T Level Technical Qualification in Digital Production, Design and Development

Mark Scheme (Results)

June 2022

Occupational Specialism

T Level Technical Qualification in Digital: Digital Production, Design and Development
Sample Assessment Material Mark Scheme
Pre-publication draft – April 2020

Task 1 Activity A (ii) – The Proposal

Indicative content and marker guidance
Students produce a proposal for a digital solution that **they** could develop to meet the needs of **GibJohn Tutoring**.

Students' proposals should be relevant to key requirements of the brief:
- interactive teaching and learning resources
- encouraging wider learning
- supporting assessment and monitoring
- collaborative teaching and learning tools
- accessibility features to support a wide range of users
- a learning reward system
- gamified learning.

The Students' proposals may refer to:
- How the solution will handle data and pass it between back end and front end
- How they will address issues/needs such as:
  - Booking/managing tutoring appointments
  - Storing and using data to provide and enable customisable revision plans
  - Supporting and providing Digital content teaching and learning across different platforms/devices (e.g.
  - Collaborative teaching and learning tools- whiteboards
- Different learning strategies
- Digital content (e.g. audio, video, text, AR)
- Gamified Learning
- Accessibility features (e.g. alt text, resizable fonts, selectable color schemes) – Possible reference to W3C
- 'Social issues' – e.g., integration with APIs for social media sites, developing a website that utilises a back-end database and 'forum', etc.

Students' proposals should refer to relevant **risks** and how they will **mitigate** these such as:
- Malicious/inappropriate use – data input validation
- Intercepting data / man in the middle attacks – use of SSL/Encryption/HTTPS.
- Cross site scripting – content security policy/data input validation and sanitization.
- SQL Injection – Sanitising data input.

Students' rationale should refer to wider issues which are likely to include:
- General issues such as:
  - Privacy
  - User support
  - feedback to users-errors (e.g. incorrect completion of forms, completion of transaction etc)

- Potential context-specific issues such as:
  - handling of personal data
  - users likely be under 18
  - copyright/intellectual property relating teaching and learning materials, videos etc.
  - ensuring materials are at the appropriate level for each user
- Relevant regulations and guidelines (e.g. W3C, professional bodies) as well as legal requirements relating to software development and the industrial context.

Students' rationale should be relevant to current practice and/or emerging tech in the **education sector** such as:
- Apps and mobile devices
- Video/remote instruction
- Use of AR/VR

Students rationale should include details of the functional and non-functional requirements, key performance indicators, user acceptance criteria that could be used to judge the success of a solution that **they** will implement. They must be appropriate for a solution that will meet the needs of **GibJohn Tutoring.**

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P Pearson

Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	1-3	4-6	7-9
Decomposing the problem	No rewardable material	The proposal: • identifies **some** of the problems to be solved • Effectively decomposes **some** of the problems identified The proposed solution would effectively: • meet **some** of the needs of the client and users • mitigating **some** of the potential risks • addressing **some** of the relevant regulatory guidelines and legal requirements, in relation to software development and the industry.	The proposal: ▢ Identifies **most** of the problems to be solved ▢ Effectively decomposes **most** of the problems identified The proposed solution would effectively: ▢ meet **most** of the needs of the client and users ▢ mitigate **most** of the potential risks ▢ address **most** of the relevant regulatory guidelines and legal requirements, in relation to software development and the industry.	The proposal: • Fully identifies the problems to be solved • Effectively decomposes the problems identified The proposed solution would effectively: • meet the full needs of the client and users • **m**itigate the potential risks • address relevant regulatory guidelines and legal requirements, in relation to software development and the industry.

		1-3	4-6	7-9
Appreciation of wider issues in the context		The proposal provides **limited** lines of reasoning that **partially** justify how: • the recommended solution meets the needs of the client and users • potential risks will be mitigated • the proposed solution will address relevant regulatory guidelines and legal requirements, in relation to software development and the industry.	The proposal provides **good** lines of reasoning that **mostly** justify how: • the recommended solution meets the needs of the client and users • potential risks will be mitigated • the proposed solution will address relevant regulatory guidelines and legal requirements, in relation to software development and the industry.	The proposal provides **comprehensive** lines of reasoning that **fully** justify how the: • the recommended solution meets the needs of the client and users • potential risks will be mitigated • the proposed solution will address relevant regulatory guidelines and legal requirements, in relation to software development and the industry.
		1-2	3-4	5-6
Appreciation of the business context		The proposal provides **basic** definitions of: • functional and non-functional requirements • key performance indicators • user acceptance criteria	The proposal provides **good** definitions of: • functional and non-functional requirements • key performance indicators • user acceptance criteria	The proposal provides comprehensive and perceptive definitions of: • functional and non-functional requirements • key performance indicators • user acceptance criteria

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Task 1 Activity B – The Design – The Visual/Interface Design

Indicative content and marker guidance

The design should provide details of the solution that is to be implemented by the Student. The designs should be usable by third party to implement the intended solution.
- layout and white space may include:
  - clear 'zones' which allow user to focus on specific content
  - Space between lines to aid readability.
  - related information is close together but do not encroach on each other
  - sensible breaks/separation of information to avoid overload
  - details of reactive layouts to suit different screens/devices (e.g. mobile and desktop version)
- visual hierarchies may include:
  - Sensible and appropriate use of sizing if information/items to help optimize user information
  - Order of design elements (e.g. orders in navbars and menus) to signify significance or 'route' through information
- common conventions include:
  - Include details of common design features which may include (but not limited to):
    - Common/recognizable icons (e.g. house = home)
    - Placement of navigation item (top or left)
    - Use of 'hamburger' button/collapsible menus for mobile layout.

General 'good' design features to consider:
- Clear branding for GibJohn Tutoring
- Aesthetic and minimalist design
- Help and documentation
- Feedback- give good error messages, actions need reactions- things to consider error prevention, auto detection of errors, clear error notification and possible hints solving problems
- Use of imagery and other media to aid accessibility and understanding.
- Avoiding inclusion of information which is irrelevant or rarely needed.

Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	1-2	3-4	5-6
Effectiveness of the design interface	No rewardable material	The proposed design interface is **adequate** as a result of **reasonably effective** use of: ● layout and white space ● visual hierarchies ● common conventions.	The proposed design interface is **good** as a result of **the effective** use of: ● layout and white space ● visual hierarchies ● common conventions.	The proposed design interface is **excellent** as a result of the **sophisticated** and **highly effective** use of: ● layout and white space ● visual hierarchies ● common conventions.

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Task 1 Activity B – The Design –Algorithm Design

Indicative content and marker guidance
Decomposition coverage Students should select some key processes that would be appropriate to meet the needs of **GibJohn Tutoring**. Key problems may include: - Handing user access e.g. Setting up an account, logging-in, changing password   - Collection and processing of data e.g. registration, tracking student marks, student progress through tasks   - Communication/data exchange between different platforms or between front-end and back-end systems e.g. analysing students marks to make recommendations, pulling in assessment data to personalise quizzes   - Key calculations e.g. Student log-in/study time, cost of tutoring.   - Data filtering and visualization e.g. Student and tutor performance, usage stats   Decomposition may be shown through descriptions or visualization e.g. decomposition diagrams, navigation maps etc. **Algorithms** Maybe in the form of flowcharts, pseudocode, data flow diagrams, static and dynamic model diagrams or a combination of all three. Expected features of algorithm design may include: - the steps are clearly defined and depend on the input and the result of the preceding steps   - the algorithm stops after a finite number of instructions are executed, two key constructs iterate and decide   - the value/data for input is clearly identified and can be traced   - type of output is clearly defined e.g., display to screen, physical printout, return value from a function   - logic of the algorithm is accurate   - data flow is complete e.g. flow diagram doesn't end unexpectedly, loops as appropriate etc.   - correct use of symbols   - Links to data, libraries and other resources clearly identified e.g. API, CSV, or Database file   - Sensible names for functions, variables etc.   - Use of keywords e.g. IF…THEN. WHILE….   - Indentation to aid readability and show logical dependency

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Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	1	2-3	4
Decomposition of problem	No rewardable material	Basic decomposition of the identified problems that superficially cover the required: • inputs • processes • outputs	Good decomposition of the identified problems that sufficiently cover the required: • inputs • processes • outputs	Highly effective decomposition of the identified problems that comprehensively cover the required: • inputs • processes • outputs
		1 - 2	3 -4	5 - 6
Application of logical thinking and conventions		Algorithms would produce some correct outcomes as a result of: • some precise logic • some appropriate structure and sequence which is likely to be inefficient. Some effective use of accepted conventions although inconsistencies still exist.	Algorithms would produce mostly correct outcomes as a result of: • mostly precise logic • appropriate structure and sequence but which may lack efficiency. Mostly effective use of accepted conventions though some minor inconsistencies may still exist.	Algorithms would produce consistently correct outcomes as a result of: • precise logic • efficient structure and sequence. Effective and consistent use of accepted conventions

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Task 1 Activity B – The Design – The Data Requirements

Indicative content and marker guidance
Data design maybe in the form of: • data dictionaries,   • entity-relationship diagrams,   • data flow diagrams,   • static and dynamic model diagrams or a combination as appropriate to describe the planned solution   Note – data normalisation may not be required depending on the identified/proposed solution.   Data considered should be appropriate for the needs of **GibJohn Tutoring** which may include: • Lerner and tor details   • Schedules and calendars for lessons   • Lerner marks   • Tutor mark books   • Progress data   • Usage stats   The design should show an understanding of error handling procedures which may include: • Data validation rules   • Input masks   • Type casting   • Feedback to user/error messages   • Limiting field/variable length

Assessment Focus	Band 0	Band 1	Band 2	Band 3
	0	1-2	3-4	5-6
The design of the data requirements	No rewardable material	Data requirements for the proposed solution are somewhat appropriate, including (as required): • variables • data structures • data types Naming conventions used are mostly appropriate but are inconsistent. Effective error handling procedures are identified for some inputs/processes that require them.	Data requirements for the proposed solution are mostly appropriate, including (as required): • variables • data structures • data types Naming conventions used are appropriate and mostly consistent. Effective error handling procedures are identified for most inputs/processes that require them.	Data requirements for the proposed solution are fully appropriate, including (as required): • variables • data structures • data types Thoroughly appropriate and consistent naming conventions are used throughout. Thoroughly effective error handling procedures are identified for the inputs/processes that require them.

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Task 1 Activity B – The Design – The Test Strategy

Indicative content and marker guidance
Students produce a strategy of how they will test the for a digital solution that they intend to develop. The test schedule should cover: • understanding of how components interrelate. This may include: ○ description of modules/functions that feed data into the component being tested ○ understanding of how correct/incorrect data form one part may impact on the component being tested ○ transition between unit testing and integration testing ○ Functional, non-functional and front end testing • the order in which components should be tested: This may cover: ○ identification of pre-requisites and dependencies • the types of tests/testing techniques that are required to test the student's solution such as: ○ Acceptance testing. ○ Alpha testing. ○ Beta testing. ○ Black box testing. ○ White box testing/structural testing

Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	1-2	3-4	5-6
Test strategy	No rewardable material	The test strategy demonstrates a basic understanding of: • how components interrelate • the order in which components should be tested • the types of tests that are required.	The test strategy demonstrates a good understanding of: • how components interrelate • the order in which components should be tested • the types of tests that are required.	The test strategy demonstrates a thorough and detailed understanding of: • how components interrelate • the order in which components should be tested • the types of tests that are required.

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Task 1 Activity B – The Design – The Design Documentation

Indicative content and marker guidance

Appropriateness of communication of the **design**:

- suitability for the intended audience
- clarity
- use of technical language
- choice of tools / how information is presented.

		1-2	3-4	5-6
Quality of communication	No rewardable material	Some effective communication of the design as a result of: • some use of appropriate techniques, methods and formats • some use of technical language that is appropriate for the intended audience	Mostly effective communication of the design as a result of: • the use of mostly appropriate techniques, methods and formats • the use of technical language that is mostly appropriate for the intended audience	Communication of the design is consistently effective as a result of: • the use of consistently appropriate techniques, methods and formats • the use of technical language that is consistently appropriate for the intended audience

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Task 2 – Developing the solution

The solution

Indicative content and marker guidance
Students demonstrate use of code to produce a solution that includes front-end and back-end processes to meet the needs of **GibJohn Tutoring**.

Functionality:
- Must demonstrate the use of two different languages, e.g. JS and PHP or SQL. Python and SQL etc.
- Use of logic and programming structure should be appropriate for the chosen language such as:
  - Modularisation
  - Appropriate interrelation of arts pf the program e.g. modules pass the correct data between each other, front-end and back-end processes have sufficient separation.
  - Suitable use of programming structures (sequence, selection and iteration) to solve problems in an efficient manner.
  - complex data models in database interlinking more than one table
  - Web service APIs and parsing JSON/XML to service a complex client- server model
- Examples of efficiency may include:
  - Avoidance of very linear structures to more logically and efficient approach e.g. the use of function and procedures
  - OOP design features (classes, inheritance etc.)
  - Recursive algorithms – reminder that if used in PHP here must be a mechanism (IF statement, etc.) that stops the recursion after the desired result has been found
  - Loading data only when necessary

Note – data normalisation may not be required depending on the identified/proposed solution

The program should ensure correct outcomes to meet the needs of **GibJohn tutoring** for example:
- Handing user access e.g. Setting up an account, logging-in, changing password
- Collection and processing of data e.g. registration, tracking student marks, student progress through tasks
- Communication/data exchange between different platforms or between front-end and back-end systems e.g. analysing students marks to make recommendations, pulling in assessment data to personalise quizzes
- Key calculations e.g. Student log-in/study time, cost of tutoring.
- Data filtering and visualization e.g. Student and tutor performance, usage stats

Code organisation:

- Students should avoid multiple pages of nested if clauses and unnecessary repeated code that could more effectively be implemented as a called function
- Clear and meaningful indentation
- Code should consist of pieces of logic, classes, or objects, with proper structure.
- Comments should be used wherever possible to help explain the logic
- Good use of local variables and minimal use of global variables
- Use of constants
- consistent style throughout

User Experience considerations:
- Inputs form the user are handled appropriately such as:
  - invalidation and sanitization
  - ease of user input e.g. GUI features, input masks
  - well-designed interface including UI/UX feaures:
    - Useful – does it meet the needs of the user? Are outputs etc. accurate
    - Usable – is it easy to use / intuitive?
    - Desirable – is it aesthetically pleasing? Does it represent a brand? Consistency.
    - Findable – is it easy to navigate around and find the required
- user guidance and error messages ensure that the product is easy to use and helpful which may include:
  - Short and meaning full error messages (avoid jargon)
  - Provides information about solution/corrective action that can be taken by the user
  - Help/instructions and/or meaningful feature labels to reduce errors
- A robust solution which may include:
  - good exception handling that can deal with unexpected or incorrect outputs
  - "fall back" code to deal with different systems and platforms without crashing
  - Appropriate use of validation

Legal and regulatory guidelines and Standards

- Accessibility has been considered and there should be evidence that their design takes different users in to account such as:
  - Selectable accessibility features (e.g. adjustable fonts, colours etc.)
  - Sensible font and colour base colour selection
- Compatibility with different platforms has been considered (where appropriate) which may include:
  - Creating a standalone/self-contained program
  - Implementation of web-standards / program is accessible through a web browser
  - "fall back" code to deal with different systems and platforms
- legal and ethical considerations considered as appropriate to their solution which may include:
  - Cookie consent notice
  - GDPR considerations
  - Privacy and data policy/informing the user
  - Intellectual property consideration (see asset log)
  - Terms and conditions

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	0	1-2	3-4	5-6	7-8
Functionality	No rewardable material	The prototype implements code in a single language with some functionality but the code lacks efficiency and some major errors persist. Uses some precise logic and programming structures which would result in some correct outcomes	The prototype implements code with some functionality in at least two different languages but the code lacks efficiency and some major errors persist. Uses sufficient precise logic and programming structures which would result in adequate correct outcomes.	The prototype implements mostly efficient functional code in at least two different languages, but some minor errors still persist. Uses mostly precise logic and programming structures which would result in mostly correct outcomes.	The prototype implements consistently efficient functional code in at least two different languages. Uses precise logic and programming structures throughout which would result in consistently correct outcomes.
		1-2	3-4	5-6	7-8
Code organisation		Code is maintainable by a third party, but would present significant difficulties through the use of: • inconsistent naming conventions. • limited logical organisation • limited informative commenting.	Code is maintainable by a third party, but would present some difficulties through the use of: • somewhat appropriate naming conventions. • Some logical organisation • some informative commenting.	Code is maintainable by a third party, and would present only a few minor difficulties through the use of: • mostly appropriate naming conventions. • mostly logical organisation • mostly informative commenting.	Code is easily maintainable by a third party through the use of consistently appropriate: • naming conventions. • logical organisation • informative commenting.
		1-2	3-4	5-6	7-8
User experience		Basic user experience is provided through limited effective use of: • input handling • user guidance and error messages • outputs The solution is partially robust and effectively handles some common errors	Adequate user experience is provided through somewhat effective use of: • input handling • user guidance and error messages • outputs The solution is adequately robust and effectively handles sufficient common and unexpected errors	Good user experience is provided through mostly effective use of: • input handling • user guidance and error messages • outputs The solution is largely robust and effectively handles most common and unexpected errors	Excellent user experience is provided through consistently effective use of: • input handling • user guidance and error messages • outputs The solution is fully robust and effectively handles common and unexpected errors

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		1-2	3-4	5-6	
Legal and regulatory guidelines and Standards		Some effective application of standards and guidelines in relation to: ● accessibility ● compatibility ● legal and ethical considerations Some effective application of procedures and security controls to ensure confidentiality, integrity and availability.	Mostly effective application of standards and guidelines in relation to: ● accessibility ● compatibility ● legal and ethical considerations A mostly effective application of procedures and security controls to ensure confidentiality, integrity and availability.	Consistent and effective application of standards and guidelines in relation to: ● accessibility ● compatibility ● legal and ethical considerations Thoroughly effective application of procedures and security controls to ensure confidentiality, integrity and availability.	

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Task 2 – Developing the solution

Testing

Indicative content and marker guidance

Test data
 	
● Suitable test data should be demonstrated (as appropriate to the student's solution) which may include:
    ○ **test-specific data**: influence the system behaviour and reveal the case specifics under the test
    ○ **test-reference data**: have little influence on the test performance
    ○ **application reference** data: irrelevant to the behaviour under test, and are needed to start the application
    ○ **valid test data** does the system functions are in compliance with the requirements, does the system processes and stores the data as intended
    ○ **invalid test data**: check to see if the software correctly processes invalid values, shows the relevant messages, and notifies the user that the data are improper
    ○ **boundary test data**: help to reveal the defects connected with processing boundary values
    ○ **wrong data**: entering the data of inappropriate format, whether it shows the correct error messages thus showing the use of validation if appropriate
    ○ **absent data**: should check that the solution handles entering a blank field
 	
Use of testing to inform the iterative development process
 	
● Learners should demonstrate how testing was used throughout the development to test and refine the solution. This may include reference to:
    ○ Runtime errors that occurred when implementing code
    ○ Fixing of syntax errors
    ○ How logical errors were detected through the use of appropriate test data
    ○ Descriptions of how issues were fixed
    ○ Refinements made in the code to mitigate issues
    ○ Details of regression testing
    ○ Comparison of manual calculations against program calculations to ensure logic and outputs are correct
    ○ Testing around boundaries to ensure logic of validation is correct

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	0	1-2	3-4	5-6
Suitability of test data	No rewardable material	Tests selected show a basic understanding of how to effectively test inputs, calculations, validation and processes using test data which makes limited use of: - normal data - erroneous data - extreme data	Tests selected show a good understanding of how to effectively test inputs, calculations, validation and processes using test data which includes: - normal data - erroneous data - extreme data	Tests selected show a thorough and detailed understanding of how to effectively test inputs, calculations, validation and processes using test data which includes: - normal data - erroneous data - extreme data
		1-2	3-4	5-6
Use of testing to inform the iterative development process		Comments show a basic understanding of how errors/problems were identified and how they were rectified (as appropriate) for: - inputs - calculations - validation and processes Testing shows evidence of a basic iterative development process	Comments show a good understanding of how errors/problems were identified and how they were rectified (as appropriate) for: - inputs - calculations - validation and processes Testing shows evidence of a good iterative development process	Comments show a comprehensive understanding of how errors/problems were identified and how they were rectified (as appropriate) for: - inputs - calculations - validation and processes Testing shows evidence of an effective iterative development process

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Task 2 – Developing the solution

Documentation

Indicative content and marker guidance
- The Student should provide information regarding the development process they followed it may include: - a commentary on the changes they have made and features included in the solution   - a change log detailing **significant** changes at each stage of development   - information relating to how testing outcomes impacted on changes made   - The student commentary should provide justification as to why changes where made which may refence: - Outcomes of testing in relation to the needs of **GibJohn Tutoring**   - More efficient solutions that came out a result of development and/or further research   - Order in which requirements were dealt with e.g. why V1 focused on a specific functional requirement and other requirements were implemented later, or not implement at all.   - The student demonstrates appropriate use of versioning such as: - Sensible and clear naming convention for each version   - Suitable folder structures that make each version easy to find   - Each version shows a **notable** change in the product e.g. additional functionality, error correction etc.

Assessment Focus	Band 0	Band 1	Band 2	Band 3
	0	1-2	3-4	5-6
Quality of iterative development process	No rewardable material	A basic iterative development process is demonstrated, including: ● Limited and/or superficial records of changes made throughout the development stage ● A superficial or vague rationale for changes made. ● Some effective use of versioning	An adequate iterative development process is demonstrated, including: ● Adequate recording of notable changes made throughout the development stage ● a supported rationale for some notable changes made ● mostly effective use of versioning	An effective iterative development process is demonstrated, including: ● Thorough and detailed recording of notable changes made throughout the development stage ● Convincing and perceptive rationales for notable changes made ● fully effective use of versioning

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Task 3 Part A – Gathering feedback to inform future development

Indicative content and marker guidance

Effectiveness of materials to support the feedback process

The Student should provide evidence of having produced materials that would allow gathering of effective feedback. This may include (but not limited to):

- **screencasts** :
  - demonstrate the prototype to both technical and non-technical audiences/users – may use two different screens (technical/non-technical) or may be in sections.
  - could be used alongside some method of collecting feedback from the user e.g. questionnaire, interview notes to be completed during/after watching.
- **questionnaires:**
  - use of open and closed questions to ensure a range of quantitative and qualitative feedback
  - different sections or different questionnaires for different audiences
  - relevant questions that consider different aspects of the solution (appropriate for the targeted tester/user)
- **records of observation of users**:
  - observation of people using the product
  - identification of 'pain points'
  - Types of observation may include – structured, unstructured, participant observation.
- **paired coding review records**.
  - Technical review of code from an experienced coder
  - Identify issues that may not show up in testing e.g. efficiency, quality of commenting, code structures, alternative solutions

Use of appropriate feedback tools to support the gathering of effective feedback

The Student should provide evidence of the feedback they have gathered using their materials/methods. The evidence should show quality materials that would result in good feedback such as:

- **Meaningful** e.g. graphs and quantitative data

- **Measurable**:
  - Specific metrics that can be 're-tested' to measure improvement – e.g. a rating out of 10
  - Clear and specific improvements e.g. 'Add a dark mode' as opposed to 'interface could be better'

- **Completeness:**
  - Focuses on specific aspects of the solution as required
  - Covers all relevant aspects of the solution
  - Systematically works through aspects of the solution to ensure coverage

- **Consistency:**
  - Consistent approach to collecting data e.g. guidance/form so observations are all comparable
  - Use of follow up questions/interviews to ensure validity of responses to remove misinterpretation

Additional guidance – judgments should be made based on the quality of the materials and not just the quality of the feedback e.g. is the feedback good because the materials ensured it would be of high quality and not because the test user knew how to give good feedback.

Different audiences and users.
The Student should gather feedback form a range of appropriate users and/or testers for the GibJohn services which may include:
- range of ages and abilities e.g. primary school, secondary school, tutors
- programming professionals
- parents

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Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	1-3	4-6	7-8	9-12
Effectiveness of materials to support the feedback process	No rewardable material	The materials would allow for the gathering of limited quality feedback for different aspects of the developed prototype	The materials would allow for the gathering of adequate quality feedback for different aspects of the developed prototype	The materials would allow for the gathering of good-quality feedback for different aspects of the developed prototype	The materials would allow for the gathering of high-quality feedback for different aspects of the developed prototype.
	0	1-2	3-4	5-6	
Use of appropriate feedback tools to support the gathering of effective feedback	No rewardable material	The use of the tools has resulted in feedback that provides some opportunity for evidence-informed further iteration	The use of the tools has resulted in feedback that mostly provides the opportunity for evidence-informed further iteration.	The use of the tools has resulted in feedback that consistently provides the opportunity for evidence-informed further iteration.	
	0	1-2	3-4	5-6	
Effectiveness of communication	No rewardable material	Quality of communication is only sometimes effective for both technical and non-technical audiences as a result of limited use of appropriate techniques, methods and formats

Limited use of technical language that is appropriate for the intended audience | The quality of communication is mostly effective for both technical and non-technical audiences as a result of the use of mostly appropriate techniques, methods and format

The use of technical language that is mostly appropriate for the intended audience | The quality of communication is effective for both technical and non-technical audiences as a result of the consistent use of appropriate techniques, methods and formats

The use of technical language that is consistently appropriate for the intended audience | |

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Task 3 Part B– Evaluating feedback to inform future development

Indicative content and marker guidance

Effectiveness of assets and content

The Student should provide an evaluation of the assets and content within their prototype.

- appropriateness of the assets selected which may include:
  - o 3rd party data (e.g., to simulate customer data)
  - o Multimedia content (e.g., Tutorial videos, images)
  - o Snippets of pre-written code
  - o Any other appropriate information (e.g., tutor information).
- validity and reliability of the sources used which may consider:
  - o primary and secondary information and data
  - o websites used – e.g. is the subject information likely to be accurate, is it up to date etc
  - o information that is realistic/suitable for the scenario – e.g tutoring prices
  - o consideration of bias
- legal and ethical implications of using the identified assets, which may consider:
  - o copyright of content and IP
  - o security and privacy of data and information e.g. GDPR, encryption, Privacy and data policy/informing the user
  - o representation – e.g. range of gender, ethnicity, not conforming to/reinforcing stereotypes
  - o Accessibility
  - o Cookie consent notice
  - o Terms and conditions

Evaluation of project outcomes

The Student should provide an evaluation of the final product against measurable criteria defined in the proposal generated in Task 1.

The evaluation should include:

- Review of
  - o the extent to which functional and non-functional requirements have been met
  - o data to compare outcomes to key performance indicators (as appropriate)
  - o the extent to which user acceptance criteria have been met

- Consideration of potential developments/improvements supported by:
  - o Identification of how far requirements have been met
  - o Feedback form test users
  - o Clear explanation of why an improvement should be made (with reference to feedback and the needs of GibJohn tutoring and its stakeholders).

- examples taken form their prototype and specific feedback extracts from feedback provided by test users.

Assessment Focus	Band 0	Band 1	Band 2	Band 3
	0	1-2	3-4	5-6
Effectiveness of assets and content	No rewardable material	A limited review of the content selected, including superficial consideration of the: ● appropriateness of the assets selected ● validity and reliability of the sources used ● legal and ethical implications of using the identified assets. The review is only sometimes supported by superficial consideration, comparison and corroboration across multiple sources.	A good review of the effectiveness of the content selected, including good consideration of the: ● appropriateness of the assets selected ● validity and reliability of the sources used ● legal and ethical implications of using the identified assets. The review is mostly supported by good consideration, comparison and corroboration across multiple sources.	A comprehensive review of the effectiveness of the content selected, including thorough consideration of the: ● appropriateness of the assets selected ● validity and reliability of the sources used ● legal and ethical implications of using the identified assets. The review is well supported by effective consideration, comparison and corroboration across multiple sources.

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		1-3	4-6	7-9
Evaluation of project outcomes	No rewardable material	A basic or superficial evaluation of how well the prototype meets: ● functional and non-functional requirements of the system. ● key performance indicators (KPIs) ● user acceptance criteria for the proposed system. Basic and/or simplistic rationale for future iteration is provided. Points made are supported by limited relevant: ● selection of examples ● consideration of feedback.	A good evaluation of how well the prototype meets: ● functional and non-functional requirements of the system. ● key performance indicators (KPIs) ● user acceptance criteria for the proposed system. Good rationale for future iteration is provided. Points made are supported by mostly relevant: ● selection of examples ● consideration of feedback.	A thorough and detailed evaluation of how well the prototype meets: ● functional and non-functional requirements of the system. ● key performance indicators (KPIs) ● user acceptance criteria for the proposed system. Convincing and perceptive rationale for future iteration is provided. Points made are supported by an entirely relevant and perceptive: ● selection of examples ● consideration of feedback.

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