CPE410 - Reflection Activity 5

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Course/Section	CPE410- CPE43S1	**Faculty**	Engr. Adrian Ignacio
Instructions	**Reflection for Patent Search Report** What insights did you gain while completing your patent search report? Did the process help validate the relevance of your research topic? In your opinion, how important is it to conduct a patent search at this stage? Do you believe your concept is patentable? Why or why not? Provide a written explanation to defend your topic, clearly describing its unique features and potential impact. Identify any significant innovations it presents. Additionally, discuss existing research gaps and outline your proposed action plan following the results of your patent search. Your responses are expected to be thoughtful and sincere. **** Minimum of 300 words.** ****Submit this on a PDF file. Include your Name, Course Code and Section, Date of Submission, Prof. Name, the Question and Answer.**		
Answers	In validating our proposed E.C.O. Bin system, the patent search was a very insightful step. It inspired me to realize that around the world innovators are solving waste segregation with many of the same technologies AI, sensors, IoT. Going through 30 plus international patents, I learned that while some devices did use machine sorting, or image recognition or IoT, very few integrated all of these technologies into local, user-centric devices designed to solve local issues like ours. This made me feel that our approach is not just new but also necessary, particularly in Philippine schools. It is absolutely essential to perform a patent search at this point. It avoids duplication, promotes prior art and makes sure we focus on a really original solution. It also allows us to modify our design to not infringe upon current patents pushing innovation further. I'm sure our idea is patentable. Our Qualify ECO Bin is different from other known patents by the incorporation of several unique features that have never been practiced in the same system, such as bilingual audiovisual guidance, a mobile app integrated system that helps guide in real-time		

	during the selection stage and route optimizing notifications to maintenance personnel. Barrier-free walls are designed to be also deployed in domestic educational environments, this is a situation-specific innovation not considered by the majority of commercial epoxy smart bins. The key novelty is in the integration: CNN for classification, sensor fusion (weight + image + IR), IoT for monitoring and the mechanical flipper system all in one smart unit. It does not just sort trash it educates its users, records data for sustainability monitoring and simplifies waste collection. Our research also found a lack of smart bins designed for Southeast Asian institution environments. Inadequate, user-centered waste management strategies that are inexpensive and scalable do not exist. To address this, we will refine our prototype in terms of both prioritized end-user feedback and usage data, and. misclassification testing, consult experts for IP drafting, and explore local patent filing through IPOPHIL. Our goal is to pursue both technical viability and intellectual property protection moving forward.