



National Workshop 2



LEAVING CERTIFICATE
COMPUTER SCIENCE

Session 2: ALT4 Embedded Systems II

Learning Outcomes / Intentions

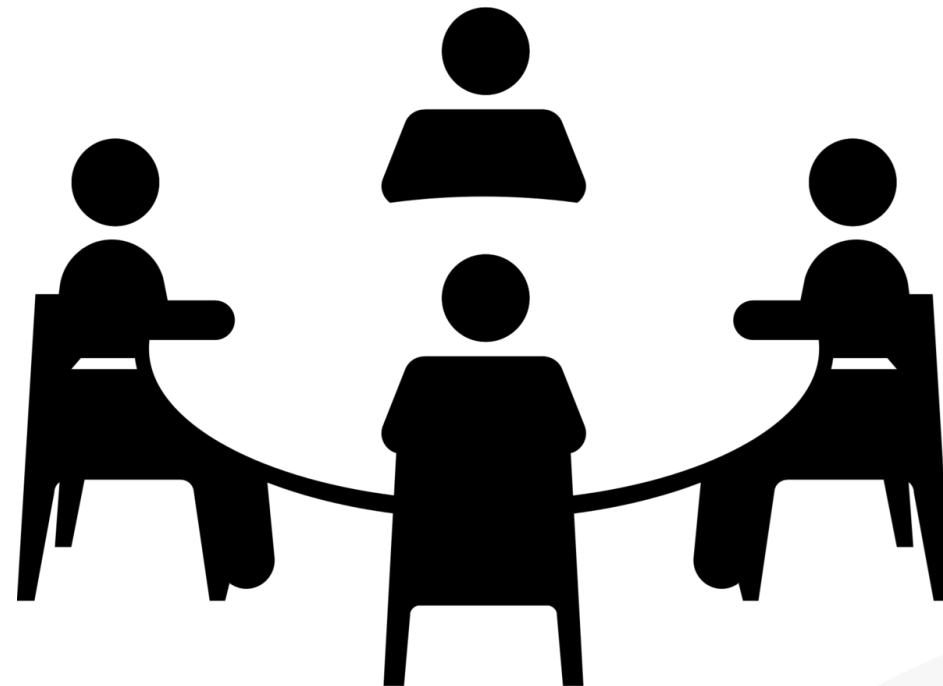
Outcomes:

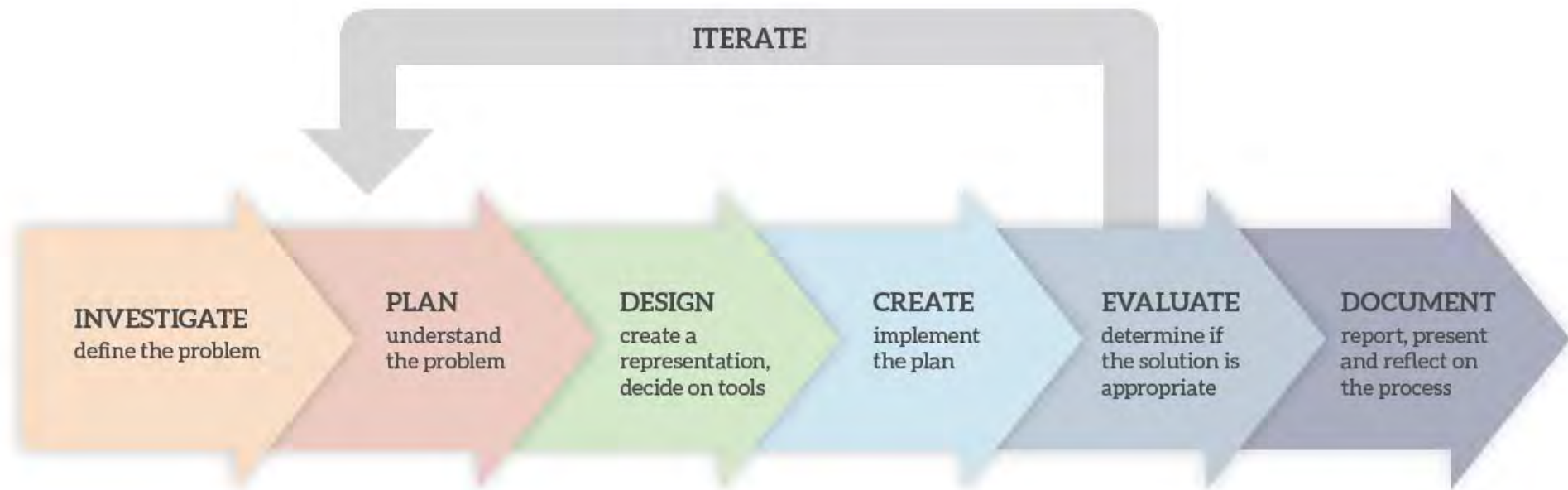
- To experience and apply stages in planning a computer project.
- To appreciate the value of each of the stages.
- To experience the value of group work, analysing benefits and issues.

Intentions:

- To design solutions for group computer projects using the different stages of the design process.

Main Group Activity





2

PLAN
understand
the problem

**Pick one of the suggestions from
the Padlet board or one of your new ideas.**

Dissect the idea

Is there a broad theme or a specific topic?

Who is the audience?

What teaching & learning strategies could you use?

What does your project do?

Does your project idea cover all the LOs for this ALT?

What other LOs can be taught through the lens of this project?

What tools or materials are needed?

What are the roles in the group?

What research or upskilling do you need to do ?

Any moral or ethical considerations?

Plan Prompts

Choose an idea and develop it into a set of requirements

Why did you select this idea?

Who is your target audience?

Are there any moral/ethical considerations?

What problem will this system address/solve? What are the system objectives?

What are the system requirements? What will the system do/not do?

How will I know the system does what I want it to do?

Timeline

Output: Problem statement and specification of system functionality.

Plan / Design docs

NW2 Day 2 Thursday Links to Group Plan / Design docs

Group 1: https://docs.google.com/document/d/1Vb_RV2F-wIPkrT16VFpC8EtL257fDqwSi4WwXrl-pAQ/edit?usp=sharing

Group 2: <https://docs.google.com/document/d/1vCodYPobG2klxB6tnlovkhZcB88LirtiBVKzejaam9o/edit?usp=sharing>

Group 3: https://docs.google.com/document/d/1LZTYq5BwPPyvEhSDaOPRqBvOg5uKIBFS0eS_vbEl6Xw/edit?usp=sharing

Group 4: <https://docs.google.com/document/d/1EJb0Z8bA5TI-u6k6ETVN9F-qvt8m2Q2DiYS9i6yyJlQ/edit?usp=sharing>

Group 5: https://docs.google.com/document/d/17CCMLHUMqIY6Y71GGH14SyB-xtOzN-cMOCfDh_AL7O4/edit?usp=sharing

Group 6: <https://docs.google.com/document/d/15vnv2Q2wJ5m7k0eqjnGjbnfrkqxSlKf2Xhicl35nvl8/edit?usp=sharing>

Group 7: https://docs.google.com/document/d/14eiP4hveGOp2pJ91HiEdF1M_FBkl1yw1WPtWqPzYftM/edit?usp=sharing

Group 8: <https://docs.google.com/document/d/1AEIYeF1R0Zq8kE4cdK4XRIBRcW9dygj-9nn4vlBRJwo/edit?usp=sharing>



Phase 1 Experience - ALT Reporting

1. A Rationale for the Approach to the Brief (Research/Response)

- Evidence of research, brainstorming, evaluation of ideas, proposal
- Projected features, typical end users

2. The Artefact in Operation (5 minute video)

- Overview, features & operation, photos

3. Design and Development of the Artefact (Iterative design process/Computational thinking/Development of the Artefact)

- Iterative design process, flowcharts, data, testing, team roles*

4. Evaluation of the artefact (Reflection on meeting the brief/Future development)

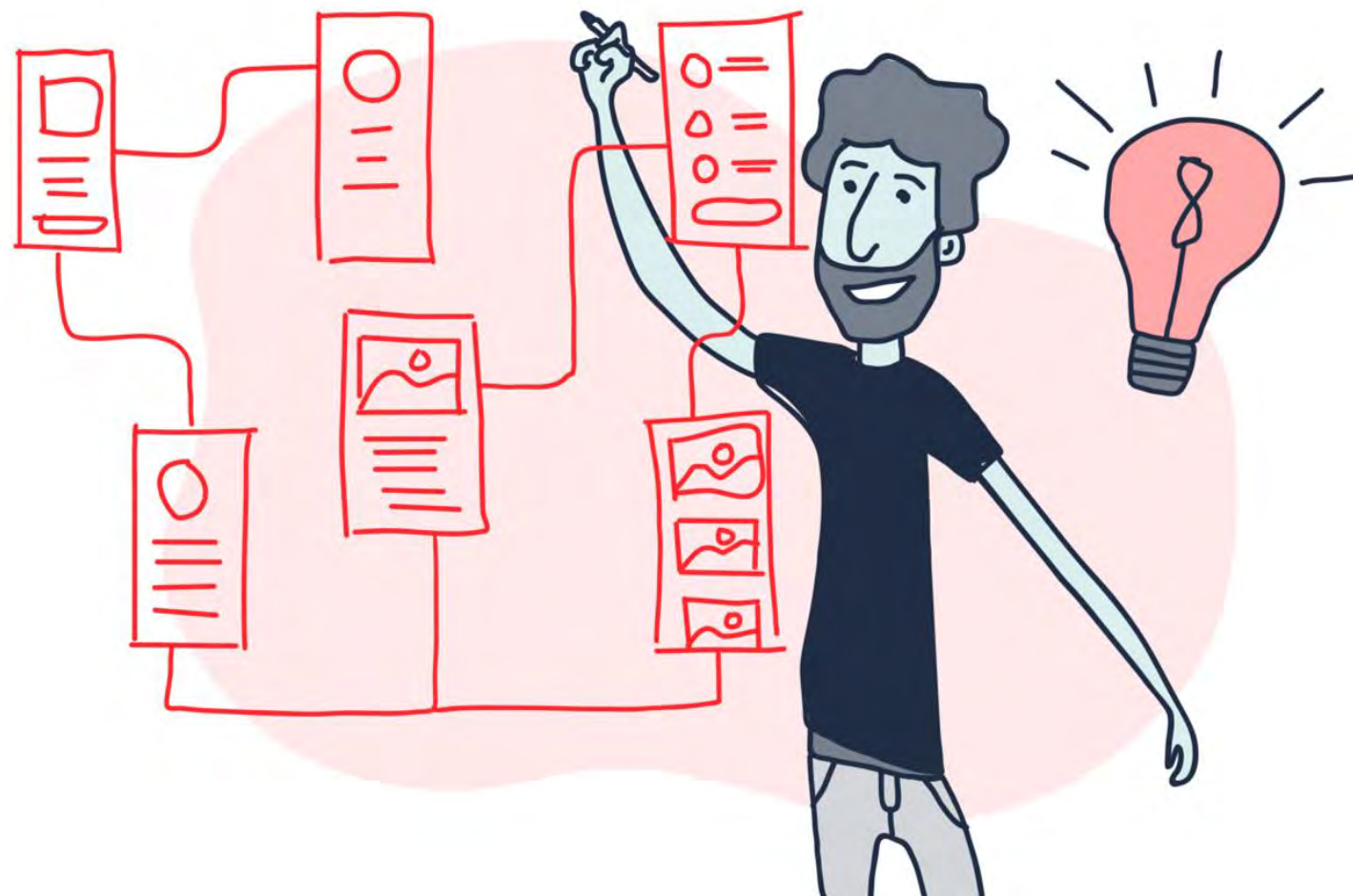
- What worked/didn't work, biggest challenge(s), changes/improvements/other uses

...

3

DESIGN

create a
representation,
decide on tools



<https://blog.overflow.io/8-tips-for-creating-better-user-flows-e46eb0d2a2c6>

Design Prompts

- Going from WHAT to HOW...
 - CT skills – abstraction, decomposition etc.
 - How do the various sub-systems relate to one another?
 - How will each part of the system gather any necessary data? User interface. Data flow.
 - Data storage: variables, files, database etc. What about datatypes?
- Specification of algorithms e.g. pseudo-code, flow charts

Output: Technical schematic of system (Enough information for a programmer to take and be able to complete the ‘Create’ stage of the design process.)

Use of tools: MS Visio / Flowgorithm / Word – Shapes / edraw / draw.io

*Not expected to get finished!
- some groups might though!*

Design docs

Each group will use the same doc here as for the Design phase:

Group 1:

https://docs.google.com/document/d/1daur0DvbdNIMd4fkJQzmgCdpbuid1mkBPQx_LmHAiuA/edit?usp=sharing

Group 2:

https://docs.google.com/document/d/1xPIyL2T2_V6TVIqSlglqVV7hCxOHiyuOg-4NKtZQSPA/edit?usp=sharing

Group 3:

<https://docs.google.com/document/d/1dkwtak13znG5qGqL5q6DpGCYakA1fVXmyX-zn5PTBIM/edit?usp=sharing>

Group 4:

<https://docs.google.com/document/d/1Etg47NRpfZJM6ULwzqn4xw-4YyhYD6wnxGkbIUH8P4I/edit?usp=sharing>

Group 5:

<https://docs.google.com/document/d/1D6HBs7sfbdecD9M3V4uvqzedCpS7oTl3V5nIleuUt3g/edit?usp=sharing>

Group 6:

https://docs.google.com/document/d/1CMFxlkqZpxP-vC11X_FWxWZ4KCzKcFW3ypWUsfHs3AM/edit?usp=sharing

Group 7:

<https://docs.google.com/document/d/1C57cxuXPVJvr5FiAV3PVMupNYWblwyBc2MMT9E6uxFE/edit?usp=sharing>

Presentation and Debrief



Roles & Group Dynamics

Problems

Design Process

Technology

Content / LOs

Theme & Audience

End Product (design)





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