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Week 4 Workshop

COS10025 – Technology in an Indigenous context project

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Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne’s Australian campuses are located in Melbourne’s east and outer-east, and pay our respect to their Elders past, present and emerging.

We are honoured to recognise our connection to Wurundjeri Country, history, culture, and spirituality through these locations, and strive to ensure that we operate in a manner that respects and honours the Elders and Ancestors of these lands.

We also respectfully acknowledge Swinburne’s Aboriginal and Torres Strait Islander staff, students, alumni, partners and visitors.

We also acknowledge and respect the Traditional Owners of lands across Australia, their Elders, Ancestors, cultures, and heritage, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

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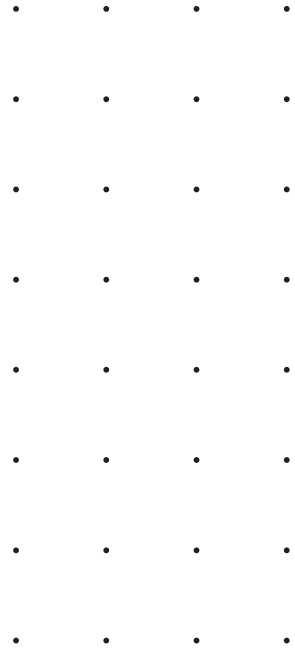


Workshop 4

The aim of today's workshop is to choose a Township and define a problem

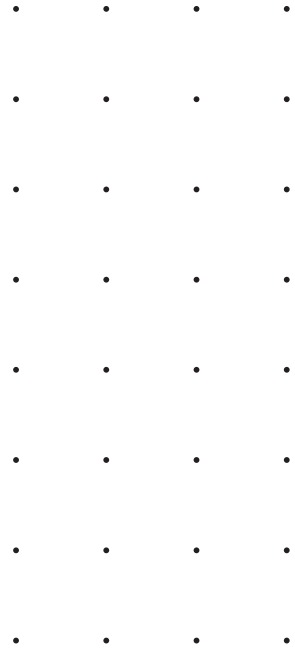
Activity 1: Finalise a Township and an un-resolved problem in a community

Activity 2: Problem statement and project requirements



List of Technologies /devices (In-scope)

- Solar water purification/ filtration
- 5G technologies – LORA WAN, WAN, LAN devices
- Internet of Things devices (health care, agriculture, emergency services, energy generation/monitoring)
- Smart sensors, Bio-degradable sensors
- Electronic components such as super capacitors (store large amount of energy), RFID
- Drought sensor irrigation system
- Gravity powered energy, Sand batteries
- Fossil fuel electricity generator

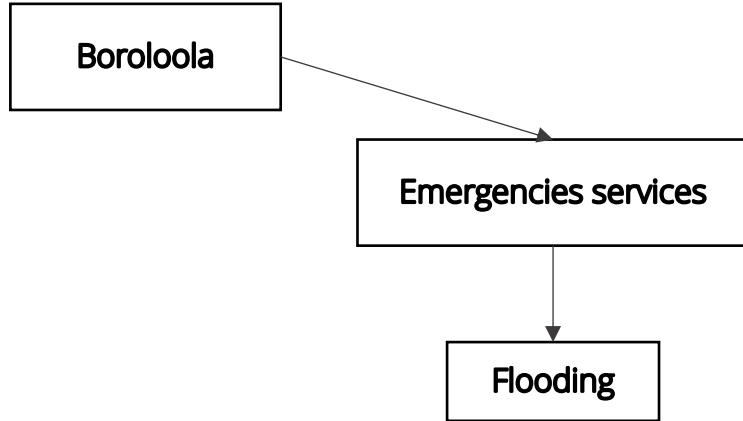


List of Technologies /devices (not in-scope)

- Block chain
- Quantum computing
- Edge computing
- Biometric
- Neuromorphic computing
- Natural language processing
- Genomics
- Self-driving cars
- Injection moulding
- Cultured meat
- Satellites (massive budget)
- Wind turbine (massive budget)
- Synthetic data

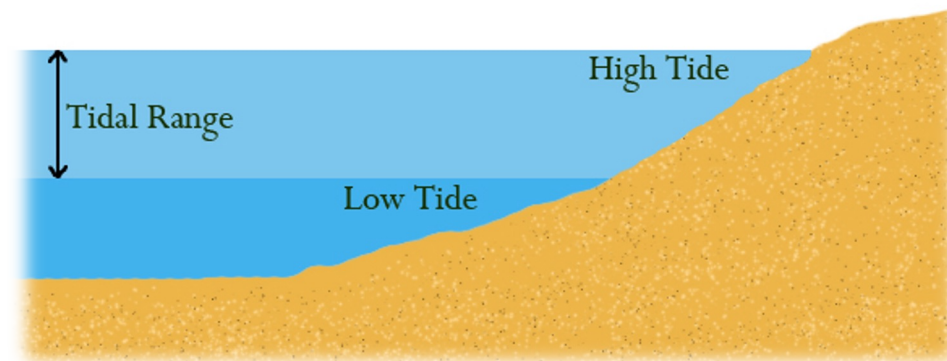


An unresolved problem (An example)



Problem: Water level (flooding)

Riverine flooding can affect thousands of square kilometres for weeks or even months at a time



1st Activity

Aim : Finalise a Township and an un-resolved problem in a community

- Instructions :
1. With your list of 5 townships, your team must finalise a township with your facilitator based on the following
 - An Indigenous Township (remote)
 - The problem should be in-scope only (water supply, energy generation/distribution, health, and safety, climate change, natural disaster)
 - Show appropriate research evidence to support and prove that problem is a challenge to the local community
 - Show available references to confirm the un-resolved problem in a township



Teamwork: 25 – 40 minutes

Problem descriptions

- There are many different ways of developing problem statements
- Critical first step in successful problem solving
- Solution independent
- Requires doing background research first!

Example #1*

- Problem – define problem in one sentence
- Background - evidence to describe context of the problem
- Relevance - why the problem matters
- Objectives – what will be done to find a solution

Number of employees: 8,179 (2022)
Revenue: 2.8 billion USD (2022)

The screenshot shows the Atlassian Team Playbook interface for 'Problem Framing'. The header includes the Atlassian logo and navigation links: 'Team Playbook', 'Plays', 'Why Team Playbook', and 'Ways of Working at Atlassian'. The main title is 'Problem Framing'. Below it, a paragraph explains: 'Problem framing is a problem-solving method that's designed to align the entire team with one solution for a project by structuring the issue's details in a digestible and collaborative way. So, when your team can't agree on a solution, use this play to take a step back and align on the problem you are solving for.' To the right is an illustration of three people (two women and one man) standing around a large whiteboard, looking at a diagram with a triangle and lines. Above the whiteboard are four red question marks. At the bottom left is a yellow button that says 'Jump to instructions'. To the right of the button are three icons with text: a pencil icon for 'PREP TIME 5 MINS', a clock icon for 'RUN TIME 30 MINS', and a group of people icon for 'PEOPLE 3-10'.

*<https://in.indeed.com/career-advice/career-development/problem-statement>

Problem descriptions

Example #2*

1. Context
2. Issue
3. Relevance
4. Objective

"After exercising, the human body is depleted of hydration and electrolytes from sweating. **(Context)**

The person then needs to decide how best to rehydrate the body and replenish the lost electrolytes. (Issue)

Not all beverages are equally beneficial after exercise. The coach must decide what drink to offer volleyball players during a game or practice. **(Relevance)**

In this experiment, we will investigate the electrolyte content found in standard sports drink compared to what is found in plain coconut water. **(Objective)**



*<https://examples.yourdictionary.com/problem-statement-examples.html>

Problem descriptions

Example #3*

1. Need
2. Success criteria
3. Constraints

“The Facilities group at Swinburne need an app for their shared bike scheme to replace a manual process. **(Need)**

This should increase takeup of the program as well as decrease numbers of lost or faulty bikes. **(Success criteria)**

It needs to be maintainable by the group with limited development skill.” **(Constraints)**



2nd Activity

Aim : Problem statement and project requirements

Instructions :

1. As a Team, define what is your problem statement (look at the examples above)?
2. Define the project requirements (check the canvas module) based on your current challenge.
3. What does a design idea mean to you and your team?



Teamwork: 20-25 minutes

Next week

- Finalising problem statement and project requirements
- Explore on Team Assessment 1 Innovation concept report