



QUEST
INTERNATIONAL
UNIVERSITY

The cover graphic features a dark teal background with large, overlapping, semi-transparent circles in various shades of green and blue. In the center, there is a faint image of a hand holding a small green seedling. Above the hand, there is a horizontal line of 14 white dots, with two dots above and two dots below each of the seven central dots.

QIU
**SDG STEERING
COMMITTEE REPORT
2019**

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Introduction

Welcome to the first Quest International University (QIU) Sustainability Report 2019. This report charts out the setting up of a Sustainability Development Goals (SDG) committee.

QIU is committed to being a responsible corporate citizen and emphasises the importance in aligning itself to the United Nations' 17 Sustainable Development Goals. The University firmly believes that as a higher educational institution, it is of pivotal importance to integrate sustainability into our academic activities to ensure that our graduates are fully immersed in sustainability practices which they will reinforce in their future professions.

The University hosted Fulbright Specialist Dr. Nancy Landrum for a period of six weeks in June and July 2019. The purpose of the Fulbright visit was to help QIU integrate the United Nations' Sustainable Development Goals (SDGs) into the curriculum by achieving three objectives:

1

Conduct a workshop to train the academic staff on the importance of education for sustainable development.

2

Develop academic and training curricula to achieve goals as described.

3

Set up a Centre for Social Innovation to ensure the sustainability of our programmes, collaboration and networking with similar entities on a global platform.

Framework of QIU SDG Steering Committee

VISION

Fostering sustainable development values, principles and practices in society.

MISSION

To integrate sustainability in education processes.

To implement strategies to drive impactful and sustainable change.

To collaborate with all segments of society to achieve the Sustainable Development Goals.

CORE VALUES

Respect • Integrity • Inclusiveness • Empathy

MOTTO

Quest for Sustainability

Clusters under the QIU SDG Steering Committee

In order to achieve QIU's SDGs, **four clusters** comprising of Education, Research, Operations and Leadership have been set up.



Education

To provide students with the knowledge, skills, and motivation to understand and address the challenges of the SDGs and to empower and mobilise them for action.



Research

To research the causes and craft solutions for the SDGs.



Operations

To align all University Policies, procedures and activities with the SDGs.



Leadership

To create awareness and seek opportunities to engage at a city, state, national and international level as an advocate for SDG.

QI Group Social Impact and Sustainability (SIS) Strategy and Priorities

The QI Group of Companies, of which QIU is part of, are committed towards the SDGs through the formation of the Social Impact and Sustainability (SIS) Committee.

The SIS focuses on 3 main pillars with priorities set in place towards achieving each pillar.











SIS Pillars	SIS Priorities
<p>Empowering People</p>	<ul style="list-style-type: none"> • Building a healthy and sustainable workplace to continuously improve our people's health and well-being. • Fostering a diverse and inclusive workforce culture that enables the participation and contribution of all people.
<p>Transforming Communities</p>	<ul style="list-style-type: none"> • Transforming communities through partnerships in the areas of Education for All, Gender Equality and Sustainable Community Development. • Empowering responsible entrepreneurs to uplift themselves and rise above their limitations.
<p>Safeguarding the Environment</p>	<ul style="list-style-type: none"> • Strengthening our business practices to address how we engage with the environment. • Advocating for a plant-based diet and banning single use plastic items in our events and offices worldwide.

Alignment of the QI Group Social Impact and Sustainability (SIS) Strategy with QIU SDGs

Working as one QI Group of companies, QIU has aligned its four SDG clusters of Education, Research, Operations and Leadership towards achieving the three SIS pillars.

SIS Pillars	QIU
<p>Empowering People</p> <p>Priorities:</p> <ul style="list-style-type: none"> • Building a healthy and sustainable workplace to continuously improve our people's health and well-being. • Fostering a diverse and inclusive workforce culture that enables the participation and contribution of all people. 	<p> Education To provide students with the knowledge, skills, and motivation to understand and address the challenges of the sustainable development goals and to empower and mobilize them for action.</p> <p> Research To research into the causes and craft solutions for the sustainable development goals.</p> <p> Operations To align all University Policies, procedures and activities with the sustainable development goals.</p>
<p>Transforming Communities</p> <p>Priorities:</p> <ul style="list-style-type: none"> • Transforming communities through partnerships in the areas of Education for All, Gender Equality and Sustainable Community Development. • Empowering responsible entrepreneurs to uplift themselves and rise above their limitations. 	<p> Education To provide students with the knowledge, skills, and motivation to understand and address the challenges of the sustainable development goals and to empower and mobilise them for action. To research into the causes and craft solutions for the sustainable development goals. To align all University Policies, procedures and activities with the sustainable development goals.</p> <p> Research To research the causes and craft solutions for the sustainable development goals.</p> <p> Leadership To create awareness and seek opportunities to engage at a city, state, national and international level as an advocate for sustainable development.</p>
<p>Safeguarding the Environment</p> <p>Priorities:</p> <ul style="list-style-type: none"> • Strengthening our business practices to address how we engage with the environment. • Advocating for a plant-based diet and banning single use plastic items in our events and offices worldwide. 	<p> Research To research into the causes and craft solutions for the sustainable development goals.</p> <p> Operations To align all University Policies, procedures and activities with the sustainable development goals.</p>

QIU Activities with that of QI Group Social Impact and Sustainability (SIS) Strategy

SIS Pillars	SDG Steering Committees	Some of the activities carried out at QIU that align with the SIS Pillars
Empowering People	 Education  Research  Operations	<p>Food Bank at Faculty of Medicine; Reduce Food Waste; Sustainable Agri-Research Centre; Excess garden produce sent to social agencies (orphanages and senior citizen homes); Research on emotional/ mental well-being; Research to reduce vector-borne disease; No smoking policy.</p>
Transforming Communities	 Education  Research  Leadership	<p>Students involved in projects on plant propagation and selling; Research on sustainable farming practices; Bioplastics research (waste to biopolymer; EcoBricks)</p>
Transforming Communities	 Education  Research  Operations  Leadership	<p>"Green the Earth - 1MillionTrees" project as part of the MPU Community Service subject; No Straw Campaign; Promote meatless diet; No smoking policy; Green Bonfire beach cleanup; Reduce use of printed documents</p>

Other Activities



Education



Research



Operations



Leadership

1 NO POVERTY



- Poverty discussed in classes.
- Technological knowledge & skills to students.



- Food bank at Faculty of Medicine (FoM).
- Excess garden produce given to social agencies.
- Working with the Orang Asli community.

2 ZERO HUNGER



- Teach students to reduce food waste.
- Students involved in projects on plant propagation & selling.



- Research on sustainable farming practices.
- Research on micropropagation of asparagus.



- Food Bank at FoM.
- Excess garden produce sent to social agencies (orphanages and senior citizen homes).
- Sustainable Agri-Research Centre.
- Soup kitchen to serve the poor.
- Free tea & coffee to staff.
- Train & provide skills to the public.

3 GOOD HEALTH AND WELL-BEING



- Teach food safety, nutrition, food source.
- Teach students the importance of a healthy lifestyle & proper diet.
- Programmes in Medicine
- Programmes in Pharmacy
- Programmes in Psychology



- Research on
- Healthy, wholesome & affordable food.
 - Emotional/mental well-being (stress, burnout, exhaustion, productivity).
 - To reduce vector-borne disease.
 - Encapsulation of natural drug using bioplastic microspheres as a matrix.
 - Bioplastic incorporated with the ethanol extract of medicinal plant.
 - Polyherbal formulation for liver protection/Regeneration (PL).
 - Evaluation of antimicrobial and wound healing properties of bioactive fractions from the extract of *Passiflora sp.* Stem (SV).
 - Evaluation of hepatoprotective activity on polyherbal formulation of *Eclipta alba*, *Phyllanthus amarus* and *Rauwolfia serpentina* (SV).
 - Larvicidal activities of *Areca catechu L.* extracts against *Aedes* (Diptera:Culicidae).
 - Biosynthesis of Azolla-nanosilver insecticides and its modes of action against *Aedes sp.* larvae and adult mosquitoes
 - Solution for malnutrition issues in the Orang Asli community.



Education



Research



Operations



Leadership

3 GOOD HEALTH AND WELL-BEING



Research on

- The biosynthesis of silver nanoparticles using bacteria as an alternative to commercial antibiotic to inhibit antibiotic-resistant bacteria.
- The efficacy of topical ophthalmic preparations containing standardized extract of *Orthosiphon stamineus* (EOS) against retinal neovascularization secondary to diabetic retinopathy.
- A randomized, double-masked, exploratory study to evaluate safety, efficacy, tolerability, pharmacodynamics and pharmacokinetics of orally administered proprietary extract of *Orthosiphon stamineus* (NatureCeuticals Blood Cleanser TM (AUST L 281817)) with a 6 – 12 months follow up period in patients with non-proliferative diabetic retinopathy without center-involved diabetic macular edema.
- Prototype of SStroke rehabilitation A-TeaM (STREAM) toolkit and modules: A collaborative physiotherapy, Malay Massage, medication management.
- Design and in-vitro characterization of personalised dosing by *Pulsatile Duacap*
- Surgical management of tongue cancer with adjuvant oral formulations of *Orthosiphon stamineus*; A clinical case report.
- Design and characterization of formulations containing standardized *Senna alata* leaf extract.
- The characterization and the significance of clinical Isolates of *Burkholderia pseudomallei* in the State of Perak, Malaysia.
- The development of an Integrated Medicine Management System.
- The effect of Traditional Malay Massage together with Pharmacist. Intervention on Substance P, Inflammatory Mediators, Pain Intensity and Functional Outcome among Patients with Low Back Pain: A Pilot Randomized Controlled Trial.
- The development of immunochromatographic strip assay method for therapeutic drug monitoring of vancomycin in human plasma.



- Food bank at FoM
- Organic campus garden
- Promote healthy environment on campus
- Free eye checks
- Annual bonfire to foster campus unity
- Promote vegan diet
- No smoking policy

4 QUALITY EDUCATION



- Continuous dissemination of technological knowledge to students for sustainability.
- Continuous improvement of curriculum & programmes.
- Teaching sustainability & sustainable development.
- Knowledge transfer to students.
- Programmes in education, languages & communications



- Comparative studies on Malaysian & non-Malaysian students



- Continuous improvement of programmes
- Book drive
- Work with the Orang Asli community
- Tuition/scholarships for underprivileged individuals.
- Educating staff about the SDGs & Sustainability.



- Working with the Perak Association for the Intellectually Disabled to improve special needs education and subsequently empower the community.



Education



Research



Operations



Leadership



- Teaching women empowerment in research.
- Teaching impact of female workers in agriculture.
- Teaching awareness of gender equality.



- Women are highly represented throughout all levels at QIU



- Teaching about environmental pollution & solutions.
- Teaching water supply & wastewater treatment subjects.



- Research on photocatalytic fuel cells.



- Minimising visits to washrooms.
- Use of grease traps to prevent food waste entering waterways.
- Providing safe drinking water.



- Teaching renewable energy topics.



- Research on photocatalytic fuel cells.



- Teaching technopreneurship.
- Teaching business principles to students.
- Programmes in Business & Management.



- Research to identify changing skills needed for employment opportunities.
- Research on a new perspective using Artificial Bees Colony Algorithm.



- Providing decent jobs and living wages.



Education



Research



Operations



Leadership

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



- Continuous improvement of programmes to meet technological demands.
- Importance of Industry 4.0 & its impact to change life style.
- Ensuring curriculum is relevant to current issues.
- Programmes in Business & Management.
- Programmes in Science & Technology.



- Bioplastics research (waste to biopolymer; EcoBricks)
- FYP projects using solar panels.
- Research on sustainable eco-friendly plastic sand bricks.
- Research on a new method based on deep learning for predictive maintenance of high voltage induction motor in equatorial climate zones.



- Life cycle costing for efficient operations

10 REDUCED INEQUALITIES



- Teaching women empowerment in research
- Teaching impact of female workers in agriculture
- Students from different backgrounds are integrated into other groups for student work



- Increasing diversity of young & new graduate lecturers.
- Work with the Orang Asli community.
- Work with the refugee community.



- Working with the Perak Association for the Intellectually Disabled to improve special needs education and subsequently empower the community.

11 SUSTAINABLE CITIES AND COMMUNITIES



- Final year projects for community improvement.
- Advanced digital inclusion to provide access to education & information.



- Sustainable tourism research.



- Employee CSR activities in community (clean up, school painting, etc.)
- Car pooling.
- New green campus is in development.
- Plan to become an EcoCampus.



Education



Research



Operations



Leadership

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- Producing high-quality graduates.



- Research on plastic degrading bacteria/biodegradation.
- Research at the garden on optimal growing methods.
- EcoBricks research
- Comparative studies on Malaysian & non-Malaysian students.
- Life cycle analysis for environmental impacts of industrial plants.
- Research on waste



- No straw campaign
- No polystyrene
- Reduced plastic use
- Organic garden
- Reusable containers for food
- Reduced food waste
- Reuse of materials for packaging.
- Reduce need to print on paper for record-keeping.
- Water conservation
- Improve solar panel for future energy
- Energy conservation (turn off lights, use LED lights, reduce air conditioner use)
- Use of shared ride/e-hailing services
- Campus recycling
- Donation of excess produce

13 CLIMATE ACTION



- Climate change & air pollution discussed in classes.



- Research on abiotic stress on crop performance.
- Bioremediation research
- Staff motivation to research recycling, waste reduction & the environment.
- Research land impacts of climate change
- Phytoremediation research.
- Study on the role of WRKY transcription factor in response to abiotic stress.
- Research on the effect of anti sigma factor knockout using CRISPR-Cas9 in *Ralstonia Picketti*.



- Carpooling
- Support for on- & off-campus eco-campaigns
- Green Bonfire beach cleanup
- No straw campaign
- Turn off air-conditioning & lights when not in use
- Grow plants at home
- Reduce use of printed documents.
- Recycling & bins throughout campus.
- EcoRangers
- New green campus in development.
- EcoCampus certification



Education



Research



Operations



Leadership



- World Cleanup Day



- Sustainable tourism research at marine park.
- Research on detection and identification of the types of microplastics in freshwater.



- Chemical waste is not discarded from labs into sinks.
- Recycle plastic
- Research & life prediction analysis on maintenance of oil & gas piping.
- River clean-up
- No straw campaign
- No polystyrene
- Reduced plastic use
- Organic garden
- Reusable containers for food.
- Reduced food waste.
- Reuse of materials for packaging.



- Teaching environmental ecology
- "Green the Earth – 1Million Trees" project as part of MPU Community Service subject.



- Sustainable tourism research
- Research on sustainable farming practices.
- Research on desertification.
- Research on bioremediation.
- Sustainable Tourism Seminar.
- Research on characterisation of PGPR related to *Leucaena leucocephala* (petai belalang).
- Research on effects of Tridax procumbers on the growth, hematological and histopathological parameters of Tilapia (*Oreochromis niloticus*) (SV).
- Research on enhanced phyto-evaluation of Vetiver grass (*Vetiveria zizanioides* (Linn.) Nash in highly contaminated As-Cr metals soil conditions in Malaysia.



- No straw campaign.
- No polystyrene
- Reduced plastic use.
- Organic garden/no pesticides.
- Reusable containers for food & drink.
- Reduced food waste.
- Reuse of materials for packaging.
- World Cleanup Day
- No meat on campus.



Education



Research



Operations



Leadership

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



- Teaching Engineers in Society.
- Media & Society



- Organize motivational activities to promote diversity of culture.
- Share ideas on how to generate peace among diverse people & religions.
- Encouraging students to participate in elections.



- QIU hosted a talk on "Constitution and Governance" by Yang Berhormat Dr Abdul Aziz Bari, Perak state exco member for Education, Science, Environment, Green Technology and Information.

17 PARTNERSHIPS FOR THE GOALS



- Work with IT companies for student development



- Work with IT companies for programme development



- Partner with others for community cleanups.
- MOU with partner companies
- Partnership with orphanages and senior citizen homes to receive excess produce
- Partnering with private solar company to build solar panel system for gardens.
- Partnerships with farmers for gardens.
- MOUs for social engagement



- Signatory to the SDG Accord - the SDG Accord is a commitment to support the UN SDGs and embed them into our education, research, operations and leadership activities.

Planned Activities for 2020



Education Cluster:

- 8th Feb 2020- Thaipusam Food and Beverages Charity event: Food will be served using Biodegradable Lunch Box (a staff and student initiative).
- From the July 2020 intake, all Diploma and Undergraduate students will be required to take the Sustainable Development course as part of their MPU subject. Elements in the course will emphasise the SDGs and the implementation of the goals in actual events.



Research Cluster:

- Drafting the QIU SDG Policy.
- Campus Sustainability Conference 2020 co-organised with Adamson University, Manila
- Sustainable Tourism Conference 2021 co-organised by Universiti Malaysia Sabah / Fukushima University / QIU



Operations Cluster:

- Effective utilisation of resources - Establishing baseline, compiling data on consumption of utilities and consumables, (eg: energy reduction, paper reduction, automation of processes).
- Setup a committee for implementation of sustainable practices at work place.
- Establishment of SOPs for identified processes as per Quality Standards. In progress of compiling the list of SOPs for key business practices.



Leadership Cluster

- SDex'20 (Sustainable Development Exhibition, 2020) - Provide a platform for all SDG projects by individuals / teams to be heard by the various stakeholders. Raise awareness of the 17 SDGs.
- Sustainability Forum 2020 - A frank discussion on sustainability initiatives. Sharing of what is being done by each stakeholder category. How individual efforts can be merged to create a more synergised, holistic effort.

The Committee will also be participating in the Times Higher Education Impact Ranking 2020, an initiative to recognise universities across the world for their social and economic impact, based on the United Nations' Sustainable Development Goals.

Pictures

23rd September
2019

Green the Earth - 1 million Trees
Phase 1 : Sungai Sayong, Kuala Kangsar (250 Trees)



6th October
2019

Green the Earth - 1 million Trees
Phase 2 : along Sungai Kinta river bank, Lahat (100 Trees)







QUEST
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SUSTAINABLE
DEVELOPMENT
GOALS



Plastic Recycling

What The Letters Really Mean



1 PET
Polyethylene Terephthalate



• Bottles • Jars • Cups • Trays •



2 HDPE
High Density Polyethylene



• Detergent Bottles • Shampoo Bottles • Milk Bottles • Ice Cream Boxes •



4 LDPE
Low Density Polyethylene



• Squeeze Bottles • Cling Wrap • Rubbish Bags • Shopping Bags •



5 PP
Polypropylene



• Microwave Trays • Plasticware • Plastic Straws •



Appendix

List of on-going research projects in QIU



- **Dr. Rajiv Ravi**

Research Title :

- Superfood Spirulina
Solution for malnutrition community for Orang Asli

Research Area :

Nutritional Properties



- **Dr. Hema (Project Leader)**

Research Title :

- Encapsulation of natural drug using bioplastic microspheres as a matrix
- Bioplastic incorporated with the ethanol extract of medicinal plant

Research Area :

Biopolymer and Drug Delivery

- **Dr. Ashok**

Research Title :

- Polyherbal formulation for liver protection / Regeneration (PL)

Research Area :

Biomedical Science Application

Research Title :

- Evaluation of antimicrobial and wound healing properties of bioactive fractions from the extract of *Passiflora sp.* stem (SV)
- Evaluation of hepatoprotective activity on a polyherbal formulation of *Eclipta alba*, *Phyllanthus amarus* and *Rauwolfia serpentina* (SV)

Research Area :

Herbal Medicine

- **Dr. Rajiv Ravi**

Research Title :

- Larvicidal activities of *Areca catechu L.* extracts against *Aedes* (Diptera:Culicidae)
- Biosynthesis of Azolla-nanosilver insecticides and its modes of action against *Aedes sp.* larvae and adult mosquitoes

Research Area :

Medical Entomology

Research Title :

- Superfood Spirulina
Solution for malnutrition community for Orang Asli

Research Area :

Nutritional Properties



• **Dr. Hema (Project Leader)**

Research Title :

- Study on the biosynthesis of silver nanoparticles using bacteria as an alternative to commercial antibiotic to
- inhibit antibiotic-resistant bacteria

Research Area :

Microbiology and Biomedical

• **Prof. Dr. Aman**

Research Title :

- The efficacy of topical ophthalmic preparations containing standardized extract of *Orthosiphon stamineus* (EOS) against retinal neovascularization secondary to diabetic retinopathy (SV)

Research Area :

Neuropharmacology

Research Title :

- Medicine advertising: international survey and content analysis (SV)

Research Area :

Clinical Studies

Research Title :

- A Randomized, double-masked, exploratory study to evaluate safety, efficacy, tolerability, pharmacodynamics and pharmacokinetics of orally administered proprietary extract of *Orthosiphon stamineus* (NatureCeuticals Blood Cleanser TM (AUST L 281817)) with a 6 – 12 months follow up period in patients with non-proliferative diabetic retinopathy without center-involved diabetic macular edema (PL)

Research Area :

Clinical Research

Research Title :

- Prototype of STroke rehabilitation A-Team (STREAM) toolkit and modules: A collaborative physiotherapy, Malay Massage, medication management (PL)

Research Area :

Healthcare and Medicine

• **Dr. Mahibub (Supervisor)**

Research Title :

- Design and in-vitro characterization of personalised dosing by *Pulsatile Duacap*
- Surgical management of tongue cancer with adjuvant oral formulations of *Orthosiphon stamineus*; A clinical case report

Research Area :

Pharmaceutical Science

Research Title :

- Design and characterization of formulations containing standardized *Senna alata* leaf extract

Research Area :

Pharmaceutical Formulation Research and Development



- **Prof. Vijayalakshmi (Supervisor)**

Research Title :

- Characterization and the Significance of Clinical Isolates of *Burkholderia pseudomallei* in the State of Perak, Malaysia

Research Area :

Medical Microbiology

- **Datuk Allan (Supervisor)**

Research Title :

- Development of an Integrated Medicine Management System

Research Area :

Health Informatics

Research Title :

- Effect of Traditional Malay Massage together with Pharmacist Intervention on Substance P, Inflammatory Mediators, Pain Intensity and Functional Outcome among Patients with Low Back Pain: A Pilot Randomized Controlled Trial

Research Area :

Pharmacy Practice

- **Dr. Vijay Kotra (Supervisor)**

Research Title :

- Development of immunochromatographic strip assay method for therapeutic drug monitoring of vancomycin in human plasma

Research Area :

Pharmaceutical Chemistry



- **Dr. Nik Athirah (Project Leader)**

Research Title :

- Detection and identification of the types of microplastic in freshwater

Research Area :

Environmental Technology



- **Dr. Paran (Project Leader)**

Research Title :

- Sustainable eco-friendly plastic sand bricks

Research Area :

Environmental Technology

- **Dr. Nik Athirah (Project Leader)**

Research Title :

- Detection and identification of the types of microplastic in freshwater

Research Area :

Environmental Technology



- **Dr. Nurul Rawaida (Project Leader)**

Research Title :

- A new method based on deep learning for predictive maintenance of high voltage induction motor in equatorial climate zone

Research Area :

Technology and Engineering, Mechanical & Manufacturing

- **Dr Goh Khang Wen (Project Leader)**

Research Title :

- New Perspective Using Artificial Bees Colony Algorithm

Research Area :

Social Sciences & Business (Finance)



- **Dr. Rajiv Ravi (Supervisor)**

Research Title :

- Effects of *Tridax procumbens* on the growth, hematological and histopathological parameters of *Tilapia (Oreochromis niloticus)* (SV)

Research Area :

Aquaculture



- **Dr. Wendy Liu (Project Leader)**

Research Title :

- Characterisation of PGPR related to *Leucaena leucocephala* (*petai belalang*)

Research Area :

Agriculture

- **Dr. Kamariah (Supervisor)**

Research Title :

- Study the role of WRKY transcription factor in response to abiotic stress

Research Area :

Plant Molecular Biology

Research Title :

- The Effect of Anti Sigma Factor knockout using CRISPR-Cas9 in *Ralstonia Picketti*

Research Area :

Molecular Biology

- **Dr. Ranjetta (Project Leader)**

Research Title :

- Micropropagation of asparagus

Research Area :

Plant Tissue Culture

- **Dr. Chuck (Project Leader)**

Research Title :

- Enhanced phyto-evaluation of Vetiver grass (*Vetiveria zizanioides* (Linn.) Nash in highly contaminated As-Cr metals soil conditions in Malaysia

Research Area :

Technology and Engineering (Green Technology)



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