



Digital Solutions 2025 v1.3

IA1: Sample assessment instrument

This sample has been compiled by the QCAA to assist and support teachers in planning and developing assessment instruments for individual school settings.

Student name	sample only
Student number	sample only
Teacher	sample only
Issued	sample only
Due date	sample only

Marking summary

Criterion	Marks allocated	Provisional marks
Comprehending	5	
Analysing	7	
Synthesising	6	
Generating	5	
Communicating	2	
Overall	25	

Conditions

Technique	Technical proposal
Unit	Unit 3: Digital innovation
Topic/s	Topic 1: Interactions between users, data and digital systems Topic 2: Real-world problems and solution requirements Topic 3: Innovative digital solutions
Duration	Approximately 15 hours of class time
Mode / length	Multimodal presentation: up to 10 minutes, including annotations of up to 2000 words
Individual / group	Individual
Other	Students can develop their responses in class time and their own time.

Context

High school students are invited to present a technical proposal at an awards dinner for an open data and computer association symposium. The technical proposals are for a new, innovative digital solution that solves a real-world problem and benefits Queenslanders.

Task

You will apply the problem-solving process to develop a technical proposal for the awards dinner. You will explore personal, social and economic needs that apply to senior citizens to identify a real-world problem to solve. You will analyse relevant datasets from the Queensland open data portal and select one for your technical proposal. Your proposal will outline an innovative mobile application that uses open government data to address the real-world needs or wants of senior citizens. Possible focus areas may include:

- addressing social isolation or community engagement
- supporting health, wellbeing, or aged care services.

To complete this task, you must:

- recognise and describe
 - user-interface components
 - existing solutions to similar problems
- symbolise ideas for user interfaces using one or more constructed sketches, annotated diagrams, images or screenshots
- explain
 - interrelationships between proposed data structures and user experiences
 - useability considerations
- analyse the problem to identify
 - scope of the problem
 - constraints and limitations
 - possible personal, social and economic impacts
 - possible solutions
 - data, programming and user-interface relationships
- analyse information to determine
 - user experience requirements from the user perspective
 - programming requirements from the developer perspective
 - required data
 - success criteria
- synthesise information and ideas to develop the possible solutions for
 - data of the proposed solution
 - algorithmic components
- generate a low-fidelity (non-coded) prototype solution that demonstrates the proposed relationship between data and user interfaces
- communicate information and ideas to inform a technical audience.

Stimulus

- Australian Government Department of Health. (n.d.). *Physical activity and exercise guidelines for all Australians: For older Australians 65 years and over*.
<https://www.health.gov.au/topics/physical-activity-and-exercise/physical-activity-and-exercise-guidelines-for-all-australians/for-older-australians-65-years-and-over>
- Brisbane City Council. (n.d.). *Brisbane City Council events*.
https://data.brisbane.qld.gov.au/explore/dataset/brisbane-city-council-events/information/?disjunctive.event_type&disjunctive.agerange&disjunctive.cost&disjunctive.location&disjunctive.activitytype&disjunctive.bookingsrequired
- Queensland Government. (n.d.). *Cardholders*.
<https://www.data.qld.gov.au/dataset/cardholders-department-of-communities-child-safety-and-disability-services>
- Queensland Government. (n.d.). *Government concessions and rebates for seniors*.
<https://www.data.qld.gov.au/dataset/government-concessions-and-rebates-for-seniors>

Checkpoints

- ☐ Term 1 Week 3: Submit identified real-world problem, analysis of data and exploration of existing solutions to similar problems for consultation.
- ☐ Term 1 Week 7: Submit draft response in video format with a script for spoken features for feedback.
- ☐ Term 1 Week 10: Submit final response in video format.

Authentication strategies

- You will be provided class time for task completion.
- Your teacher will conduct interviews or consultations as you develop the response.
- You must acknowledge all sources.

Scaffolding

Ensure your proposal includes:

- a clear problem statement identifying a real-world need or want relevant to senior citizens
- a user story that defines the intended audience and their needs
- an analysis of existing solutions, relevant datasets, and identified constraints
- a data story explaining how the selected open dataset will be used to meet the identified need
- success criteria that evaluate the personal, social, and economic impacts of the solution, and the suitability and feasibility of the proposed solution
- a conceptual model demonstrating the key components and structure of the proposed solution (e.g. diagrams or annotated visuals)
- a low-fidelity, non-coded prototype that showcases the relationship between data and user interface
- accurate referencing of all data sources.

Your presentation must be recorded and be suitable for the computer association symposium attendants. Visual features should be supported by annotations including labels, bullet-point lists, captions or side notes, for example.

Instrument-specific marking guide (IA1): Technical proposal response (25%)

Comprehending	Marks
The student response has the following characteristics:	
<ul style="list-style-type: none"> discerning recognition and description of <ul style="list-style-type: none"> user-interface components existing solutions adept symbolisation of <ul style="list-style-type: none"> user interfaces discerning explanation of <ul style="list-style-type: none"> interrelationships between proposed data structures and user experiences useability considerations 	4–5
<ul style="list-style-type: none"> adequate recognition and description of <ul style="list-style-type: none"> user-interface components existing solutions competent symbolisation of <ul style="list-style-type: none"> user interfaces adequate explanation of <ul style="list-style-type: none"> interrelationships between proposed data structures and user experiences useability considerations 	2–3
<ul style="list-style-type: none"> makes statements about features of <ul style="list-style-type: none"> user-interface components existing solutions incomplete symbolisation of <ul style="list-style-type: none"> user-interfaces superficial explanation of <ul style="list-style-type: none"> interrelationships useability. 	1
The student response does not match any of the descriptors above.	0

Analysing	Marks
The student response has the following characteristics:	
<ul style="list-style-type: none"> insightful analysis of the problem and contextual information to identify features and relationships of <ul style="list-style-type: none"> data programming user-interface astute determination of <ul style="list-style-type: none"> programming requirements user-experience requirements success criteria 	6–7
<ul style="list-style-type: none"> adequate analysis of the problem and contextual information to identify features and relationships of <ul style="list-style-type: none"> data programming user interface reasonable determination of <ul style="list-style-type: none"> programming requirements user-experience requirements success criteria 	4–5
<ul style="list-style-type: none"> superficial analysis of the problem or information to identify some features or relationships of <ul style="list-style-type: none"> data programming user-interface vague determination of <ul style="list-style-type: none"> programming or user-experience requirements success criteria. 	2–3
<ul style="list-style-type: none"> unclear analysis of the problem or information to identify features or relationships of components. 	1
The student response does not match any of the descriptors above.	0

Synthesising	Marks
The student response has the following characteristics:	
<ul style="list-style-type: none"> logical synthesis of information and ideas to develop the possible solutions for <ul style="list-style-type: none"> – user interfaces – algorithms – data 	5–6
<ul style="list-style-type: none"> adequate synthesis of information and ideas to develop the possible solutions for <ul style="list-style-type: none"> – user interfaces – algorithms – data 	3–4
<ul style="list-style-type: none"> simple synthesis of information or ideas to develop the possible solutions for <ul style="list-style-type: none"> – user interfaces – algorithms – data. 	1–2
The student response does not match any of the descriptors above.	0

Generating	Marks
The student response has the following characteristics:	
<ul style="list-style-type: none"> effective generation of a non-coded low-fidelity prototype digital solution that demonstrates the proposed relationship between <ul style="list-style-type: none"> – data – user interfaces 	4–5
<ul style="list-style-type: none"> adequate generation of a non-coded low-fidelity prototype digital solution that demonstrates the proposed relationship between <ul style="list-style-type: none"> – data – user interfaces 	2–3
<ul style="list-style-type: none"> generation of elements of the non-coded low-fidelity prototype digital solution that demonstrates the proposed relationship between some <ul style="list-style-type: none"> – data – user interfaces. 	1
The student response does not match any of the descriptors above.	0

Communicating	Marks
The student response has the following characteristics:	
<ul style="list-style-type: none"> • effective decision-making about, and fluent use of <ul style="list-style-type: none"> – visual, spoken and/or written features to communicate about a solution – language for a technical audience – grammatically accurate language structures – referencing conventions 	2
<ul style="list-style-type: none"> • simple decision-making about, and inconsistent use of <ul style="list-style-type: none"> – visual, spoken and/or written features – suitable language – grammar and language structures – referencing conventions. 	1
The student response does not match any of the descriptors above.	0



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