# Design – 12 Marks

The Design is the **how** of the project (the Analysis is the **what**). Your design should be detailed enough that a **3rd party** can take it and use it to develop the system. Think: could your teacher or another student take and use it without asking you any more questions?

Your mum can reproduce it

# AQA’s requirements overview

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| --- | --- |
| 1. **Design** |  |
| **Topic** | **✓** |
| * 1. **High-Level Overview**   Show how different parts of the system interact using any one of the following   * [a system flowchart](https://www.smartdraw.com/flowchart/flowchart-symbols.htm) (*most popular*) * a data flow diagram, or object / class diagrams, accompanied by any further explanation that is helpful * non-standard diagrams that combine elements of data flow and program control flow are acceptable, as long as the two can be clearly distinguished. | Smart draw  drawio |
| * 1. **Description of Modular Structure of System** | |
| Use a structure / hierarchy chart to show how your forms and reports link together.  Describe how they are linked to make up the system.  Include an IPSO (Input Process Storage Output) tables and/or list.   |  |  |  |  | | --- | --- | --- | --- | | Input | Process | Output | Storage | | Password  User | calculation | Character |  | | Movement |  | Grid and map |  | |  |  | sound |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | | Site map  Chart +  1-2 paragraph  How your game will work |
| * 1. **Description of Data Items (Data Types & Structures)**   Use the Data Dictionary template from the Analysis to describe your data items.  ***Note: For a DB project, first show a complete Normalisation process, with full explanations of each normal form. Then use the Data Dictionary template from Analysis.***  If a project makes use of data structures in memory, these should be explained. Simple structures, such as arrays of records, might only require a short explanation, while a more complex structure, such as a queue, linked list or hash table could be explained in more detail. | Structure-  1D array  2D array  Graph  Tree  Stack queue  Hash table vector  Matrix  List  Dynamic or fixed? How will it use heap? |
| * 1. **Database design (Normalised ER)**   Update from your Analysis, e.g. no any-to-many relationships. This E-R diagram will be based on the tables in your 3NF.  **NOTE: For an investigation project, changes to sub-headings:**  **2.3 Data Dictionary**  **2.4 Data Structures** |  |
| * 1. **File Structure and Organisation**   ‘*File structure’* refers to the format of the label and data blocks and any logical record control information.  ‘*File organisation’* means the physical arrangement of data in a file into records and pages on secondary storage, i.e.sequential, direct/relative or indexed.  If a project stores data directly in files, the structure of the records in these files should be described, together with how the records are organised for access and inter-relationships between files. | Db use primary to direct access  Link to database  Remote or local  Direct access or swqence access |
| * 1. **Identification of main algorithms**   Show and **explain** sample algorithm(s) to be used in your project; ***how and why you are using this algorithm/method/concept***. These could be user-defined or standard algorithms (e.g. calculating high scores, player movement, attack/damage calculation, etc.), but should be chosen to demonstrate the sophistication of the system and should be key algorithms that are essential to the success of the project.  Use **pseudo-code** or **Structured English**, NOT actual code.  You may wish to refer to Section 4.14.3.4 Example Technical Skills.  ***Note: For DB projects you will need to have a 1.6.1 Query Design section. Use the following table to show your main queries:***   |  |  | | --- | --- | | **Query Name** | qryDeleteStudent | | **Query Type** | Delete | | **Purpose** | To delete students with ID numbers between 240 and 290 from the student’s table. | | **Table(s)** | tblStudent | | **Attribute(s)** | StudentID, Name, Surname, DoB, Tel, Tutor | | **Criteria** | ID numbers between 240 and 290 | | **Display Method** | Screen display / Printout / Not displayed | | **SQL** | DELETE FROM tblStudent  WHERE StudentID BETWEEN 240 AND 290; | | Main algorithm  From code to pseudocode |
| * 1. **Class definitions (if appropriate)**   Draw [Class diagrams](https://www.tutorialspoint.com/uml/uml_class_diagram.htm) and provide a **description** to explain how and why they are linked. | UML  Paragrph why linked? |
| * 1. **Identification of Storage Media**   How, where, are you going to store the files?  Add any other hardware requirements | Remote server or local server |
| * 1. **HCI Rationale**   A paragraph covering, for example, colour, font, size, type of interface (GUI? (menu, pull-down)), and your rationale for choosing this. |  |
| * 1. **HCI Sample of Planned Input Design**   This should be very detailed, see exemplar coursework. ***A good sample will not be 1-3 forms.***  Use Word to draw this. ***Annotate all features (include validations, functionality, etc) & state purpose of forms.***  Use a sensible, large(ish) lowercase font. Remember what the size of the forms will look like to the user when they are running.  Note: Investigation project use storyboards  Related image  Related image  Image result for storyboard for A Level COmputer science game project  Related image | The scene of the game  The combat and the  Storyboard |
| * 1. **HCI Sample of Planned Output Designs**   As described above, but for output. |  |
| * 1. **Hardware and Software selection/design (if appropriate)**   For most projects, it is unlikely to have a choice of hardware to use, so this section will not need to be addressed. However, some projects are more focussed on the use of hardware, such as Arduino boards. For these projects, it would be appropriate to explain the suitability of the hardware and to present, by any appropriate method, information about the design of the hardware or how the hardware is used by the project.  Software – provide an explanation of any library software that will be used (e.g. scientific or data visualisation libraries), database or web design framework to be used. | Minimum requirement: |
| * 1. **Description of measures planned for security and integrity of data**   How can you prevent the user from losing data? How could they recover from a program disaster?   * **Security of the data** - You must address the protection of the data on the new system in the event of a disaster. How will the data be restored? Look at different back-up methods and storages. * **Integrity of the data** - You must look at how the correctness of the data will be checked. Show how you will ensure that the data that is entered into the system will truly represent what it is trying to represent (e.g. how the system keeps a customer’s telephone number for a customer). Discuss the need for deleting related data when a user is deleted to keep referential integrity. * **Access Control** - How the data on the computer will be protected (e.g. passwords, access rights, etc). | Login  Password using hash |
| * 1. **Description of measures planned for systems security**   This covers physical and programmable measures.  **Physical security** - look at the security of the area around where the computer will be situated (e.g. the room it is in, etc).  SQL Injection/Encryption for whole system | Could merge with 2.13 |
| * 1. **Overall Test Strategy**   Describe the [**type of software testing**](http://www.softwaretestinghelp.com/types-of-software-testing/) (most important to use: System Testing and user acceptance testing  Test the ipso? The keyboard? Objective?  ) & **test data** to be used. This covers how you are going to apply testing strategies to your system. You must give examples relating to this, not just standard theory. | User acceptance test  Conduct  How you going to test  Test statgeries |

hardware requirement to run my game. Because of the 3D format of my game, it is more suitable for teenagers because most of them already has experience and familiar with playing a 3D game. Furthermore, there are a lot of strategy, problem-solving element and more interactive than normal maze finding game which favour younger age group.

i

Conclusion: The combat system is well adjust and it brings a lot of fun while playing.

Conclusion: this type of game is the most favourable for the player and it has great online multiplayer experience. The UI looks clean and fun so that it attract to young player. I would take the weather

Conclusion: there should have different ending in response to the player react to the NPC

Conclusion: there should have different ending in response to the player react to the

aze. Earn new characters and getting progress

The weather system should affect the player movement and health bar decrease or monet lost.

The player will respawn to the safe zone and have a selectable camera perspective.

I will also add a lobby music to the game. Each character act different and the way to heal the player is spend monet from the stire. Tge speed, strength, health increase and invincible to

Public \_anotherclass newclassname; //associate

Newclassname = new \_anotherclass //create object/ inhertance

C# event orientated

\_\_\_\_\_\_.performed += ctx => runSomeFunction.Jump()

Controller.Move(transform.TransformDirection( Vector3))

Function( onFoot.Movement.ReadValue<Vector2>()) //inputPackage .readvalue

Rotatation(unit) = Qutertuation.Euler(Vector3)

8117 amv

Newhall

range

8113

icy

**This section is marked by looking at how well your design describes how the key aspects of the solution are structured:**

* **Fully/nearly fully explained**
* **Adequately explained**
* **Partially explained**
* **Inadequate explained**