CHARLES DARWIN UNIVERSITY AUSTRALIA | [IT] CODE FAIR

IT Industry Projects

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IT INDUSTRY PROJECT OVERVIEW

CDU IT Code Fair team are looking for an opportunity to collaborate with partners and industry, especially in the NT, to develop innovative and practical solutions to real-world challenges in order for our students and teaching team to support and make a difference in our community.

By partnering with us, you are providing our young IT professionals with the ability to apply knowledge and skills learnt during their studies to solve problems in the local context. Students will be under our academic supervision to develop solutions that will be suitable for you and your businesses.

INDUSTRY PROJECT

A project which provides an opportunity for students to work, either individually or as part of a small team, on a real project for an industry or community client. Projects can be completed on campus but delivered on a project brief developed in collaboration with the client.

The final project proposal, agreed upon by team members and academic supervisor, and clients, should include:

- clear educational objectives;
- anticipated research question(s), tasks, and products;
- clearly defined interdisciplinary components;
- a description of each team member's previous experience or preparation as required to complete their tasks in the work plan; and
- anticipated timeline to complete project and deliverables.

There is no minimum time requirement for clients to interact with the student team, rather it is up to the client and team to define this as part of their work plan for the project. There is no cost to the clients for proposing the project.

Intellectual property (IP)

In general, students own any IP created (unless otherwise agreed between partner organisation and student).

PROJECT CLIENT(S)

Clients are the people (or organization/business unit/department, etc.) for whom the project is being undertaken. Whether it is an internal company project or an external project, every project has a client or a customer who has a business need that will be satisfied by the successful completion of the project.

While the term client generically refers to one or more people from the client's organization, specific large projects also have a dedicated client Project Manager as a comparable Project Manager to work on the client side.

CLIENT'S ROLES

During a project, the client's role is crucial to the overall success. The clients play an active role in the following tasks but not limited to:

·approving project proposals,
·requesting changes,
·raising issues and risks,
·approving milestones, and
·accepting (or declining) the final deliverables of the project

Successful clients are:

Fully engaged and committed to working with the team for their project. Constructive feedback. The client may provide ongoing communication and draft reviews according to the project work plan.

Supportive of the educational goals of the project. The team and client may discuss expectations regarding feedback versus supervision when defining the project scope and work plan.

Responsive to student questions. Students are likely to select a project based on their career or research interests. Anticipate fielding student questions about your career path or areas of expertise.

Consistent in providing a single point of contact for the team and timely in response to team members. Providing a single point of contact for the team advances communication and leads to a quicker execution of ideas.

STUDENT'S ROLES

1. Gather and organize relevant data required for the project. Ensure data quality, accuracy, and integrity throughout the process.

2. Collaborate with the team to identify and define the business problem or challenge to be addressed. Brainstorm potential solutions and contribute creative ideas to develop innovative strategies.

3. Contribute to developing a project plan, including setting goals, defining deliverables, and creating a timeline. Take responsibility for completing assigned tasks within the agreed-upon deadlines.

4. Document project progress, findings, and outcomes in a clear and organized manner. Prepare reports, presentations, or other deliverables as required by the project plan.

5. Engage with the business client or stakeholders to understand their needs, gather feedback, and ensure alignment between project goals and client expectations. Provide updates and seek clarification when necessary.

ACADEMIC SUPERVISOR'S ROLES

- Providing students with any relevant preparatory and Occupational Health and Safety information
- Monitoring of students and liaising with partner organisations during the project
- Ensuring any discipline specific tasks have been satisfied or completed.

EXAMPLES OF PROJECTS

Software Development Deliverables

1	Develop or enhance the website for a local business. Create a professional and user-friendly website that showcases the business's products, services, and contact information. Implement features such as online booking, e-commerce functionality, or customer feedback forms to improve the business's online presence.
2	Build a mobile application for a local business to reach and engage with customers on their smartphones. The app could offer features such as loyalty programs, push notifications for special offers, or easy appointment scheduling.
3	Identify repetitive tasks within a business's operations and automate them using software tools or custom-built scripts. This can help streamline processes, save time, and improve efficiency. For example, develop a system to automate inventory management or create a billing and invoicing software solution.
4	Test and ensure the quality of software systems developed by local businesses. Conduct thorough testing, identify and report bugs or issues, and provide suggestions for improvement to enhance the reliability and performance of the software.
5	Help local businesses set up their IT infrastructure, including network configuration, hardware setup, and software installations. Provide ongoing technical support to troubleshoot issues, ensure system security, and maintain smooth operations.
6	Contribute to open-source software projects that can benefit local businesses. Engage in collaborative development, bug fixes, or feature enhancements for software tools that are widely used by businesses in the community.
7	Offer expertise and insights to local businesses as a technology consultant. Provide guidance on technology adoption, software selection, or digital transformation strategies to help businesses leverage technology effectively for growth and innovation.
8	Help identify and fix software bugs or issues in applications developed by local businesses. Debug code, resolve errors, and ensure smooth functionality.

EXAMPLES OF PROJECTS

Information Systems & Data Science Deliverables

1	Analyse customer purchasing data for an e-commerce business to identify patterns and trends. Visualize the findings using charts and graphs to showcase which products are frequently bought together, allowing the company to create targeted product bundles and cross-selling strategies.
2	Build a machine learning model for a telecommunications company to predict customer churn. Utilise historical customer data, including usage patterns, demographics, and customer service interactions, to develop a model that can forecast which customers are most likely to churn in the future.
3	Analyse a manufacturing company's production data to identify areas of inefficiency. Use optimizstion algorithms to optimizs the production schedule, minimizing downtime and maximizing resource utilization. Audit and provide a business process reengineering to enhance efficiency and continuous improvement
4	Conduct an in-depth analysis of a retail company's sales data across different regions and demographics. Identify customer segments with the highest profitability and recommend tailored marketing strategies for each segment.
5	Collaborate with the finance department of a healthcare organisation to develop a machine learning model for fraud detection in insurance claims.
6	Create new features from existing data variables to improve model performance. This may involve transforming variables, encoding categorical variables, or creating interaction terms.
7	Visualise and analyse data using Python’s pyplot and MS Power BI to generate the analytic reports to help business users in efficient decision making.
8	Create visually appealing and informative charts and graphs to present data insights. This could involve plotting histograms, line charts, bar charts, or scatter plots to highlight patterns or trends.
9	Craft a compelling narrative around a dataset and present it to a non-technical audience. Communicate the key insights and implications of the data analysis in a clear and understandable manner.

EXAMPLES OF PROJECTS

Cyber Security Deliverables

1	Review and analyse the business's existing security policies and procedures. Identify any gaps or areas for improvement and provide recommendations for enhancing security measures.
2	Support the business in keeping their systems up to date by assisting with patch management processes. Help ensure that critical security updates are applied in a timely manner to mitigate vulnerabilities
3	Conduct vulnerability assessments to identify weaknesses and potential entry points in the business's network infrastructure, systems, and applications. This helps the organization proactively address security gaps before they can be exploited by attackers.
4	Develop and deliver security awareness training programs to educate employees about cybersecurity best practices, such as recognizing phishing emails, creating strong passwords, and protecting sensitive information. This helps create a culture of security within the organization and reduces the risk of human error.
5	Assist in conducting security audits and compliance assessments to ensure that the organization meets industry standards and regulatory requirements. Help identify any non-compliance issues and recommend remedial actions to ensure the business remains in good standing.
6	Set up network monitoring tools and intrusion detection systems to detect and respond to suspicious activities and potential security breaches. Analyze network logs and alerts, investigate anomalies, and take appropriate actions to mitigate risks.
7	Assist in analyzing network traffic logs and identifying any suspicious activities or anomalies. Help investigate potential security incidents and provide insights to enhance network security measures.
8	Research and evaluate various security tools and technologies that can enhance the organization's security infrastructure. Help with the implementation and configuration of these tools, such as firewalls, antivirus software, and intrusion prevention systems, to strengthen the organization's defenses.

ABOUT IT CODE FAIR

Founded in 2014, the Charles Darwin University IT Code Fair is a forum for students to share their knowledge and apply IT skills and creativity to solve real-world problems.

The CDU IT Code Fair aims to foster and establish relationships between students, industry, local government and community, encouraging students, especially female and indigenous students to showcase their IT talent more broadly to the university and industry partners.

Vision

Become Australia's most respected student showcase, benefiting IT students, local businesses, industry, government and the larger community.

Mission

Empower CDU IT students to enhance their skills, showcase their talent, find meaningful employment and foster relationships between industry, local government, students and the community.

Contact us

T: +61 889466885

M: +61 426275378

E: itproject@cdu.edu.au

W: http://www.itcodefair.cdu.edu.au

@cduitcodefair