



## Vivekananda Institute of Professional Studies

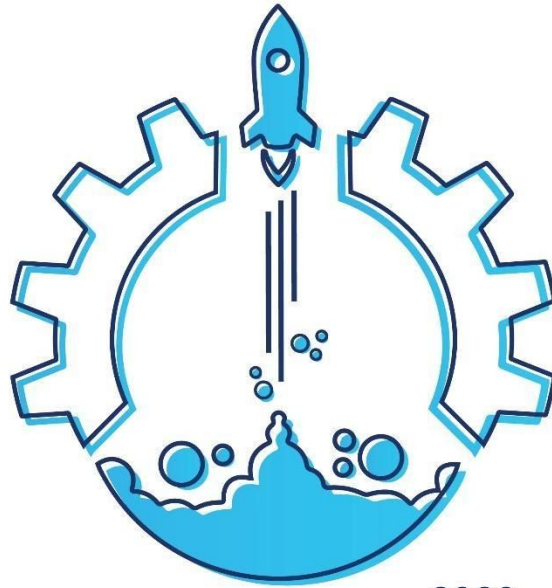
Affiliated to GGSIPU, Approved by AICTE, Recognized by Bar Council of India  
Accredited Grade "A" Institution by NAAC, Recognized under Section 2(f) of UGC  
MCA Program Accredited by NBA, ISO 9001:2015 Certified Institution



# ACE


THE TECHNICAL SOCIETY OF VSIT, VIPS

P R E S E N T S



2020  
*Hack* VSIT  
3<sup>rd</sup> EDITION

IN ASSOCIATION WITH

 Developer Student Clubs  
VIPS

# THEMES

# **SUSTAINABLE DEVELOPMENT GOALS**

The Sustainable Development Goals (SDGs) are a collection of 17 global goals designed to be a "blueprint to achieve a better and more sustainable future for all." The SDGs, set in 2015 by the United Nations General Assembly and intended to be achieved by the year 2030, are part of UN Resolution 70/1, the 2030 Agenda. We have divided them into 5 groups for a better understanding of the goals as a big problem statement for our participants.

*You can choose to cater to one or more of the 17 SDGs with your solution/product in HackVSIT.*

## **Good health and well being**

Mental health is often neglected when it comes to health issues. But mental illness is a global problem. More than 300 million people, 4.4% of the world's population, suffer from depression. These alarming figures reflect the wider prevalence of mental ill-health more generally. It is estimated that mental health conditions will affect a staggering one in four people at some time in their lives.

## **Quality Education**

Education indeed leads to empowerment. Quality Education has the power to transform a generation by providing them with the knowledge and confidence required to attain their full potential. Currently, India has an illiteracy rate of 25.96 percent. These numbers reveal the need for proper education as it plays a leading role in the development of an economically stable and sustainable livelihood for all.

## **Decent work and economic growth**

Economic development is crucial for remodeling a nation's standard of living. It adds up to the foundation of advanced technologies that have the potential to assist our generation in the future. Not only this, economic growth acts as a helping hand in improving a country's employment rate.

## **Industry, Innovation, and Infrastructure**

With the rise in modernization, industries and infrastructure have now transitioned as sectors of primary importance. Talking about the current scenario, a majority of people lack access to even primitive facilities such as electricity, sanitation, internet, industrial processing, and more. With around half of the world's population now residing in cities, there is a constant demand for sources of energy and transportation. All these factors demonstrate an inescapable need for innovation in the industrial sector.

## **Sustainable Cities and Communities**

The development of sustainable cities and communities is one of the many global goals that aim at establishing a sustainable environment. With the consistent spike in population, maintaining a safe and resilient human settlement is now posing a compact challenge on us. Cutting down the effects of natural disasters, inclusive urbanization, ensuring affordable housing, and building a safe atmosphere for all are some of the primary goals that should be targeted to create a sustainable future for all.

## **Responsible Consumption and Production**

Responsible consumption and production focus on composing an improved resource management structure. Around 1.3 billion tonnes of food ends up rotting in storage bins due to poor transportation and harvesting conventions. The earth has just 3 percent of fresh water that needs to be utilized efficiently. With the rise in energy usage, consumption and production require inevitable attention. Reducing resource use, degradation, and pollution are a few factors that should be addressed at a global level.

## **Affordable and Clean Energy**

Energy is the prime contributor to climate change; it produces around 60% of greenhouse gases. 1 in 7 people still dearth electricity and most of them live in rural areas. More energy-efficient measures could narrow down industrial electricity depletion by 14%. Yet, as with the ongoing population growth, the demand for cheap energy, and an economy reliant on fossil fuels is creating drastic changes to our climate. Expanding infrastructure and upgrading technology to bring forth cleaner and more efficient energy in the world will vitalize growth and help the environment.

## **Clean water & sanitation**

Each year millions of people, mostly children, die from illnesses cognate with inadequate water supply, sanitation, and hygiene. More than 2 and ½ billion people have acquired access to improved drinking water sources since 1990, but 666 million people are still without it. Clean water is scathing to survival, and lack of it can impact the health, food security, and sustenance of families across the world. Although our planet has an abundant amount of freshwater to achieve a regular and clean water supply for all, bad economics and poor infrastructure can skew supply adversely.

## **Climate Action**

Climate change is increasing the frequency and extremity of weather phenomena such as heatwaves, droughts, floods, exasperating water management problems, decreasing agricultural production and food security, increasing health risks, and interrupting the provision of basic amenities, etc. From 1880- 2012, the average global temperature increased by 0.85°C. Oceans have warmed, the amounts of snow and ice have depleted, sea level has risen. Global emissions of carbon dioxide (CO<sub>2</sub>) have increased by almost 50% since 1990. Emissions have grown more rapidly between 2000 and 2010 than in each of the 3 previous decades.

## **Life Below Water**

We are a land-dwelling species, but we depend more on our oceans than we can imagine. Oceans cover close to 3 quarters of the Earth's surface and contain 97% of the Earth's water. Over 3 billion people depend on marine and coastal biodiversity for their sustenance. As much as 40% of the world's oceans are adversely affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats. Across the globe, 1,851 species of fish - 21 percent of all fish species estimated - were deemed at risk of extinction. Our rainwater, drinking water, and even the oxygen we breathe, are all eventually provided and regulated by the sea.

## **Life on Land**

Human life depends on the earth as the ocean for our sustenance. Plants provide 80 % of our human diet, and we rely on agriculture as a prominent economic resource and means of development. Forests account for 30 % of the Earth's surface, providing vital habitats and sources for millions of species, clean air, and water as well as being pivotal for striving against climate change. Today we are looking at unprecedented land degradation. Of the 8,300 animal breeds known, 8 % are extinct and 22% are endangered.

## **No Poverty**

One of the greatest challenges facing humanity is eradicating poverty in all its forms. Many are still struggling for the most basic human needs. 736 million people still live in extreme poverty. 10% of the world's population lives in extreme poverty, down from 36% in 1990. Together, we can feed the hungry, wipe out disease and give everyone a chance to prosper and live a productive and rich life.

## **Zero Hunger**

Every day, a lot of men and women across the globe struggle to feed their children a healthy diet. In a world where we produce enough food to feed everyone, 821 million people – 1 in 9 – still go to bed on an empty stomach every night. Even more – 1 in 3 – suffer from some or the other form of malnutrition. Zero Hunger pledges to end hunger, achieve food security, improve nutrition and promote sustainable agriculture.

## **Gender Equality**

Women and girls represent half of the world's population and, therefore, half of its potential. Gender equality, besides being a fundamental human right, is important to achieve peaceful societies. Women earn only 77 cents for every dollar that men get for the same work. 35 percent of women have experienced physical and/or sexual violence.

## **Reducing Inequality**

There is a growing consensus that economic growth is not sufficient to reduce poverty if it is not inclusive and if it does not involve - economic, social and environmental development. It is well documented that income inequality is on the rise, with the richest 10 percent earning up to 40 percent of total global income. The poorest 10 percent earn only between 2-7 percent of total global income. These widening disparities are a call for action that require the adoption of sound policies to empower the bottom percentile of income earners and promote economic inclusion of all regardless of sex, race or ethnicity.

## **Peace, Justice, and Strong Institutions**

Some regions enjoy peace, security, and prosperity, while others fall into seemingly endless cycles of conflict and violence. By the end of 2017, 68.5 million people had been forcibly displaced as a result of persecution, conflict, violence or human rights violations. There are at least 10 million stateless people who have been denied a nationality and its related rights.

## **Partnerships for goals**

The SDGs can only be perceived with well-built global partnerships and alliances. While humanitarian crises brought on by conflict or natural disasters continue to demand more financial resources and aid. An ambitious and interconnected global development agenda demands a new global partnership which comprises financing development, connecting people through information technology networks, international trade flows, and strengthening data collection and analysis.

## **WOMEN'S SAFETY**

Among the worst countries in crime, India has a heinous track record in all forms of sexual abuse. In homes, on streets, in public transports and even offices. Indian women are in a perpetual plight of alertness, like a country on terrorist alert. There have been freakish cases of rapes of toddlers, gang rapes and women trafficking. Women's safety involves strategies, practices, and policies which aim to reduce gender-based violence (or violence against women), including women's fear of crime. Are there any innovative and implementable objectives, through which we can build an effective, fast and reliant system to make women of India feel safe and empowered?

## **WILDLIFE CONSERVATION**

Global Wildlife population has dropped by over 60 percent since the 1970s. According to a report published by the World Wildlife Fund, 'Earth is losing biodiversity at a rate seen only during mass extinctions.' Around 93 percent of wild cats have been lost in the past half-century, 100 million sharks and 85 thousand elephants are killed every year for illegal supply in the animal trade market. Talking about the present scenario, more than 500 million animals lost their lives in the Australian wildfires. And, these numbers are still increasing day by day. If this trend continues, the earth would lose all of its wildlife in a very short time. What you can do is spread awareness and educate people about the need for wildlife, and how animals have equal rights on this planet just like us humans. Help prevent poaching, illegal trading, and environmental degradation so that we can protect ourselves as well as our companions in the world. Interested candidates can work on the following domains to solve the problem statement. However, better technologies and ideas are always welcomed.

## SPECIAL PRIZES

This year our sponsors have made HackVSIT even more exciting for our participants. There are various special prizes for the product/solution which meets some specific requirements as mentioned by our sponsors below:



MLH is offering 3 special prizes to our participants based on the categories listed below.

- Best Beginner: best hack by a team made up of at least 50% first-time hackathon attendees.
- Best Jugaad: Silly and innovative, a hack that makes you say "I can't believe that works".
- Best use of Microsoft Azure: Best use of any product in the Microsoft Azure cloud platform.



Matic is offering a cash prize of up to ₹20,000 to the best of the teams who will build their solutions using matic and/or ethereum.

The solutions will be judged by the matic network team. To know more about matic and ethereum and their submission guidelines, please read the following document carefully.

Matic Submission Guidelines:-

<https://paper.dropbox.com/doc/Matic-Ethereum-Track-Prize-FToXnL0x0THdKv7C3PaT9>

*Voiceflow* is offering an Amazon Echo Dot and exclusive Voice Flow t-shirts to the best of the teams who develop a voice-based product/solution.



The implementation of the 2030 Agenda for Sustainable Development Goals and its 17 SDGs officially began on 1 January 2016, as the UN family, nations, businesses, civil society, and many others looked to how they can transform the very way we live. We have now entered the decade of action. Can you leverage the power of technology to fast track the global goals? Select any of the 17 SDGs and begin to "Hack for Sustainability".

Learn more at:

<https://www.in.undp.org/content/india/en/home/sustainable-development-goals.html>

**Problem Statement I:**

Build an intelligent and creative solution to track activities in schools and colleges that aim to achieve SDGs. Your system should be able to rank educational institutes in ascending order based on their performance in achieving each sustainable development goal. Brownie points for the essence of gamification.

**Problem Statement II:**

Develop a system for monitoring Temperature, Humidity, Pressure, light intensity, sound intensity levels, and CO levels, etc in the region around. Can you use insights gained from this data collected through a network of such devices to solve local climate problems?

**Problem Statement III:**

Develop an innovative solution for Capacity building in National Hydrological & Meteorological Services.

Learn more at:

<http://bit.ly/hydrometindia>

**Special Prize**

Selected participants from the above mentioned problem statements would be invited to present their ideas at Varysian Hydromet Symposium: India.

The Varysian Hydromet Symposium: India will be held in Delhi between 16-18 March 2020 - and will involve senior decision makers from the WMO, World Bank, and UN. Topics will range from the latest technology, science, and research to big picture issues around climate change, agriculture, and WMO policy.





Bobble AI is making communication personalized and expressive using image, text and voice. Create something on a similar vision which makes communication on chatting apps more easy/ expressive/personalized for rural India.

There are three ways humans interact with their mobile devices:

1. Text (Word Suggestion / Swipe Typing / Transliteration etc)
2. Image (Camera / Beauty camera etc)
3. Voice (Voice assistant, Speech typing etc)

These are called input methods.

Come up with an innovative solution to improve the way users communicate with each other using any of these input methods."

Follow Bobble on LinkedIn (<https://www.linkedin.com/company/bobble-app>) for further updates.

## **OPEN INNOVATION**

Open Innovation is the use of internal and other companies' ideas to develop new businesses. It is a co-creative process that requires excellent innovation capability including rich connectivity of people in their roles within the community. Users, all with different knowledge, skills, experiences, roles, points of view and needs, can contribute positively to the innovation process. Ideas do not come when we are bound to think, they come when we are free to think. Open innovation offers the most appropriate platform for creativity. It does not bind the hands of a developer but gives them a wide platform to use their creativity to the fullest and make innovations in already existing ideas.