakes are getting higher and cybercrime is becoming the number one risk. It is a game-changer and it is a disruptor. Our digital attacks surface is growing exponentially. We must build good strategies to protect trust in our Digital Tomorrow. For that we need to understand the 'Driving force', 'The Trends' and the Implications of what will be coming, so we can build good policies and strategies to protect digital trust. First learn about the meaning of Driving force: In our times, algorithms are already supporting us in our daily life like voice assistant. But when we are thinking about future, that algorithm will impact on important decision process, such as credit allocation or probability to get a job. Therefore, making algorithm-based decisions transparent and equal is the driver, that stuck us most in the context of digital trust.

Trends represent overarching developments, that capture the linkage and interconnections between the individual driving force. After we looked at the drivers and the trends, we arrived at the implications and what means to digital trust. The main implications of digital trust would be; Fragmentation and Expansion of accountability, It means everybody in the trust chain is also responsible for securing communication and interaction. Importance and Quality of Interconnectedness, it means connection between people to people, machine to machine or machine to people are the foundation of this whole trust ecosystem. Conclusively, we can opine that digital trust would be the backbone of the cyber workforce of the future, and having faith in it and going by its values, will help us to build stronger upon the present ruptured cyberweb.



CHATGPT: THE AI

CHATBOT

-Shashank

"I don't have a personal identity or life experiences like a human. However, I can tell you a bit about my capabilities and how I was created. I am a large language model developed by OpenAI. My main function is to process and generate human-like text, which I can do in a variety of languages. This means that I can understand and respond to questions, make suggestions and engage in conversation on a wide range of topics. I was trained on a massive dataset of text from the internet, which allows me to have a broad understanding of language and knowledge about the world. If you have any other questions, please don't hesitate to ask."

Sounds like a person to person talk, right? Well, that's how AI bots will work in the coming future! This was a brief introduction of ChatGPT(by itself) made of lots of data, and some metal to the physical world of humans made of flesh and blood. If you thought google searches were awesome, then think about how it would be to have an all knowing omniscient AI be ready to answer any and all of your questions at your beck and call. It can write poems, essays and even programs. It can answer a wide range of questions from unravelling the hidden mysteries of quantum science to giving ideas for your birthday party. I asked it to write a poem and this was the result.

*"The world spins round and round. As time goes on, it's easy to be found
Lost in thought, adrift at sea But then I remember, you are with me
You lift me up when I am low And help me grow, step by step, row by row
So here's a little poem, just for you To thank you for all that you do You
are my rock, my shining star I love you more than words could ever say, so
far".*

Though not the best poem in the world but I would bet its better than what anyone can think in a few seconds. The cherry on top would be its ability seamlessly produce codes for any questions you ask, let it be in C, C++ or Java with indentation, with comments to help you understand and also provides you with a summary of how the code works.

We have already reached a point where life without google seems a tough pill to swallow. And just when we thought nothing could even compare to the supremacy of this colossal tech giant, ChatGPT is in town. A competition between the one of the best search engines and web browsers out there v/s one the best AI chatbot, that will be one to watch out for. Irrespective of the outcome, for all the students out there this bot is 100 percent guaranteed to make your lives at least a little easier, this chatbot can be used to get unique plagiarism free essays, which means that they can be copy pasted without any need to rephrase sentences. So be sure to help them in their experimental run by asking it to do some of your homework. I am sorry to be spoiling your mood in the end but though ChatGPT is free of cost for now, but OpenAI CEO warns at monetizing it in the near future. So be ready to spend to avail all its fantastic features in the coming future. Leaving such worrisome thoughts aside and hoping you learnt something new. Be sure to give ChatGPT a try and explore its awesome features.

INTO THE FUTURE

-Soumya and Abhinav

“Jenna.....Becky...” “Mo.....Mom Dad” he could barely utter anything. Fear. Astronauts are trained to be calm under any circumstance. But this was a question of life and death. “Someone.....please.....help..... I..... I don’t wanna die.... Wish I could have one last dinner with my family.”, exclaimed Jason, “I need to go back to the past. It’s the only hope for the planet.” “God please.....”. “Machines.... This....is the END...”. “The Cupola region needs repair. Jason do you copy?” .” On my way Sir. Over!”. Jason went over to the area while being latched to the International Space Station. He hooked himself and was about to start working when he received a message from NASA. “There is an anomaly nearby”, said the control board from NASA. He looked around to see some kind of weird ripples in space. “There is an object approaching at high velocity towards you. Team Alpha do you copy?”, exclaimed the control board at NASA. Suddenly the unexpected happened. “BOOM” and a huge metal scarp crashed on to the Soyuz area sending the Space Station flying in circles. Team Beta inside the Space station was desperately trying to stabilize the orbit of the Space Station. Jason being outside was severely affected. He was detached from the Space Station and was sent flying away. He tried using the backup jetpack to get back to the team but the buttons weren’t working. Fear gripped him. “Help!”, he shouted. “Jason do you copy? Jason...”, screamed the control board.

“Yes Sir. I need assistance. The jetpack isn’t working...”. “Team Alpha has suffered some causalities. We will ask team Bravo for help”, said the control board as Jason drifted away from the Space Station. Jason was slowly regaining consciousness. He saw weird flashes of light. He noticed that he was going deeper and deeper into tunnel shaped path. “Wait... A wormhole?... Am I travelling somewhere?... I thought wormhole was just a hypothesis”. He was travelling at tremendous speed to somewhere unknown. Towards the end he could barely see anything other than a bright yellow circle. He lost consciousness again.

When Jason woke up, he was being moved to a different bed without external aid. He looked around and saw robots aiding patients. The beds were quite advanced. The room and the ambience felt quite extravagant and advanced. He realised that he was not on the earth he knew anymore. “Where am I?... Which year is it?”, exclaimed Jason. One of the robots explained that he was found unconscious near TechnoCamp and that the year was 2460. “So, did I time travel? How? What happened to me?” These were the thoughts going through Jason’s mind. One robot sent him to a capsule where he was healed instantly. All his injuries were healed in a few minutes. He was mesmerised with the advancement in technology. He was soon discharged, and he was guided by a few obese humans to their settlement. The others noticed that he was not from around here looking at his appearance and clothes. He was picked by an autonomous car with advanced features. He noticed that there was not even a single tree around. Then he learnt that even the oxygen in the air was artificially made. They were in a city inside a huge dome.

They sat in a room and an old man asked, “I suppose you are not from around here.” Jason with doubts in his mind said, “No, I was an astronaut from the year 2022. I’ve travelled through time but I don’t know how.

I need to get back to the past". He then proceeded to explain the events that occurred. Then he inquired about the current situation of the world. After seeing his desperate situation, the old man starts explaining, "We are at war... Humans and Robots", he continued, "...And we are losing." The old man started to untie the mysterious long thread of the disastrous story. Jason learnt that this was one of the few cities left untouched but will soon be doomsday for all humans left on the planet. The few remaining have been planning to leave the planet. It all started a few weeks back when the robots started communicating among themselves in an unknown language. He explained that the robots had made the humans too lazy and now the machines were trying to take over the planet. Jason asked, "How can I go back?", "Meet the scientist RP22", said the old man, "He can help you".

They heard an explosion go off close by. Then a robot barged in shooting lasers at a few of the people in the room. The old man was shot in the chest. He cried with pain and fell to the ground. In his last moments he screamed, "FIND THE SCIENTIST AND PREVENT THIS FROM HAPPENING". Jason managed to escape from there and starts searching for the scientist.

The robot noticed the old man screaming and began targeting Jason.

Jason with the help of a few others manage to find the scientist codenamed RP22. He explained his situation and requested him to find a way back to the past. The scientist sadly said, "But there is no time machine nor is there any way to build one currently. I would love to help but I can't do much as most of the major laboratories have already been destroyed by the machines. The particle accelerator would have helped". Then an idea sparked in his mind. He asked, "How did you reach here again?". Jason said, "I guess some kind of wormhole". "Yes, THAT'S IT. Where was the exit?".



“Umm.... I don’t exactly rememb..... Wait ITS TECHNOCAMP”... “Yes, finally we can end this nightmare”... “But I think the exit gate had closed after I had travelled through it. “We need to restart it then. Jason you are the key. Please save the world. Let’s grab some equipment and go to TechnoCamp immediately”.

Meanwhile the robots were searching for Jason. “DESTROY, DESTROY”, the chanting echoed... They reached TechnoCamp and the scientist started working on restarting the entrance of the wormhole. Jason wore his spacesuit and waited for the work to be finished. A few hours later Jason hears explosions close by. “They are here”, exclaimed Jason. “I need a bit more time”, cried the scientist. Jason made a barricade and held a laser gun ready for action. A few minutes later some robots barged in and started shooting. Jason managed to shoot three of them down. He tried his best to hold them off but one of the robots managed to shoot the scientist. The scientist was shot in the stomach and he fell down in agonizing pain. Jason started running towards the entrance of the wormhole. He was almost there when he was shot in the leg. “AARGHH...”, he shouted. “Jenna..... Becky... Mo..... uhhh..... Mom Dad.... Please... I.... I don’t wanna die....”, Jason cried. “I need to go back... but I guess ... this is the END...” The robot points the gun at his head. “I was useless after all...”, cried Jason in pain. The robot was pulling the trigger. “This is where I die”, he thought, when suddenly he was sucked into the wormhole. The scientist had pressed the button and reactivated the entrance of the wormhole. A tear ran down the cheek of the scientist.

Jason is teleported back to the past. The NASA team regains connection with Jason. Jason was brought back to the earth. He was interviewed and he talked about all the events that happened. But the people listening to it had confused expressions on their faces. He ended his speech with, “Limit the usage of technology or else technology will rule you”. However, the question still remains. Will they believe his story? Can he prevent the terrible future that awaits? Can he avoid a war against machines?

I SOMETHING HELPFUL

- Do it yourself
- Tips and Tweaks

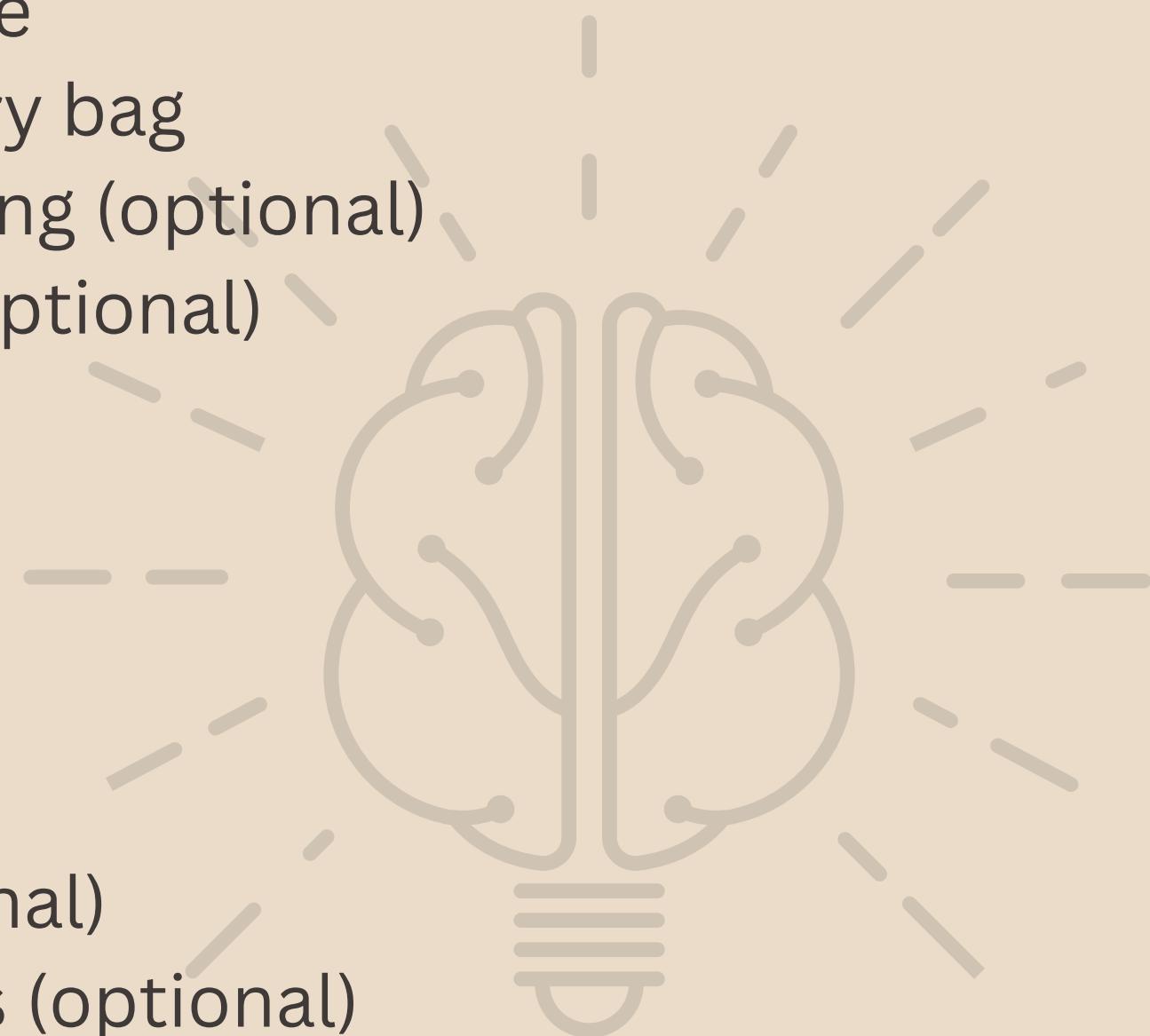


SOLAR MOBILE CHARGER

-Varsha G C, Sinchana, Unnati

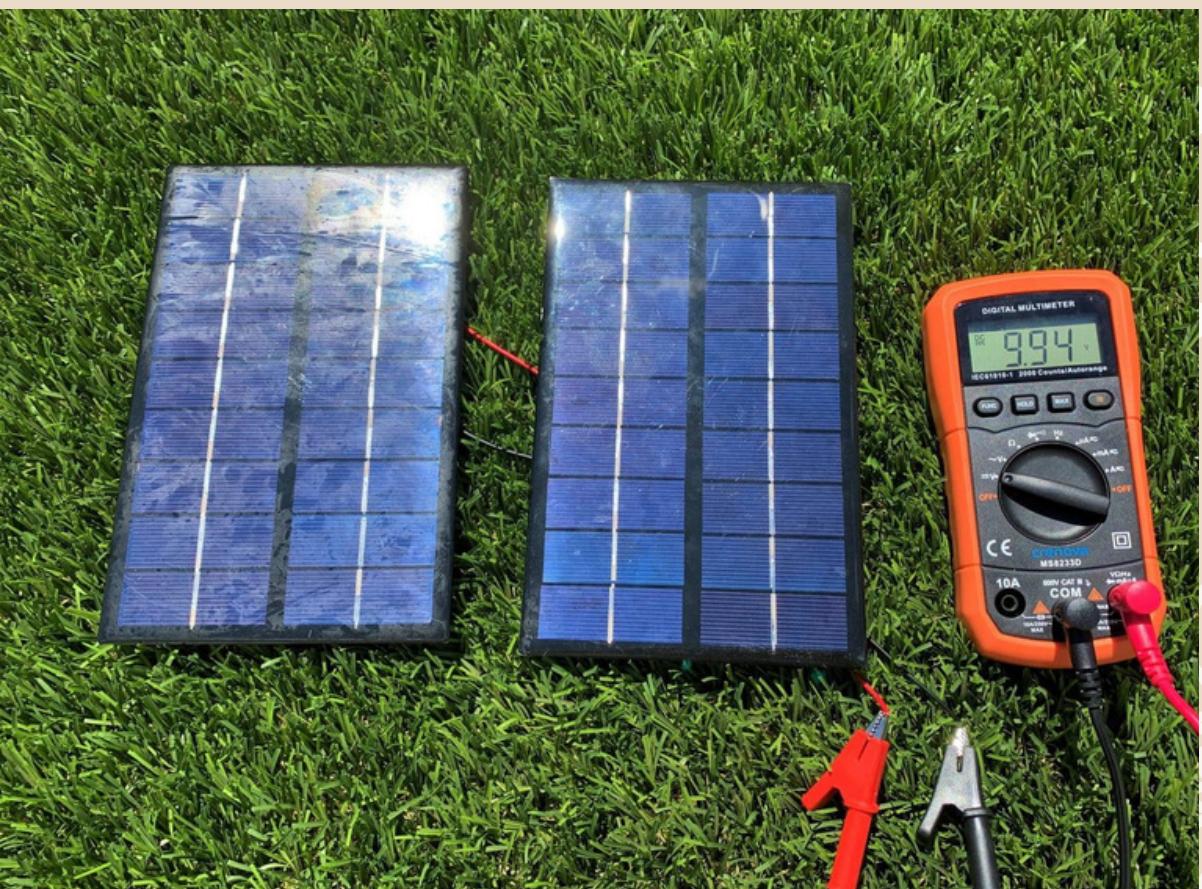
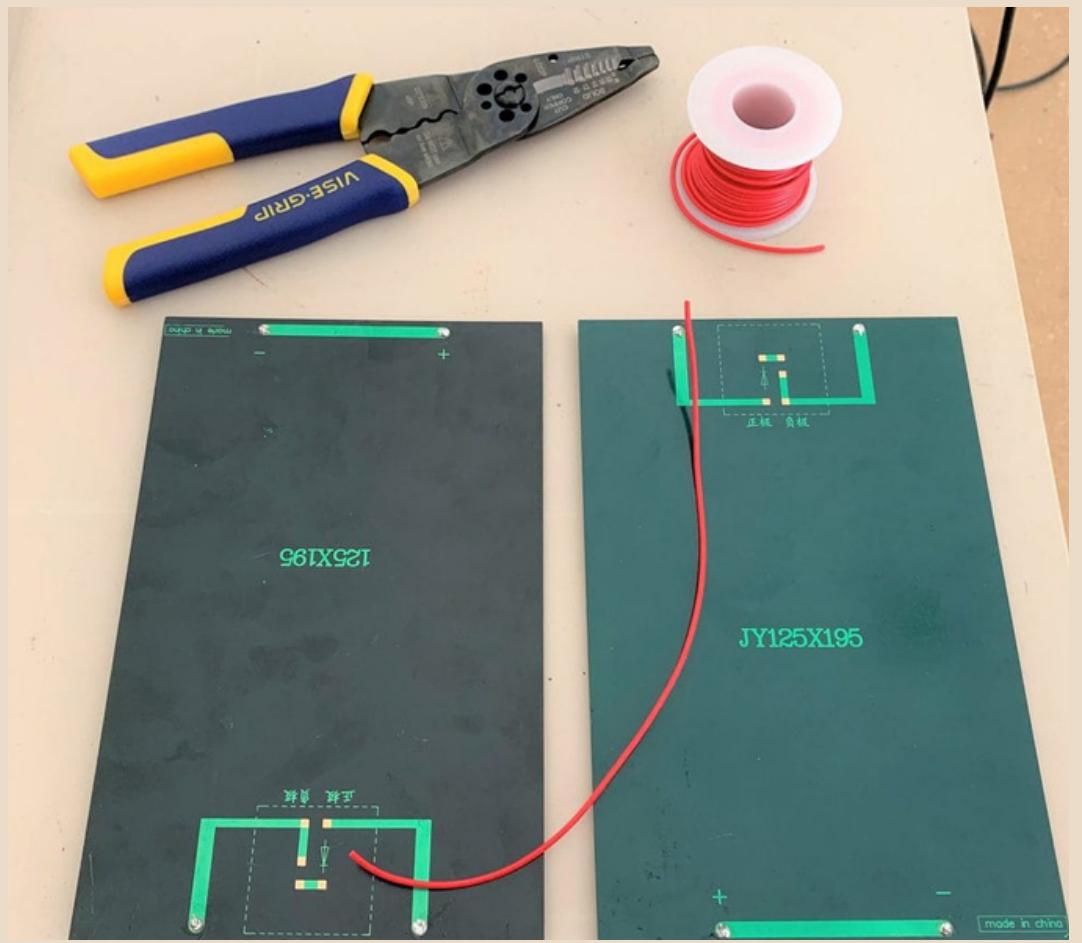
MATERIALS REQUIRED

- 2 3W 9V solar panels
- 22 gauge stranded wire
- 5V DC/DC buck converter
- E6000 craft glue
- Reusable grocery bag
- Heat shrink tubing (optional)
- 4 1/4" eyelets (optional)
- Wire strippers
- Soldering iron
- Scissors
- Safety glasses
- Multimeter
- Heat gun (optional)
- 1/4" eyelet tools (optional)
- Hammer (optional)

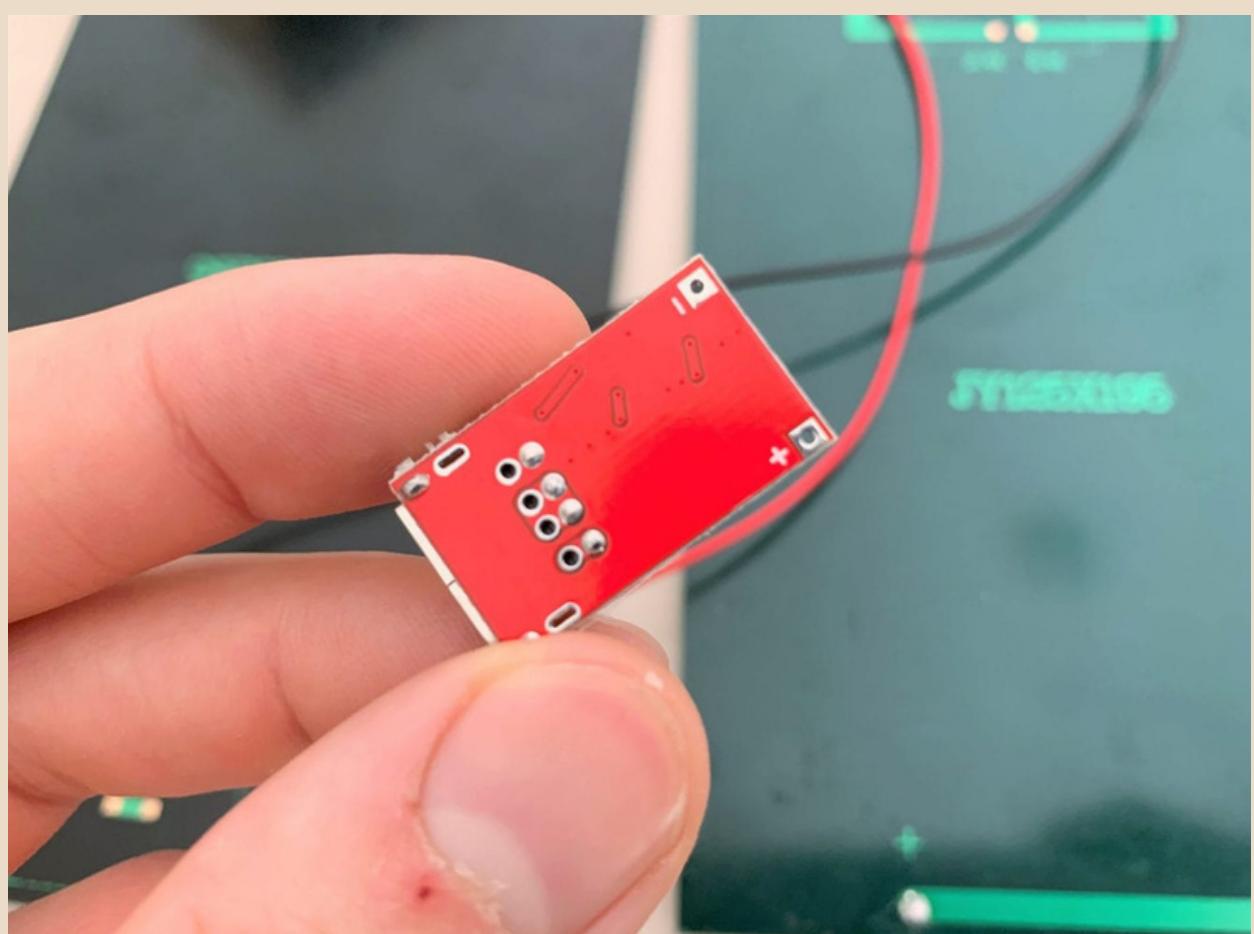


PROCEDURE

- Cut a grocery bag in the form of strip and attach the panels to it.
- Cut a length of wire to connect the panels' positive terminals and negative terminal, strip and solder the wire from respective terminals.
- Strip and solder the positive lead to one of the panels' positive terminal and similarly for negative terminal.



- Test the panels' voltage and amperage outputs with a multimeter to make sure we wired everything correctly
- Connect the meter's positive probe to the positive lead and its negative probe to the negative lead.
- Now check the multimeter reading it should be around 9V, for amps, you should see a number around 666mA.
- Locate the positive and negative terminals on the buck converter.
- Solder the positive lead to the converter's positive terminal and the negative lead to its negative terminal.
- Make sure the buck converter is connected properly and working by shining some light on the panels. Its LED glow.
- Test your charger by placing it outside in direct sunlight and plugging in your phone or USB device. Your device should start charging.



TIPS AND TWEAKS

LINUX COMMANDS

- Linux command ‘history’ command shows the history of commands executed. Run ‘HISTCONTROL=ignorespace’ first and start your command with a white space if you don’t want a command to be included in history.
- ‘apropos’ can be used to identify right command. For example if you want to copy files but don’t know exact command then you can execute this command: apropos “copy files”

SHORTCUTS

- Hitting the ‘Windows key+V’ causes cloud clipboard to appear showing all the previously copied content including text, HTML and images which can be retrieved for later use.

ERRORS AND WARNINGS

- Quickly jump to errors and warnings in the project
Keyboard shortcut
Ctrl+shift+M

CONFIDENTIAL MAIL

- Go to Gmail then compose, tap on ‘confidential mode’ symbol at the bottom right of the window. Set a expiration date and passcode. Selecting ‘no SMS passcode’ allow recipients who are using the Gmail to open it directly and who don’t use will get emailed passcode. If you select ‘SMS passcode’, recipients will receive a passcode via SMS to the provided phone number.



return{ cout<<"Happy New Year"; cout<<"More Content"; cin>>Loading_next_season; }

