Project Proposal & CEP Mapping

PROJECT TITLE:

DEVICE RENTAL SYSTEM

SUBMITTED BY:

B1 - G3

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Project Title

The title of our project is “**Device Rental System**”.

Problem Definition and Project Output

Device Rental System is a web-based device rental platform for users to rent and book digital or smart devices.

- Users can utilize their unused devices.
- Users will be able to hire their needed devices.
- Temporary needs will be fulfilled.
- Digital device wastage will be reduced.
- Impactful for the environment.

Objective

As hardware gets upgraded rigorously day by day some of our devices get incompatible for the working purpose. But those devices could be useful for some other people. Our device rental system is an online-based platform that can be used as a medium for exchanging these products among all. Thus both users who are in need of those products and those who want to give away those temporarily can be benefited accordingly. Moreover, as digital wastage can be reduced from this system, it could be positively impactful for the environment.

Impact on the Society

The more users get engaged in this project the more user will live a clutter-free workstation in their home. By implanting this eco-system, everyone will get benefit accordingly to their need as well as it will be positively impactful for the environment.

Critical Challenges

After working and analyzing it we realized that we are going to face a lot of challenges. Those critical challenges can be:

- User-friendliness– The platform's UI-UX design should be very user-friendly in order to attract more users to use the platform on a regular basis.

- Secure Payment – Secure online transactions between users after confirmation. Active Mobile Banking System integration should be available.

- Authentic Identity- Users registering on the platform should be authenticated. Contact information provided by the users should be valid.

Conflicting Requirement

User to user direct transaction or third party authentication like, payment to admin panel then to user, which one will be implemented should be decided accordingly to the security and reliability purposes.

How Ps are addressed through the project and mapping

Ps	Attribute	How Ps are addressed through the project
P1	Depth of Knowledge Requirement	Requiring a rigorous study of all the existing related platforms (K8), high-level coding language skills, specialized skills in a framework (K3, K4), web-based backend, and frontend design (K5, K6), the project is made.
P3	Depth of Analysis Requirement	Have no actual available reliable platform for renting devices among the users and to reduce wastage in a profitable way. Here further analysis is applied for the used framework, backend-frontend integration, rent calculation algorithm and so on.
P6	Extend to Stakeholders	Diversification is a must and diverse parties such as customers, admins and all other parties involved with varying needs would be monitored.
P7	Interdependence	Interdependent components such as requirement analysis, UI-UX designing, software testing, deployment through git and so on are part of our project.

How As are addressed through the project

As	Attribute	How As are addressed through the project
A1	Range of Resources	In the development stage, the project requires the use of diverse resources including different types of material: web-image. Information: device details. Technologies: PyCharm IDE, GitHub. People: developers.
A2	Level of Interaction	A better interaction is required among the Professional Django Developers and developers (student) and the participants (system users).
A3	Innovation	A degree of innovation is required to develop the authentification of user verification.
A4	Consequences for society and the environment	Because of this, everyone's personal space will be more clutter-free and digital wastage will be reduced.
A5	Familiarity	The project deals with a web-based platform for device exchanging or ranting.

CO-PO mapping for this project

CO No.	CO Statements	Corresponding POs (Page-10)
CO1	Identify a real-life problem **(Digital Wastage Reduction)** that can be translated to engineering and/or computing solution through design, development and validation.	1,2
CO2	On this project we have analyzed, designed, build and evaluate the whole system with given specifications and requirements.	2,3
CO3	By investigating and analyzing some existing e-commerce platforms like: Bikroy.com, rokomari.com and so on. We have designed our system secure and user-friendly.	3,4
CO4	We have used some modern development tools to develop this system. Examples: PyCharm IDE, Python 3.9.x, Django 3.x, Github – VCS.	5
CO5	The project identified an environmental or societal issue which is clutter-free personal space and less digital wastage.	6
CO6	This project developed with the concept of professional ethics, confidentiality, industrial standards and the impact of engineering solutions in social safety and data safety.	8

CO7	This project was continuously developed with the group and individual working. Each member of the group works on interdependent components.	9
CO8	We have presented design, project results through oral presentations and recorded demonstrations via the online platform.	10
CO9	We have maintained distributed and collaborative software development, maintenance and also identified sub-components of this problem, prepared a project timeline and appropriate budget using the project our management skills.	11
C10	In this project, we have identified a real-life problem and that can be translated into a computing solution through design, development and validation. these are some lifelong learning outcomes for all of our teammates.	12

Knowledge Profiles

[K –Short Name]	Knowledge Profile (K)
K1	Natural Sciences.
K2	Mathematics.
K3	Engineering Fundamentals.
K4	Specialist Knowledge.
K5	Engineering Design.
K6	Engineering Practice.
K7	Comprehension.
K8	Research Literature.

Program outcomes (PO) for engineering program

No	PO	Differentiating Characteristic
1	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical
2	Problem Analysis	Complexity of analysis
3	Design/ development of solutions	Breadth and uniqueness of engineering problems i.e. the extent to which problems are original and to which solutions have previously been identified or codified
4	Investigation	Breadth and depth of investigation and experimentation
5	Modern Tool Usage	Level of understanding of the appropriateness of the tool
6	The Engineer and Society	Level of knowledge and responsibility
7	Environment and Sustainability	Type of solutions.
8	Ethics	Understanding and level of practice
9	Individual and Teamwork	Role in and diversity of a team.
10	Communication	Level of communication according to the type of activities performed
11	Project Management and Finance	Level of management required for differing types of activity
12	Lifelong learning	Preparation for and depth of Continuing learning.

Project Management

Lab 02 - Project Proposal

Lab 03 - Registration Authentication

Lab 04 - 05 - Development (Database, Product Landing Page)

Lab 06 - Testing

Lab 07 - Final Submission