LIFEHACK
2025

PARTICIPANTS HANDBOOK

NUS COMPUTING CLUB

NUS Students' Computing Club
A Constituent Club of the NUS Students' Union

PARTICIPANT'S HANDBOOK

LIFEHACK 2025

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EVENT TIMELINE

REGISTRATION CLOSES
(6 JUNE)

DAY 1 (16 JUNE)
OPENING CEREMONY
AND ACTIVITIES
VENUE:
10AM - 6PM

DAY 2 (17 JUNE)
HACKING DAY
(ONLINE)

DAY 3 (18 JUNE)
SUBMISSION DAY
(ONLINE)
DEADLINE: 12NOON

DAY 4 (19 JUNE) FINALE
VENUE:
UTOWN AUDI 1
10AM - 4PM

OPENING DAY

9:00 AM — REGISTRATION OPENS

10:00 AM — OPENING CEREMONY
- WELCOME ADDRESS
- NETWORK BINGO
- HACKATHON BRIEF
- LUCKY DRAW
- PROBLEM STATEMENT
- KAHOOT

11:30 AM — LUNCH

12:30 PM — HACKING LOUNGE
- UBS WORKSHOP

4:00 PM — CLOSING CEREMONY
- GEOGUESSER + WIKIPEDIA RACE
- LUCKY DRAW
- CLOSING ADDRESS
- PHOTO TAKING

6:00 PM — DAY ENDS

THEME 1

HEALTH AND WELLBEING

Problem statement 1

Situation

Vaccine wastage is a significant global issue, with the World Health Organization (WHO) estimating that up to 50% of vaccines are wasted annually, primarily due to challenges in maintaining the cold chain and logistics.

Challenge

This problem is exacerbated in underserved areas, where lack of infrastructure leads to delays and reduced vaccine efficacy. Design a system to track the journey of medical supplies in real time, ensuring accountability and minimizing waste. The solution can for example leverage blockchain's tamper-proof records while integrating user-friendly dashboards for stakeholders at all levels of the supply chain. Consider challenges such as limited internet access in underserved regions and scalability for large-scale operations.

THEME 1

HEALTH AND WELLBEING

Problem statement 2

Situation

Fragmented patient data across multiple healthcare providers can lead to misdiagnoses and medical errors, adversely affecting patient outcomes. A 2023 report highlighted that diagnostic errors in the U.S. result in approximately 795,000 serious harms annually.

Challenge

Develop a centralized Electronic Health Record (EHR) system that integrates seamlessly across providers, ensuring data accuracy and security. How would you incorporate real-time updates, user training, and compliance with healthcare regulations like HIPAA?

THEME 1

HEALTH AND WELLBEING

Problem statement 3

Situation

Public health crises like COVID-19 have highlighted the critical role of timely and accurate data in shaping effective policies. However, many regions lack platforms that provide real-time updates on essential metrics like vaccination rates, pollution levels, or emergency response readiness. A case study during the pandemic showed that delayed public health data in India resulted in ineffective policy responses, exacerbating the crisis. During the pandemic, delays in data reporting hindered effective policy responses in various areas.

Challenge

Design a real-time health monitoring system that leverages geographic mapping, mobile alerts, and intuitive dashboards to improve public health outcomes. The solution should ensure data accuracy, inclusivity for underserved populations, and adaptability to a variety of public health metrics. How would you address challenges such as data privacy, misinformation, and maintaining user engagement over time

THEME 2

KNOWLEDGE AND COLLABORATION

Problem statement 1

Situation

Traditional education systems often adopt a one-size-fits-all approach, leaving students who learn differently or at varying speeds behind. According to UNESCO (2023), approximately 260 million students globally fail to achieve minimum proficiency levels due to inflexible educational methodologies.

Challenge

Develop an AI-powered adaptive learning platform capable of dynamically adjusting lesson difficulty, content type, and pacing in real time, based on continuous assessment of each student's progress, learning preferences, and unique needs. Consider integrating multimodal learning (visual, auditory, kinesthetic) and a robust analytics dashboard that allows teachers to monitor student development. How would the system handle diverse educational standards across regions, ensure data privacy, and maintain learner motivation over extended periods?

THEME 2

KNOWLEDGE AND COLLABORATION

Problem statement 2

Situation

The rise of remote education has emphasized the limitations of existing virtual classrooms, including ineffective communication, limited interactive opportunities, and decreased student engagement. A 2023 OECD study highlighted that 42% of educators found existing remote collaboration tools insufficient for interactive learning.

Challenge

Design an integrated platform for real-time collaboration that allows seamless interaction among students and teachers in remote settings. The platform should include features such as live quizzes with instant analytics, interactive whiteboards for brainstorming, peer feedback tools, and video-conferencing integration. Address how the system could manage bandwidth constraints, user accessibility, cybersecurity concerns, and facilitate teacher training to effectively leverage these digital tools.

THEME 2

KNOWLEDGE AND COLLABORATION

Problem statement 3

Situation

Educational institutions frequently overlook accessibility requirements, resulting in exclusion and academic disadvantages for students with disabilities. A recent UNICEF report (2023) revealed that globally, over 50% of schools lack sufficient tools or resources to accommodate students with varying disabilities.

Challenge:

Develop an accessible EdTech solution capable of transforming traditional educational content into formats accessible to students with disabilities. The solution should include features such as real-time transcription services, text-to-speech functionalities, automated sign language interpretation, and compatibility with various assistive devices. Consider addressing integration with existing learning management systems, compliance with accessibility standards (such as WCAG 2.1), and ease-of-use for educators and students.

THEME 3

CONSUMPTION AND ENVIRONMENT

Problem statement 1

Situation

Consumers often unintentionally support unsustainable practices due to a lack of clear information about the environmental impacts of their purchases. A 2023 report by McKinsey indicates that 68% of consumers want to make sustainable choices but lack accessible and reliable information.

Challenge

Design a sustainability shopping companion—a browser extension or mobile application—that provides users real-time information about the environmental sustainability of brands and products as they shop online. The app should offer alternative recommendations, detailed sustainability scores, and easy-to-understand visual indicators of environmental impact. How would the platform ensure the reliability of sustainability data, encourage sustained user engagement, and balance comprehensiveness with simplicity for everyday use?

THEME 3

CONSUMPTION AND ENVIRONMENT

Problem statement 2

Situation

Ethical consumerism is hindered by limited transparency concerning brands' ethical practices, including labor conditions, fair trade adherence, and environmental responsibility. According to Ethical Consumer Magazine (2023), 74% of consumers express frustration over difficulties in accessing credible ethical performance data of companies.

Challenge

Develop an ethical brand awareness tool that aggregates comprehensive data regarding brands' ethical practices. The platform should evaluate criteria such as labor policies, sourcing transparency, carbon footprint, animal welfare, and corporate governance. The tool should include interactive dashboards, personalized notifications based on user preferences, and integration capabilities with popular e-commerce sites. How will you maintain data accuracy, foster consumer trust, and motivate continuous user engagement?

THEME 3

CONSUMPTION AND ENVIRONMENT

Problem statement 3

Situation

Develop an ethical brand awareness tool that aggregates comprehensive data regarding brands' ethical practices. The platform should evaluate criteria such as labor policies, sourcing transparency, carbon footprint, animal welfare, and corporate governance. The tool should include interactive dashboards, personalized notifications based on user preferences, and integration capabilities with popular e-commerce sites. How will you maintain data accuracy, foster consumer trust, and motivate continuous user engagement?

Challenge

Create an AI-driven personalized loyalty app that customizes rewards, promotions, and interactions based on individual user behavior, purchasing patterns, and expressed interests. The system should incorporate predictive analytics to anticipate consumer preferences, seamlessly integrating with both digital and physical retail environments. Address data privacy concerns, mechanisms for gathering user consent, and strategies for maintaining user interest and engagement over the long term.

SUBMISSION

WHAT TO SUBMIT?

All teams are required to submit their projects via Devpost. Devpost will serve as the central platform for uploading your solution, documentation, and demo video.

1. **Project Title** : The name of project
2. **Short Description**(1-2 lines): A quick summary of what your hack does
3. **Project Description**: This section should clearly explain the project in detail. Please include:

- **Chosen Problem Statement**: Which challenge did you choose to tackle?
- **Solution Overview**: What does your project do and how does it solve the problem?
- **Technical Implementation**: Tools, frameworks, libraries, APIs, and hardware used.
- **Development Process** (optional): How your team built the solution, your workflow, any key iterations or pivots.
- **Challenges & Learning Points**(optional):What obstacles did you face and what did you learn?
- **Future Improvements**(optional): How would you improve or scale the project?

SUBMISSION

WHAT TO SUBMIT?

5. **GitHub Repository Link**
   - Provide a public GitHub repository containing your code.
   - Your repo should include:
   - A clear README.md explaining how to use or run your project
   - Proper file structure and documentation
   - Any additional files (e.g., datasets, mockups, build instructions)
6. **Demo Video** (Required)
   - Upload a video (max 10 minutes) demonstrating:
   - What your project does
   - Key features and workflows
   - How it addresses the problem statement
   - A short explanation of how it was built
   - Host your video publically on YouTube and directly upload it to Devpost.
7. **Team Members**
   - Make sure all team members are added to the Devpost submission.
   - Only one member needs to submit, but all contributors must be tagged.

SUBMISSION

WHAT TO SUBMIT?

8. **Other Files**
   - Submit a zip containing proof of local student status like academic letter or student card
   - Any other files not on GitHub that is relevant to the hack
9. **Declaration**
   - Read the Hackathon rules and eligibility criteria and click the checkbox to declare the integrity of your work.

After submission, keep a lookout for the announcement channel or emails for the results. All the best!

JUDGING CRITERIA

Judging Rubrics for Submission (Main Category)	
	Considerations
Technical Implementation (35%)	How effective is the technical approach and implementation of the product or solution
Relevance of ideas (20%)	How well does the product/solution line up with the challenge
Innovation (20%)	Uniqueness and creativeness of the product/solution (Demonstrates these qualities: inspiring, novel, persuasive, fresh, motivating, engaging, etc.)
Usability (15%)	Usability of the solution. How user-friendly is the interface? How difficult was it to utilize the advertised features?
Viability (10%)	Prospective social/commercial value that the solution possesses

JUDGING CRITERIA

Judging Rubrics for Presentation (main category)	
	Considerations
Functionality Presentation (45%)	The effort put into presentation to reflect the functionalities of solution
Coherence (35%)	The ability of the team to relate their prototype and the chosen problem statement, and answer questions regarding their solution.
Clarity (20%)	The clarity and flow of presentation by the team.

JUDGING CRITERIA

Judging Rubrics for Special Category	
Special Category Prize	Qualities to look out for
Most boomer-friendly	Text clearly visible (medium to large font size)Simple and easily understandable phrasingEasy traversal between menusMinimal steps required to utilise main functionTranslation feature is a plusFunctionality is clear
Most Unorthodox hack	Most unique solution across all hacks
Most outstanding undergraduate year 1 hack	Highest score for undergraduate year 1 participantsTeam must consist entirely of year 1 undergraduate students
Most impressive usage of data	Application interacts with some form of data (collection/processing/analysing/manipulating) Data interaction is done in an appropriate and effective manner
Best Community Impact	Given to the team who has the most positive impact on the communityAddresses a significant social issue
Most impressive Pre-U hack	Most impressionable pre-U participant teamTeam must consist entirely of pre-U students

PRIZES

2nd
$2000

1st
$3000

3rd
$1000

Finalists (4th - 10th)
$200 each

Most Boomer-friendly **$ 200**	Most Unorthodox **$ 200**	Best Undergrad Y1 **$ 200**
Most impressive usage of data **$ 200**	Best Community Impact **$ 200**	Most impressive Pre-U **$ 200**

OPENING DAY CHALLENGES

EARN POINTS THROUGH COMMUNITY CHALLENGES

KAHOOT COMMUNITY QUIZ

WIKIPEDIA RACE

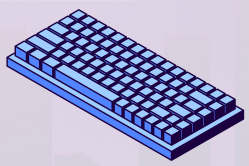
GEOGUESSR

NETWORKING BINGO

stand a chance to win attractive prizes!!!

LUCKY DRAW

STAND A CHANCE TO WIN ATTRACTIVE PRIZES IN OUR LUCKY DRAW

- Sony WH-1000XM5 
- Airpods 4 
- Prism+ Monitor 
- Razer Huntsman V2 Keyboard 
- Anker Zolo PowerBank 
- AirTag 
- XiaoMi Smart Band 9 

TECHNICAL WORKSHOP

UBS

Explore Pair Programming and Test-Driven Development in Python

- Hands-on coding session with UBS software engineers
- Practice test-driven development and build a mini project

Limited to 50 participants only

16.06.2025

1230pm –330pm

CAPT SR1 &SR2

MENTORS

KUSH AMERASINGHE

Venture partner at Aixlerator

Kush Amerasinghe is a two-time Generative AI pioneer who co-founded teams that launched the first visual Gen AI products at both Amazon and Adobe in the United States with experience collaborating with other industry leaders such as Nvidia, Anthropic, StabilityAI, Microsoft, Intel, HP, Sony and Samsung. His global career spans across seven countries in three continents, blending innovation with cultural adaptability. Beyond his numerous US patents in AI and computer graphics, Kush has extended his innovative approach to serving on multiple nonprofit boards including Counter Pulse, an experimental arts theater and Atma Connect, a global community platform. Kush is currently building an Agentic AI-powered impact platform called BrainBank to help tech professionals discover meaningful work while also serving as an advisor for the Aixlerator project in Singapore.

KARTHIK ADINARAYANAN

CEO at Tower Research capital group, Ludisia

Karthik Adinarayanan is a seasoned leader at the intersection of finance and technology, with over 23 years of global experience. He is currently the CEO of a leading high-frequency trading (HFT) firm, where he spearheads low-latency cryptocurrency trading strategies at the cutting edge of digital markets.

Throughout his career, Karthik has led global teams of over 250 professionals, built large-scale trading platforms, and launched new business operations across major financial hubs. His expertise spans quantitative trading platforms, treasury, risk management, and operational infrastructure, developed at some of the world's top hedge funds.

Outside the boardroom, Karthik is a passionate educator and mentor. He has taught professional finance programs, delivered guest lectures at leading universities, and actively coaches both senior executives and emerging entrepreneurs. As an angel investor, he mentors and guides ambitious early-stage ventures shaping the future of finance, crypto, and technology.

RAJ BHARATHI

CEO at KronosX AI Labs, Pte.

Raj Bharathi is the Founder & CEO of KronosX AI, an agentic data execution platform reshaping how regulated enterprises prepare their data for AI adoption. He previously led and exited a food-tech startup, and served as Head of Business Expansion at NFP Health across North America. Raj is passionate about helping the next generation of builders turn bold ideas into reality.

YUE CHEE GUAN

Founder and Trainer at WICKED — Creative and Branding Training

Yue Chee Guan is a veteran in the field of advertising and brand communication, with a career spanning decades across the United States, Europe, and Asia. A firm believer in purpose-driven creativity, he champions solutions that address both commercial and social challenges with insight and heart.

Trained at the renowned ArtCenter College of Design in Pasadena, Chee Guan received one of the world's finest design educations. His global journey has taken him through creative leadership roles in cities like Boston, London, Singapore, Shanghai, and Beijing, where he built and led award-winning teams in multinational agencies such as Ogilvy, Dentsu, Grey, BBDO, Lowe and M&C Saatchi.

Holding a BBA from the National University of Singapore, Chee Guan later founded WICKED, a school for creativity in China dedicated to nurturing a new generation of thinkers and makers. He also teaches and conducts workshops in multiple universities across China, where he guides students to identify real problems, think critically, and craft insightful, imaginative design solutions grounded in human understanding.

SONG GUAN HUA

Founder & CEO at Feasurge New Material

Guanhua Song is the founder and CEO of Feasurge New Material Pte Ltd, a Singapore-based company specializing in plant-based phase change materials (PCMs). With extensive experience in sustainable materials, international trade, and project development, he also serves as Secretary-General of the Singapore Green Development Alliance. He has led several ventures across Asia, including the creation of green PCM products for use in buildings, solar energy, and cold chain logistics. He is committed to driving environmental innovation and energy efficiency through material science, and actively collaborates with research institutions and industry partners to bring cutting-edge thermal solutions to market.

JUDGES

TEO KIM PENG

CSIT
Deputy Director,
Analysis Technologies

STEVEN HALIM

NUS
Associate Professor

DANNY SUYANTO

Singtel
Assoc Director,
Software Engineering

AKSHAY NARAYAN

NUS
Senior Lecturer

FRANCIS LEE

Lalia Private Limited
CTO

ANAND RAMCHAND

NUS
Associate Professor

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