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|  | **CS 313: Intermediate Computer Programming**  **Project Work 2 (Monday, 15th April 2019)** |

**Instructions**

You may work in teams of threes (3) or fours (4) members for this project. As you work in teams, remember that each member should be fully engaged and fully understand all work done, so that you build capacity to develop a project like this on your own.

**You are supposed to submit your work individually on CAMU by 11:55pm on Sunday 28th April 2019.**

**[60 POINTS\*: (1) 40 points\* + (2) 5 points + (3) 5 points + (4) 10 points]**

**1. Scenario: RePsyche Recycling Project (Ashesi-as-a-Living-Lab) [40 Points\*]**

Ghana is filthy and our waste disposal system is inefficient! As model students (Citizenship, Scholarship and Entrepreneurship) at Ashesi University, the ICP 2021 class has been contracted by the President of Ghana and Zoomlion Company to build a recycling system at the university. This system will be scaled to all communities in Ghana. Here, Zoomlion Company provides the bins and collects the refuse bins when they are full. Also, Zoomlion pays for all the products they collect from Ashesi University for recycling.

This system focuses on recycling glasses, plastics and papers (like that in Sweden: <https://sweden.se/nature/the-swedish-recycling-revolution/>). The requirements of this system are:

1. **[5 points]** User creates an account with the system.
2. **[5 points]** Scan barcode on products (such as water bottles, juice containers, newspapers, Kalypo, Don Simon, Ceres, etc.).

(NB: You will need to be practical and creative with this functionality. Also, you have to look for an android API/library for scanning barcodes)

1. **[5 points]** Credit 20 pesewas to a user’s account for every product scanned.
2. **[5 points]** A scanned product cannot be deposited for credits by other users.
3. **[5 points]** Stakeholders (i.e. Zoomlion Company and Akornor or BigBen or Essentials) should be able to access the total credit of all users.
4. **[5 points]** Zoomlion Company should be informed (through this system) when bins are full. **NB:** You will have to define the capacity of every bin and monitor the number of deposits.
5. **[5 + extra points]** Users can use their credits to pay for items with the above-mentioned stakeholders. ([3 points] **Extra points**\* if you include a functionality where Zoomlion Company also accepts credits towards payment for services outside Ashesi University)
6. **[5 + extra points]** At the end of every week, the most contributor or depositor is awarded the title “The Guardian of our Future”. ([2 points] **Extra points\*:** Be creative in dealing with a tie for the mentioned award)

**2. Task [5 Points]**

**[5 point]** Build an Android (native or hybrid) mobile app for the described system above. Make this app as realistic as possible. Take note that all stakeholders should have (at least) a page in this app. When planning the design of this app, think about how usable it will be as well as appropriate colour schemes (refer to other “nice” apps for inspiration).

**3. What to submit [5 Points]**

You must submit this **document** to CAMU, containing:

* URL to the project on GitHub
* Names of team members.
* Briefly describe why your project is unique compared to the other projects.
* Future work that adds new set of features and functionalities.

**[5 points]** Presentation: Use a scenario (story) to **demo** your project between **5** to **7 minutes** on **Monday 29th April 2019**.

**4. Peer Review (10 Points)**

There will also be a peer-review within teams with regards to how well team members contributed to this project. You are supposed to assess your teammates in this part. As you all know, team dynamics and team work are critical in Computer Science projects.

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| **Names** | **Group Number** | **Peer Grade**  **(Choose from 0 - 5)** | **Comments** |
| 1. (Reviewer) |  | (No grade for self) |  |
| 2. |  |  |  |
| 3. |  |  |  |
| 4. |  |  |  |

Submit the **peer review form** on CAMU on **Wednesday 1st May 2019** at **11:55pm**.

All the best!