# Instrument-specific marking guide

Criterion: Retrieving and comprehending

### Assessment objectives

1. recognise and describe data sources, programming elements, user-interface components and useability principles

2. symbolise algorithms and user interfaces, and explain ideas and interrelationships between proposed data structures and user experiences of the identified problem

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| **The student work has the following characteristics:** | **Marks** |
| * accurate and discriminating **recognition** (identify, recall, or acknowledge) and discerning **description** (account of the characteristics or features) of:   + data sources,   + programming elements,   + user-interface components **AND**   + useability principles * adept **symbolisation** (representation by symbols – think visual meaning) of:   + algorithms **AND**   + user interfaces   **AND**  discerning **explanation** (provide additional information) of *ideas* **AND** *interrelationships* between:   * + proposed data structures **AND**   + user experiences of the identified problem. | 4-5 |
| * appropriate recognition and description of data sources, programming elements, user-interface components and useability principles * competent symbolisation of algorithms or user interfaces and appropriate explanation of ideas and interrelationships between proposed data structures and user experiences of the identified problem. | 2-3 |
| * makes statements about elements and features of data, programming, user interface or useability principles * variable symbolisation of algorithms and superficial explanation of aspects of ideas or interrelationships related to the identified problem. | 1 |
| * does not satisfy any of the descriptors above. | 0 |

Criterion: Analysing

### Assessment objectives

3. analyse the problem and information related to the selected technology context

4. determine programming and user-experience requirements of the identified problem and prescribed and self-determined criteria

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| **The student work has the following characteristics:** | **Marks** |
| * insightful **analysis** (dissect, break down or examine constituent parts) of the problem **AND** relevant contextual (circumstantial) information to **identify** the relevant *elements* **AND** *features* of:   + user interface,   + data **AND**   + programming components   **AND**   * + their relationships to the structure of the identified problem * astute **determination** (decide, conclude or ascertain after consideration) of:   + programming **AND**   + user-experience requirements   of the identified problem **AND**   * + essential prescribed and self-determined criteria. | 5-6 |
| * appropriate analysis of the problem and contextual information to identify some elements and features of user interface, data and programming components and their relationships to the structure of the identified problem * reasonable determination of programming and user-experience requirements of the identified problem and some prescribed and self-determined criteria. | 3-4 |
| * superficial analysis of the problem or aspects of information to identify some elements or features of user interface or data or programming components or their relationships to the structure of the identified problem * vague determination of some programming or user-experience requirements of the identified problem or prescribed criteria. | 1-2 |
| * does not satisfy any of the descriptors above. | 0 |

Criterion: Synthesising and evaluating

### Assessment objectives

5. synthesise information and ideas to determine possible data elements, user interface and algorithm components for digital solutions

6. generate a technical proposal for user interfaces and algorithm components of the low-fidelity non-coded prototype digital solution

7. evaluate impacts, components and a low-fidelity prototype against prescribed and self-determined criteria to make refinements and justified recommendations

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| **The student work has the following characteristics:** | **Marks** |
| * coherent and logical **synthesis** (combine different parts into a whole, to create new understanding) of relevant information and ideas to **determine**:   + data elements,   + user interface **AND**   + algorithm components for digital solutions * purposeful **generation** (production) of a technical proposal for:   + relevant user interfaces **AND**   + algorithm components of the low-fidelity non-coded prototype digital solution * critical evaluation (appraise or make judgments) of:   + impacts,   + components **AND**   + low-fidelity prototypes   **AGAINST**   * + effective prescribed and self-determined criteria to make:     - refinements and     - astute recommendations   **justified by data.** | 5-6 |
| * simple synthesis of information and ideas to determine possible data elements, user interface and algorithm components for digital solutions * adequate generation of a technical proposal for some user interfaces and algorithm components of the low-fidelity non-coded prototype digital solution * feasible evaluation of impacts, components and low-fidelity prototypes against some prescribed and self-determined criteria to make refinements and fundamental recommendations justified by data. | 3-4 |
| * rudimentary synthesis of information or ideas to determine possible data elements, user interface and algorithm components for digital solutions * generation of elements of the low-fidelity non-coded prototype digital solution * superficial evaluation of impacts, components or low-fidelity prototype against criteria. | 1-2 |
| * does not satisfy any of the descriptors above. | 0 |

Criterion: Communicating

### Assessment objectives

8. make decisions about and use mode-appropriate features, language and conventions for written and spoken communication for a technical audience

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| **The student work has the following characteristics:** | **Marks** |
| * discerning decision-making about, and fluent use of:   + written, visual and/or spoken features to communicate about a solution   + language for a technical audience   + grammatically accurate language structures   + referencing **AND** investigation conventions (meaning the assessment technique conventions – in this case, a Technical Proposal – see below). | 2-3 |
| * variable decision-making about, and inconsistent use of   + written, visual and/or spoken features   + suitable language   + grammar and language structures   + referencing or investigation conventions. | 1 |
| * does not satisfy any of the descriptors above. | 0 |

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| **TECHNICAL PROPOSAL**:  a multimodal presentation to communicate the strengths, limitations, implications, and technical specifications and feasibility of a proposed digital solution; may be for a live or virtual audience  **OR**  a document that lists and defines the technical specifications of a contract or project, includes three sections, identification — a brief statement which identifies the real-world related need for developing the digital solution and relevant background information, interactions — specifies information relating to interactions between humans and or the environment, and information systems, this may include proto-personas, and component specifications — specifications relating to data, user interface/experience and code. |