# CMGT Personal Portfolio Learning outcomes template *v1.4*

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| **Name: Nils Meijer**  **Student number: 466301** | |
| *You need 2-4 learning outcomes for every personal portfolio. A learning outcome should represent 20-40 hours of work. Each Personal Portfolio module is 3 ECTS, every 1 ECTS is 28 hours. In total you need to spend approximately 84 hours on every Personal Portfolio module. That equals 1 day of work in every week of the term. Your portfolio item and critical reflection needs to represent this.*  *Please decide before starting if you want to connect your learning outcomes or work on unrelated outcomes. It’s allowed to connect/align multiple learning outcomes across multiple Personal Portfolio modules, as long as it’s clear what you learned and achieved for each separate one.*  SMART  **Learning outcome 1**  “In the 4th (but redo in 2nd) term as an engineer, I will learn how to implement flowfields for AI navigation in Unity using C#. Flowfields are generally used to handle AI navigation for groups of AI agents. These flowfields will be applied in a small Android game, inspired by old strategy games such as Pixel Legions. This will increase my portfolio diversity and to show potential employers I am capable of learning new technologies, in this case deepening my knowledge of AI (but not limited to) navigation techniques and vector math algorithms, as AI is currently a fast-growing industry. I will know I have completed my learning goal when I have created at least 1 fully self-functioning enemy AI in a playable 2D or 3D topdown strategy game, responding to my (the player’s) actions. To learn how to write such an algorithm, I will research existing games and how they implemented their mass-agent AI navigation. I estimate that learning and applying the knowledge on how to properly implement a flowfield algorithm for AI navigation will take around 70 hours. I will keep track of my hours in an Excel sheet.“  *CMGT Competence(s):*   1. *Technical research and analysis* 2. *Designing and prototyping*   *4. Investigating and analyzing*  **Learning outcome 2**  “In the 4th (but redo in 2nd) term as an engineer, I will learn how to implement and manage an in-game shop, which is used for microtransactions, connected to the Google Play Store. I will also learn how to implement a (*non-intrusive*!!) ad-system. This will improve my knowledge of how the financial infrastructure of mobile games work and how to implement it properly and in an ethical manner (no intrusive ads, the shop/ads not affecting the gameplay itself in a negative way whatsoever). I will know I have completed my learning goal when I have successfully published the previously mentioned (learning goal 1) game with a real shop to the Google Play Store, and can make a (testing) purchase. To find out how to implement such a shop, I will research Unity documentation and research existing (mobile) games to determine the best ways to program a microtransaction system. I estimate that learning and applying the knowledge on how to implement this system will take around 15 hours. I will keep track of my hours in an Excel sheet.”  *CMGT Competence(s):*   1. *Technical research and analysis* 2. *Designing and prototyping* 3. *Testing and rolling out* | |
| **Describe how your learning activity corresponds with your learning outcome.**  Which assignment(s) and activities will you carry out to achieve your learning outcome? | **Learning goal 1:**  I will work on a prototype for a small 2D or 3D. It will be a topdown strategy game, since that’s not something I’ve made before but have always enjoyed playing games with such a setting.  **Learning goal 2:**  Twined together with the learning activity of learning goal 1, I will implement a small but functioning in-game shop which will be used for microtransactions processed by the Google Play Store. The items that can be bought have to be relevant in some way (cosmetics, ad-removal) to the game, but not negatively impact it. |
| **Which product(s) (or outcome(s)) will you work on to demonstrate the extent to which you have achieved your learning outcome? Describe what the essential conditions, necessary characteristics, and requirements of each product (outcome) should be?**  What is the least you must do to demonstrate that you have achieved your learning outcomes? | **Learning goal 1:**  The least I must have done is:   * A simple but functional main menu. * A gameplay level which contains an environment, and at least 1 fully self-sustaining enemy AI, which responds to player actions.   **Learning goal 2:**  The least I must have done is:   * Research existing mobile games with similar financial infrastructures (microtransaction shop, ad deployment) * Implement a prototype of such a financial system into the previously mentioned game (learning goal 1) |
| Describe your portfolio item(s): | A small topdown 2D (or 3D, depending on the results of my iterations) strategy game, which will be deployed on the Google Play Store, so that the economical systems mentioned in learning goal 2 are properly demonstrated. |
| Which sources (literature, tools, books, blogs, specialist journals, video tutorials, keynote speeches, interviews, etc.) will you consult and why? Which software/hardware will you use? | Learning goal 1 & 2:  Unity documentation, official Unity tutorials, GDC talks, written/YouTube tutorials, forum posts  Unity  Excel |
| **Previous Learning Outcomes**  Please paste the learning outcomes of modules here. Explain the relation with your current learning outcome and/or portfolio item, and or/ other CMGT modules. | Personal Portfolio (or other CMGT module): *1*  Learning outcome 1:  “As an engineer looking for an internship and with limited knowledge of HTML, CSS, Javascript, I want to practice those elements to gain the capability of developing a properly running & looking portfolio website, and create some mini-prototypes to demonstrate gained skills, and gather this knowledge in a reflection. I intend to spend around 42 hours.”  Relation to current learning outcome: n/a  Learning outcome 2:  “As an engineer looking for an internship and with limited knowledge of what a website should contain, as well as knowledge on UI/UX design, I want to gather knowledge regarding those areas to gain the capability of designing (pleasing UI/UX) a relevant (important information should be present) portfolio website, and gather this knowledge in a reflection. I intend to spend around 42 hours.”  Short description of portfolio item: prototype interactive website (basis for 2nd term), consisting of multiple code & UI/UX prototypes and research questions.  Relation to current learning outcome: n/a  Personal Portfolio (or other CMGT module): *2*  Learning outcome 1:  “As an engineer looking for an internship and in need of a better portfolio website, I want to make use of & further improve/deepen my JavaScript programming capabilities (game mechanics, physics), by making a 2D platformer game, using Three.js, meant as an engagement tool for my portfolio website, so that I can eventually implement it into my portfolio website (separate from this course) and enter the industry with a proper-looking website and can convince potential employers to offer me an internship/job. I intend to spend around 42 hours on this learning goal.”  Relation to current learning outcome: n/a  Learning outcome 2:  “As an engineer with experience in only 1 industry-used engine, I want to familiarize myself with the Unreal Engine, preferably UE5. I will make a simple FPS minigame, with one main mechanic and goal, using C++. This will result in a new portfolio piece, which shows I have gained experience in Unreal Engine. I intend to spend around 42 hours on this learning goal.”  Short description of portfolio item: small FPS game, created in the Unreal Engine with blueprints  Relation to current learning outcome: n/a  Personal Portfolio (or other CMGT module): *3*  Learning outcome 1:  “In the 3rd term as an engineer, I will learn how to develop a small VR game (with one goal and one main mechanic) in Unity using C#. This will increase my portfolio diversity and to showpotential employers I am capable of learning new technologies, in this case VR, which will be an even bigger part of the gaming industry (but outside the gaming industry as well) in the future. I will know I have completed my learning goal when I have created a main menu, gameplay level and an endscreen. To learn how to create a small VR game, I will analyze existing VR games &watch and read tutorials on the topic. I will examine the Unity documentation as well. I estimate that learning and applying the knowledge on how to create a small VR game will take around 60 hours. I will keep track of my hours in an Excel sheet..”  Relation to current learning outcome: n/a  Learning outcome 2:  “In the 3rd term as an engineer, I will learn how to measure and improve performance of this VR game, by using the profiler built into Unity and by running multiple tests, graphics-wise and possibly also code-wise. This will improve the quality of the VR game, as well as future (not necessarily VR) games I will make in the future, and will show potential employers I continuously work on improving performance, from start to end. I will know I have completed my learning goal when I have executed and documented multiple tests, and the performance of the game has been noticeably improved. To learn how to handle the optimization process, I will research official Unity documentation & watch and read tutorials on the topic. I estimate that learning and applying the knowledge on how to handle performance optimization will take around 25 hours. I will keep track of my hours in an Excel sheet.”.”  Short description of portfolio item: small FPS game, created in the Unreal Engine with blueprints  Relation to current learning outcome: n/a |