



Ballerina
Swan Lake

Collaborative Learning Initiatives : WSO2/Ballerina and Universities



H1 2024

About WSO2

- Founded in 2005, WSO2 was initially an open source middleware company.
- Today, we offer a suite of Integration, API management, and IAM technologies, available as open source or SaaS, enabling enterprises to create digital experiences quickly, easily, and securely.

API Management

Deliver your business as APIs in any deployment environment.

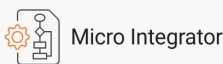


API Platform for k8s

Integration

New Programming Language for integration and Digital PaaS

Ballerina
Swan Lake



Identity and Access Management

Modern IAM solution for your on-premises or cloud environment.



Solutions

Pre-built APIs, Integrations, IDevPs, CIAM capabilities, and on-premises/SaaS solutions

WSO2
Open Banking

WSO2
Open Healthcare

About Ballerina

Flexible, Powerful, Beautiful Integrations as Code with Ballerina

- ✓ Open source, cloud-native programming language optimized for integration
- ✓ Batteries included: Rich ecosystem of network protocols, data formats, and connectors
- ✓ Edit/view source code textually or graphically as sequence diagrams and flowcharts
- ✓ Built-in, easy and efficient concurrency with sequence diagrams and safety primitives
- ✓ Developed by [WSO2](#) since 2016 and first released in February 2022



Goals of the Program



For Students and the University:

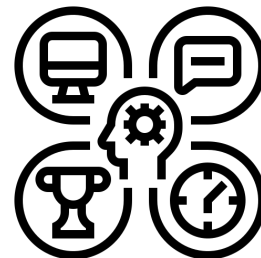
- We envision offering comprehensive learning experiences that equip students with industry-relevant skills.
- These skills, in turn, will prove invaluable in their academic projects, industrial internships, and eventual professional endeavors.

For Ballerina/WSO2:

- The cornerstone of our endeavor is to leverage the Ballerina programming language as a central teaching tool during these programs.
- We aim to raise awareness and understanding of the language among university students, thereby nurturing a future generation of developers with cutting-edge expertise to help the growth of the Ballerina community.

Some Initiatives

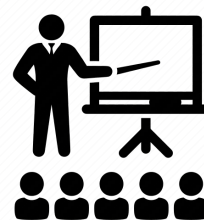
- Guest Lectures and Talks
- Workshops and Training Sessions
- Hackathons and Coding Challenges
- Research Collaborations
- Open Source Projects
- Industry Projects



Guest Lectures and Talks

- **Objective:** Provide students with valuable insights into contemporary industry practices.
- **Approach:** Can be part of non-credit modules, a guest lecture or student technical community group events.
- **Content:** Engaging sessions focused on vital topics such as
 - a. easy data persistence with databases
 - b. integration protocols
 - c. data oriented programming
 - d. microservices and cloud-native application development
 - e. application security

Content can be based on use cases related to projects of students too.



Workshops and Training Sessions

- **Objective:** Empower students with practical skills and in-depth knowledge in cutting-edge technologies used in the industry.
- **Content:** Engaging sessions on interesting topics, utilizing Ballerina to demonstrate concepts.
- **Culmination:** The series concludes with a mini hackathon for students to apply their learnings with cash prizes and swag for participants.



Hackathons and Coding Challenges

- **Objective:** Enhance the creativity, innovation, and teamwork while exploring new technologies and solving real-world problems
- **Content:** Engaging sessions on interesting topics, utilizing Ballerina to demonstrate concepts followed by a coding challenge/hackathon.
- **Culmination:** The series concludes with cash prizes and swag for participants.



Research Collaboration

- **Objective:** Students get the opportunity to explore innovative uses of technology and work on impactful projects.
- **Scope:** Research ideas will be in various domains with Ballerina utilized for the implementation of the solution.
- **Learning Outcome:** Students get to enhance their research skills and contribute to technological advancement using Ballerina.
- **Approach:** Joint supervision for the research projects with required guidance for implementing the solution.



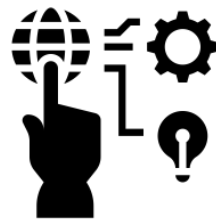
Open Source Projects

- **Objective:** Students get the opportunity to contribute to open-source projects. This can be an excellent way for students to gain practical experience in community-driven development.
- **Scope:** Projects can range from small to complex with Ballerina utilized for writing the code.
- **Learning Outcome:** Students get to experience community-driven development, and collaborate with developers worldwide while using Ballerina.
- **Approach:** Collaborating with students to provide mentorship and required project guidance.



Industry Projects

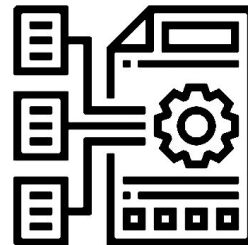
- **Objectives:** Provide students with opportunities to solve real-world problems which will equip them with skills relevant to industrial practices.
- **Scope:** Projects can range from small to complex projects focused on digital transformation.
- **Learning Outcome:** Students gain practical experience in real-world, enterprise-grade application development while using Ballerina.
- **Approach:** Collaborating with lecturers and students to provide mentorship and required project guidance.



More Initiatives...

Compiler Design Sessions

- **Objective:** Deep dive into compiler design theories. Will help the subjects like Compiler Theory in the curriculum.
- **Content:** 1-2 sessions dedicated to compiler design concepts and their practical implementation in Ballerina.
- **Importance:** Enhances understanding of language design principles and provides hands-on experience.



Ballerina in Teaching

- **Potential:** Exploring the use of Ballerina as a teaching language for appropriate subjects.
- **Approach:** Collaboration with lecturers to integrate Ballerina into curriculum, requiring a moderate learning curve.
- **Benefits:** Exposing students to a modern programming language.



Collaborations

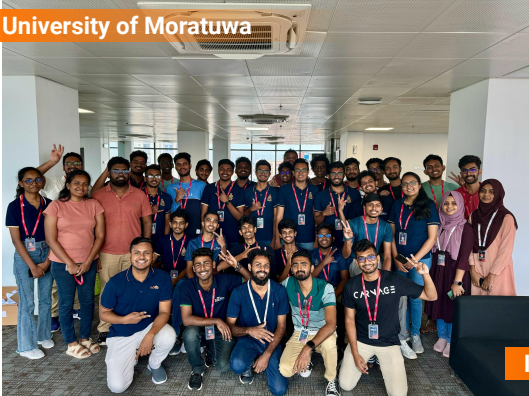
- The University of Texas at Dallas, USA
- Sikkim Manipal Institute of Technology, India
- Bennett University, India
- KR Mangalam University, India
- KIET Group of Institutions, India
- MAIT Delhi Campus, India
- Manav Rachna International Institute of Research & Studies, India
- Namibia University of Science and Technology, Namibia
- Informatics Institute of Technology, Sri Lanka
- University of Moratuwa, Sri Lanka
- University of Peradeniya, Sri Lanka
- University of Colombo, Sri Lanka



Collaborations

Manav Rachna International Institute of Research & Studies

University of Moratuwa



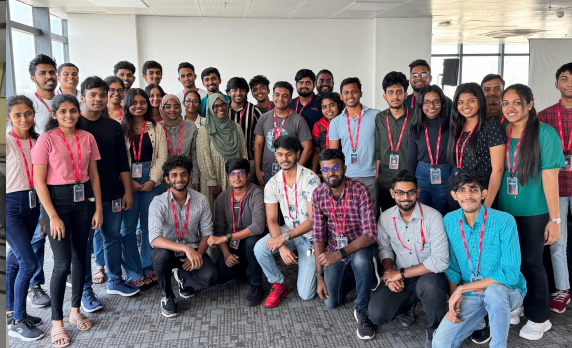
Bennett University



Informatics Institute of Technology

University of Peradeniya

Sikkim Manipal Institute of Technology



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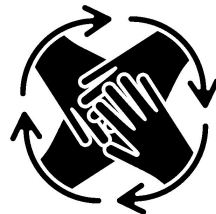
Google

GPS Map Camera

How to get involved

- **University Coordination:** Coordinate with university course coordinators to schedule sessions and involve lecturers.
- **Participation:** Encourage students to attend sessions, contribute to projects, and join the mini hackathon.
- **Support:** Ballerina experts available to assist with sessions, conduct hackathons, help with projects and answer questions.

Email to : contact@ballerina.io



Thanks!



wso2.com

