**Task**

You have been tasked to complete various activities: a series of peer reviews, a self-reflection, and improvements to your lightweight design proposal.

.**Each must include the following at a minimum**

* Review three peer reviews
* Complete a reflection on your submission based on your peer reviews
* Submit at least three improvements to your Lightweight Design Proposal.

**The Thing**

One of the most critical things in Industry is the ability to reflect on the work given and use those reflections to improve our work. However, this process is complicated due to the limited time on task and the closed curtain styles of education.

# Tool of learning

### Peer review

You will be required to select three students' work to review. I highly recommend that you select three bodies of work that you feel would benefit your learning. You will receive lightweight marking sheets to help guide your review process.

### Self-reflection

You will use the information from the reviews to inform an analysis of your work. You may identify things that you feel will improve your project by adding them. You may also find items you now see in a different context suggest that something isn't as good as you thought it might have been.

### Project planning improvements

Lastly, you must submit improvements to your design proposals. These improvements must highlight why you have chosen to make them. These highlights must come from your self-reflection, peer-review, or ideally, both.

In the rare case that you can't find any improvements from your cohort, you may negotiate to extend your project design to include more detailed design under discussion with your teacher.

## Rubric

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Knowledge, Comprehension & Application** |  |  |  |  |  |
| **CRITERIA** | **EXPECTATIONS** | **POSS** | **STUDENT** | **GIVEN** | **MULTI** | **TOTAL** |
| **Proposal Reviews**  (individual) | You have shown **evidence of reviewing three student project proposals**. This evidence makes clear that **your reviews are a serious attempt** to operate in the spirit of the assignment. You have likely selected three proposals that **will benefit your development**, and the reviews seem to be **articulated and thought out**.  Evidence for knowledge, comprehension, and application may include:   * **Knowledge**: Your evidence highlights that you recall and list relevant terms in your learning. It may tell a story to the reader (the teacher) or state the conditions of your learning. * **Comprehension**: Your evidence highlights that you can identify critical aspects of your learning or explain what you've done to the author. * **Application**: It is clear from your evidence that you constructed a complete submission | 2  2  2 | \_\_/2  \_\_/2  \_\_/2 | \_\_/2  \_\_/2  \_\_/2 | A 2x  T 1x | \_\_/ 6 |
| **Self-reflection on own proposal**  (individual) | You have shown evidence of taking the completed reviews and applying this knowledge to your work.  It is clear that this evidence parallels and/or commonalities between the review and your work.  Evidence for knowledge, comprehension, and application may include:   * **Knowledge**: Your evidence highlights that you recall and list relevant terms in your learning. It may tell a story to the reader (the teacher) or state the conditions of your learning. * **Comprehension**: Your evidence highlights that you can identify critical aspects of your learning or explain what you've done to the author. * **Application**: It is clear from your evidence that you constructed a complete submission   Note: the assessor may use their discretion to source other evidence from this assessment to judge the activity if required. | 2 | \_\_/2 | \_\_/2 | - | \_\_/ 2 |
| **Design (re)-submissions**  (individual) | You have submitted **evidence of improved submissions** to your proposal. These submissions **may be re-submissions or be entirely new**.  It appears that (re)-submissions are **suitable improvements on your work**, and you have provided evidence of **why/how you have selected these works** for submission **from your reflection and/or reviews**.  Evidence for knowledge, comprehension, and application may include:   * **Knowledge**: Your evidence highlights that you recall and list relevant terms in your learning. It may tell a story to the reader (the teacher) or state the conditions of your learning. * **Comprehension**: Your evidence highlights that you can identify critical aspects of your learning or explain what you've done to the author. * **Application**: It is clear from your evidence that you constructed a complete submission   Note: the assessor may use their discretion to source other evidence from this assessment to judge the activity if required. | 2 | \_\_/2 | \_\_/2 | - | \_\_/ 2 |
|  | **Analysis, Synthesis & Evaluation** |  | | **SUBTOTAL** | | **A \_\_ / 16 T \_\_/ 10** |
| **Evaluation of solutions that address problems or challenges** | Your evidence will be assessed for your ability to **evaluate different techniques**. Primarily this evaluation will be taken from your **peer reviews**.  Evaluation is a process that examines a body of work. This process determines and assesses the work's merit, worth, and significance. The primary purposes of evaluation are to **gain an insight into prior or existing knowledge**, **enable reflection**, and assist in **identifying future improvements**.  Note: the assessor may use their discretion to source other evidence from this assessment to judge the activity if required. | 4 | \_\_/4 | \_\_/4 | - | \_\_ / 4 |
| **Analysis of given data and information to improve solutions or complex problems** | Your evidence will be assessed for your ability to **analyse your peer reviews and draw conclusions on what could improve your proposals**. Primarily this analysis will be taken from your **self-reflection**.  In this context, analytical reflection is an exercise of **articulating your thoughts with honesty** and **from an observant perspective**.  You will be **required to write critically**. Critical writing requires you to view a topic **from various angles, evaluate evidence, present a clear conclusion, and reflect on the limitations of your argument**. They often answer questions like "what?", "how?", "why?", and "so what?"  Note: the assessor may use their discretion to source other evidence from this assessment to judge the activity if required. | 4 | \_\_/4 | \_\_/4 | A 1x  T 2x | \_\_ / 4  \_\_ / 8 |
| **The application of analysis and evaluation to create improvements in work** | Your evidence will be assessed for examples of **applying your understanding and knowledge gained from reflection and peer reviews**, and your ability to draw on information creates opportunities to **improve your problem-solving and defining techniques**.  In this context, you are being **assessed o your ability to synthesise new learning** from different areas. You probably do synthesis subconsciously, but it means that you **draw upon one or more sources and infer relationships** among those sources in new and meaningful ways.    Primarily, you will be **assessed from your project (re)-submissions**, each of which will **highlight where this idea came from and why you think it improves your project**.  Note: the assessor may use their discretion to source other evidence from this assessment to judge the activity if required. | 4 | \_\_/4 | \_\_/4 | - | \_\_ / 4 |
|  | **Submission Guidelines** |  | | **SUBTOTAL** | | **A \_\_/12**  **T \_\_/16** |
| **Suitability** | **Assessment submission is ordered** and has a definite pattern to its construction. **The reader is not confused about the content in any given section and can follow the submission flow** easily. | 4 | \_\_/4 | \_\_/4 | - | \_\_ / 4 |
| **Formatting** | **Students have** **followed the formatting instructions,** including any provided templates and guides **or have created a** legible formatting guide **and applied it constantly**. | 2 | \_\_/2 | \_\_/2 | - | \_\_ / 2 |
|  |  |  | | **SUBTOTAL** | | **\_\_ /6** |
|  | DAYS LATE \_\_\_/7 = \_\_\_% |  |  | **FINAL** | | **A \_\_/32 T \_\_/34** |

## Rubric sections

##### Section 1: Knowledge Comprehension and Application

This section of the rubric consists of the required elements of the assignment. Students should take special care to include ALL these elements as they are often extended in the following sections

##### Section 2: Analysis, Synthesis, and Evaluation.

This section will evaluate your ability to include critical thinking and justification elements into your work. Often the requirements for extension are not explicitly given, so it will be up to you to decide how best to demonstrate what you have learned beyond the required unit goals and curriculum. Items such as 3D models, pictures, drawings, diagrammatic responses, notes, evidence of problem-solving, advanced programming concepts, elegant responses, media, etc., are all available options.

##### Section 3: Submission Guidelines

Students are expected to provide a submission that fulfils the requirements listed in style guides while also submitting at an appropriate quality. Be aware that points in this section could be 2- or 4-point items. Treat them accordingly.

## Submission

All submission items should be stored in an appropriate format. For example, code must be stored in a programmatical format so it can be evaluated (**images of code or code copied and pasted into a document may not be marked**)

Evidence of working material must be recorded where appropriate. For example, to show how your robot meets a requirement, you must submit a recording of it completing that requirement. Similarly, if you need to show how your program can download a file from the internet and crack a password, you must submit a recording of it doing that.

Ask the teacher if you are unsure if an element needs to be recorded**.**

All materials must be submitted to Google Classroom.

Students are responsible for keeping backups/master copies.

## **Scoring Notes**

Formatting for all typed/written assessments should be as follows:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Google Doc** | 11-12 Pt | 1.15-1.5 Line Spacing | 1 Space between paragraphs | Spelling and Grammar “Soft Limit” | In-Text Citations with footnotes | Title Page/Slide:   * Name * Date * Class * Aim * Assessment title |
| **Slides** | 10-12 pt. font text  14-24 pt. font titles | 1.0 1.15 Line Spacing | Bullet Points Preferred | Word Count per slide >100-110 “Soft Limit.” | Approved Templates and Themes |
| **Python** | We apply the following style guide to Python files. However, in general, most programs follow this overall layout.    [PEP 8: The Style Guide for Python Code](https://pep8.org/) | | | | | |
| **Arduino**  **C/C++** | We apply the following style guide to C/C++ files. However, in general most programs follow this broad layout.    I accept both K&R and K&R alternative bracing format. As long as it is consistent in your file.  [Arduino Style Guide for Creating Libraries | Arduino Documentation | Arduino Documentation](https://docs.arduino.cc/learn/contributions/arduino-library-style-guide) | | | | | |
| **Markdown** | We apply the following style guide to markdown documents. However, in general, most documents follow some variation of the following layout:    <https://github.com/google/styleguide/blob/gh-pages/docguide/style.md> | | | | | |

“Soft Limits” are not rigidly defined limits and will be assessed on a case-by-case basis. Ask for clarification on specific tasks

## Possible Scoring Groups are out of 2 or 4 Points.

##### 2-Point Criteria - Knowledge and Understanding

Criteria assessed as 2-Points are classified as Knowledge and Understanding criteria. These will examine and evaluate a student’s ability to effectively state facts and define terms and concepts. Analysis and synthesis of the information will not be assessed through these criteria.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **0 Points** | **1 Point** | **2 Points** |
| **2 Point Criteria** | **Not present** or **not able to be assessed** as the required criteria | Item is presented but **does not meet expectations** for quality, rigour, or detail. | Item is presented and **does meet expectations** for quality, rigour, or detail |

##### 4-Point Criteria - Analysis and Synthesis and Expert Review

To show true mastery of your developing skills, students must show that they can go beyond simple repetition of the given tasks or an explanation of processes. Students will demonstrate their ability to show higher-order thinking through analysis, evaluation, or linking multiple fields of learning to solve problems in novel ways.

## Analysis and Synthesis

Analysis and Synthesis components evaluate a student’s ability to effectively review data and understandings and develop these into a coherent and relevant statement. Analysis refers to the generating of thoughts from interpreting the data. In contrast, synthesis combines experience from one area with other pertinent knowledge to develop an original and compelling solution.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **0 Points** | **1 Point** | **2 Points** | **3 Points** | **4 Points** |
| **4 Point Criteria** | **Not present** or **not able to be assessed** as the required criteria | Evidence is presented and explained. However, it **does not show appropriate evidence of higher-order thinking** such as analysis, evaluation, or synthesis. | Evidence is presented and **shows appropriate evidence of higher-order thinking** such as analysis, evaluation, or synthesis. | Evidence is presented and **exceeds expectations for evidence of higher-order thinking** such as analysis, evaluation, or synthesis.  **-or-**  Item is presented and shows appropriate evidence of higher-order thinking such as analysis, evaluation, or synthesis and **exceeds expectations for quality or rigour** of understanding of the selected mastery. | Evidence is presented and **exceeds expectations for evidence of higher-order thinking** such as analysis, evaluation, or synthesis. **Additionally, this item exceeds expectations for quality or rigour** of understanding of the selected mastery. |

##### Expert Review

Expert Reviews evaluate a student’s ability to build solutions using the skills taught during the semester. Criteria assessed as 4-Points are classified as Analysis and Synthesis criteria. These will examine and evaluate a student’s ability to effectively review data and understandings and develop these into a coherent and relevant statement. Analysis refers to the generating of thoughts from interpreting the data. In contrast, synthesis combines experience from one area with other pertinent knowledge to develop an original and compelling solution.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **0 Points** | **1 Point** | **2 Points** | **3 Points** | **4 Points** |
| **4 Point Criteria** | **Not present** or **not able to be assessed** as the required criteria | Evidence is presented and broadly solves the problem. However**, the evidence does not show appropriate mastery** upon review. | Evidence is presented and broadly solves the problem. On review, it **does show appropriate evidence** of mastery. | Evidence is presented and solves the specific problem. On review, the evidence **shows understanding beyond expected mastery**.  **-or-**  Item is presented and broadly solves the problem. On review, it does show appropriate evidence of mastery and is **done so in a well-constructed or design method** that clearly shows higher levels of understanding**.** | Evidence is presented and solves the specific problem. On review, **the evidence shows understanding well beyond expected mastery** and is **done so in a well-constructed or designed method** that clearly indicates higher levels of understanding. |

##### Multiplier

Criteria will be combined with a **Multiplier**. While each criterion will be scored on the 0-1-2-4 scale, the multiplier will attach relevant worth to each criterion. Be aware of these multipliers and dedicate appropriate time to ensure you achieve your best result.

## Achievement Standards:

## Evidence of higher-order learning:

What is it that I mean by “higher-order thinking”?

It means I want you to go beyond replicating what we do in class. I want you to dig into your brain and understand why you did something, what about it was great, and what could be improved.

Why is this important? Reflective thinkers can go beyond what they are taught and can customise their learning to ben

