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Assignment 1: Innovation & Research.

Module : Creativity and Value Creation

Module Code: ACCA5033

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GARDENERS HUB
GROW TOGETHER • LIVE GREENER

PROJECT PROPOSAL

A Community Platform Promoting Sustainable Gardening and Compost Subscription Services

COMMUNITY SUSTAINABILITY COMPOST WELLBEING

“Small actions today, greener communities tomorrow.”

Student Name: _____

Student ID: _____

Course: Applied Computing

Module: Changemakers: Creativity & Value Creation

Date: _____

Project Title
Gardeners Hub: A Community Gardening and Compost Subscription Platform

Project Aim
To design and develop a digital community platform that encourages sustainable gardening practices through social interaction and a compost subscription service.

Task 1: Ideation & Mind Map

Wednesday, May 13, 2026 10:54 AM

Gardeners Hub Community Gardening and Compost Subscription Platform

Introduction

To address contemporary social and environmental issues, innovation and creativity are crucial. Digital technologies are still influencing how people interact with communities, communicate, work, and learn. Increasing waste generation, environmental pollution, and unhealthy lifestyle choices have rendered sustainable living and environmental awareness critical global challenges [2].

The study demonstrates that ecological awareness varies across countries and generations. These variations result in distinct environmental strategies shaped by cultural and developmental factors. Individuals across diverse age groups and regions participate in sustainable activities to varying extents. Respondents highlight the necessity for more targeted strategies, express concerns regarding eco labelling and greenwashing, and identify challenges such as inadequate waste management and insufficient information [1].

The idea behind the proposed project, "Gardeners Hub," originated from the growing need to encourage people to participate in gardening activities while reducing household organic waste. Gardening provides multiple benefits including physical exercise, stress reduction, healthier eating habits and stronger community engagement [1], [2]. At the same time, household food waste contributes significantly to environmental pollution when disposed of incorrectly. Composting organic waste can reduce landfill waste while producing nutrient-rich compost that supports gardening activities [3], [4].

The project combines community engagement, environmental sustainability and computing technologies into one digital solution. Gardeners Hub will function as a social platform where users can connect with other gardeners, share gardening experiences, receive educational content and subscribe to a compost collection service. The system will reward users with compost products based on their subscription plan and participation level.



Mind Map Discussion

The "Gardeners Hub Platform" is the mind map's main idea. The primary idea is connected to several significant branches.

Sustainability

Through compost recycling, the sustainability division aims to reduce household organic waste. Contributions of food waste can be made into compost that is favourable to the environment. The platform encourages recycling knowledge, eco-friendly living, and a decrease in landfill waste. Additionally, the project promotes circular economy ideas that involve the profitable reuse of waste resources.

Health and Wellbeing

Both mental and physical health can be enhanced by gardening. Frequent gardening can promote mental health, lower stress levels, and provide physical activity. Gardening can improve emotional well-being and lower anxiety, according to research [2]. Users are encouraged by the platform to engage in healthier activities and spend more time outside.

Technology

The creation of mobile and web applications, database administration, cloud storage, user authentication systems, and social networking capabilities are all included in the technological branch. Users will have the ability to register, sign up for services, interact with others, and get alerts. The project revolves around applied computing topics, including data management, UI/UX development, and system design.

Community Engagement

Another crucial aspect of the initiative is community engagement. Users can take part in local gardening groups, publish photos of their progress, and exchange gardening advice. Through common environmental objectives, the platform seeks to strengthen ties throughout the community. To evaluate the effectiveness and scope of digital media-delivered environmental awareness programs, with an emphasis on user interaction and behavioural results across platforms [5].

Business and Subscription Services

Users will be able to pay for recurring compost collection services through the platform's subscription model. Different subscription tiers could offer different amounts of compost incentives. This business strategy might help ensure the platform's long-term viability

Innovation and Creativity

By fusing social networking with waste management and sustainable horticulture, the initiative showcases inventiveness. As a result, creativity and innovation have been viewed in tandem, with innovation being the outcome of a creative concept and a method [6].

Selected Project Idea

The selected project idea is the development of Gardeners Hub, a digital platform designed to support gardening communities and encourage sustainable waste management through compost subscription services.

Task 2: Aim & Objectives and Research area

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Introduction

Research and project planning constitute critical stages in software and system development. Prior to application development, it is essential to establish clear aims, objectives, and research methods. This section presents the aim and objectives of the Gardeners Hub project, examines the chosen research philosophy, and outlines appropriate research tools and databases.

Project Aim

The main goal of this project is to create and develop a digital community platform, Gardeners Hub, which promotes sustainable gardening practices by facilitating social interaction and offering a compost subscription service.

Project Objectives

The objectives of this project are as follows,

- 1. To investigate the potential of digital technology to promote sustainable gardening practices.
- 2. To examine the environmental benefits associated with composting household organic waste.
- 3. To design an accessible web and mobile platform tailored for gardening communities.
- 4. To develop a subscription-based system for compost collection and reward management.
- 5. To evaluate user engagement and satisfaction with the proposed platform.
- 6. To analyse how community-based applications can support healthier lifestyles and environmental awareness.

Research Area

The research area for this project falls within applied computing, sustainability, and community-based digital systems. The project combines several areas of computing, including software development, database systems, mobile application design, cloud technologies, and human-computer interaction. The identification and analysis of published literature have become increasingly important across various disciplines. Systematic literature reviews and bibliometric analyses are increasingly employed to provide comprehensive insights into research problems [7].

The research also focuses on sustainable technologies and behavioural change systems. Gardeners Hub attempts to use technology to positively influence social behaviour and environmental responsibility. The role of technologies in mitigating environmental issues has grown in tandem with their escalation. Digital technologies and emerging concepts are essential for advancing sustainable development [8].

Research Philosophy

Pragmatism was selected as the research philosophy for this study.

Pragmatism is primarily a theory of knowledge that articulates distinct perspectives regarding the origins, nature, and limitations of human knowledge [9]. This philosophy supports the integration of mixed research methods, encompassing both qualitative and quantitative approaches. Given that Gardeners Hub involves both technical development and user behaviour analysis, pragmatism offers the necessary flexibility for selecting effective research strategies.

Quantitative research methods can be categorised by their primary objectives and the general methodologies employed. Quantitative methods, including surveys and statistical analysis, enable the collection of measurable data on user interest, gardening practices, and willingness to adopt subscription services.

A research philosophy comprises fundamental beliefs that guide the planning and execution of a research study. Distinct philosophies offer alternative frameworks for interpreting scientific research [10].

Search Tools and Research Databases

Google Scholar

Google Scholar, which is part of Google's search tools, indexes full-text journal articles, technical reports, preprints, theses, books, and other academic papers. The platform also incorporates certain web pages classified as scholarly [11].

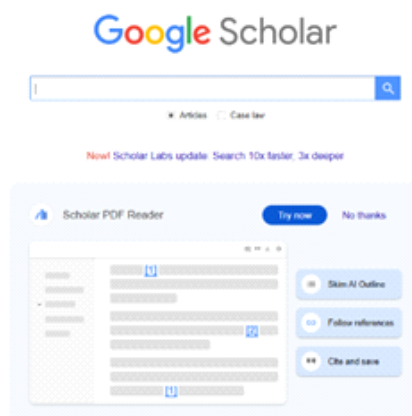


Figure 1 Google Scholar

IEEE Xplore

IEEE Xplore is an important database for computing and technology research. It contains research papers related to software engineering, smart systems and sustainable technologies.

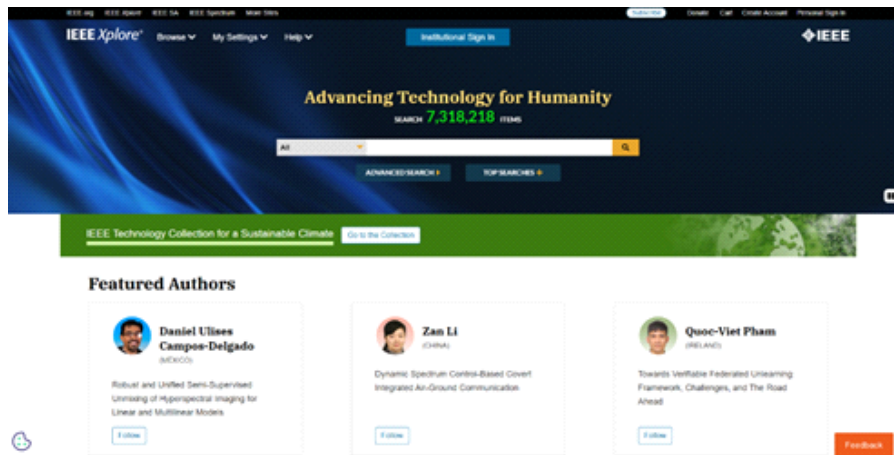


Figure 2 IEEE Xplore

ACM Digital Library

The ACM Digital Library contains computing-related studies, especially in areas such as human-computer interaction, application development and user experience design.

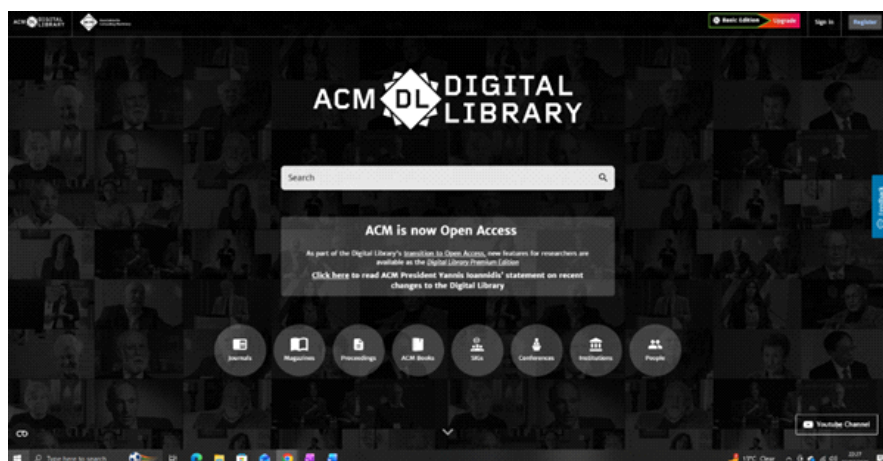
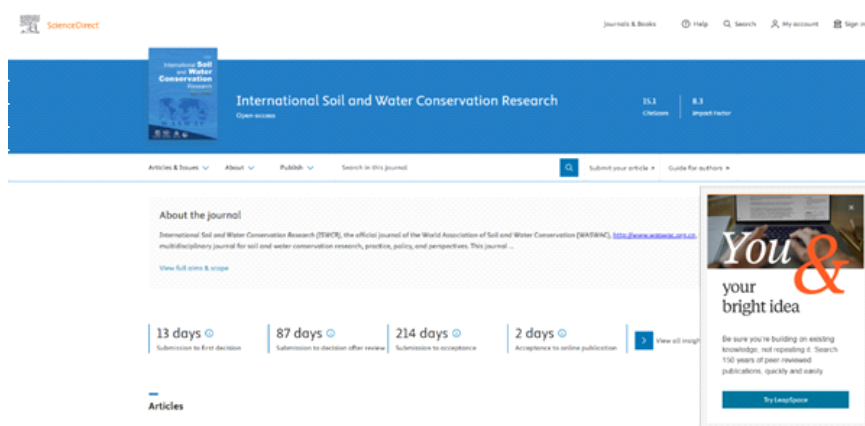


Figure 3 ACM Digital Library

ScienceDirect

ScienceDirect provides peer-reviewed journal articles related to environmental sustainability, behavioural studies and information systems.



ResearchGate

ResearchGate allows access to published academic research and researcher discussions related to sustainable technologies and community applications.

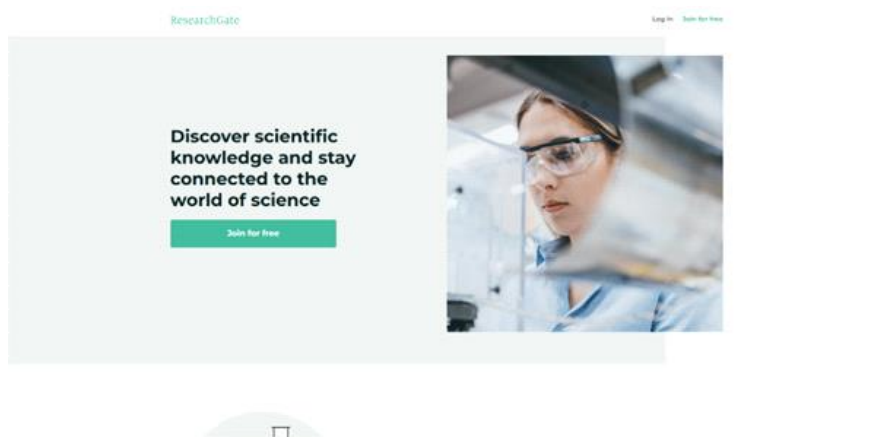


Figure 5 Research Gate

Search Strategies

- Several search strategies will be used to locate relevant literature:
- Using Boolean operators such as AND, OR and NOT.
- Using quotation marks for exact phrase searching.
- Filtering results by publication year.
- Using keywords related to sustainability and computing.
- Reviewing reference lists from relevant papers.

Example Keywords

- Sustainable gardening applications
- Compost management systems
- Community gardening platforms
- Smart waste management systems
- Green computing applications
- Digital sustainability platforms
- Environmental behaviour change technology

Task 3: Research Strategies

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Introduction

Research strategies are important for ensuring that project findings are accurate, reliable and ethically acceptable [12]. This section discusses methods that will be used to enhance validity, reliability and generalisability. It also outlines ethical considerations, data collection methods and analysis techniques relevant to the Gardeners Hub project.

Validity

Validity refers to the extent to which a study accurately measures its intended constructs. Multiple strategies will be implemented to enhance authenticity within this project.

The reviewed studies were sourced from 2 reputable academic databases, IEEE Xplore and ScienceDirect. These studies were identified through advanced searches using various keyword combinations [13].

Reliability

All participants will receive the same questionnaire and instructions. Data collection procedures will be documented carefully to ensure that the research process can be repeated in the future.

Systematic reviews require the use of structured data-collection forms to ensure consistency and reliability in data collection [14]. Digital tools such as Microsoft Forms or Google Forms will also help improve reliability by reducing human error during data collection.

Integration of the SMART Concept

The project adopts the SMART framework to establish well-defined and achievable objectives throughout its development. SMART stands for **Specific, Measurable, Achievable, Relevant, and Time-bound**, providing a structured approach to project planning and execution.

- **Specific:** The project has clearly defined objectives, outlining the exact problem to be solved, the expected outcomes, and the responsibilities of each team member.
- **Measurable:** Progress will be evaluated using measurable indicators such as task completion rates, system performance, testing results, user feedback, and adherence to project milestones.
- **Achievable:** The project objectives are realistic and can be accomplished within the available resources, budget, technical expertise, and project timeline.
- **Relevant:** The project aligns with the intended goals and stakeholder requirements, ensuring that the developed solution effectively addresses the identified problem and delivers practical value.
- **Time-bound:** A project schedule with defined milestones and deadlines will be followed to ensure timely completion of each phase, including planning, design, development, testing, and final implementation.

By integrating the SMART framework, the project maintains a clear direction, supports effective project management, enables continuous progress monitoring, and increases the likelihood of delivering a successful outcome within the specified timeframe.



Generalisability of Findings

Generalisability refers to the extent to which research findings can be applied to populations beyond the original study sample.

To enhance generalisability, the survey will recruit participants from diverse age groups and backgrounds, including both experienced gardeners and individuals with no prior gardening experience.

Ethical Considerations

Adherence to ethical research practices is essential throughout data collection and system development. The findings indicate that ethical considerations encompass the measures researchers implement to ensure participant safety during study enrolment [15].

Prior to participation in surveys or interviews, all participants will be informed of the research objectives. With increasing technological interconnectedness, greater attention is being directed toward ethical considerations in the design of information technology systems [16].

Personal information, such as names, email addresses, and contact details, will remain confidential. All data will be securely stored and utilized exclusively for academic purposes.

The project will adhere to the rules of the General Data Protection Regulation (GDPR) to ensure full compliance with data protection requirements [17].

Research Strategies and Data Collection Methods

Both qualitative and quantitative research methods will be employed in this study. Historical data can be analysed using either qualitative or quantitative methods [19].

This project will employ online surveys to collect data on the following topics:

- Gardening habits
- Environmental awareness
- Interest in compost subscription services
- User preferences for application features

Survey responses will be analysed using graphical representations, percentage calculations, and statistical comparison techniques.

Qualitative Data Collection

Quantitative research methods measure the frequency of specific behaviors, whereas qualitative methods enable researchers to explore the underlying reasons and motivations for these behaviours [18].

For this project, we will employ the following qualitative data collection methods:

- Semi-structured interviews
- User feedback sessions
- Observations
- Open-ended survey questions

These methods will enable us to identify user expectations and potential usability challenges.

Pilot Data Collection Method

A pilot survey will be conducted using Google Forms and Microsoft Forms.

- Do you currently participate in gardening activities?
- How frequently do you recycle household organic waste?
- Would you consider using a digital gardening community platform?
- Would you be willing to subscribe to a compost collection service?
- Which features would you consider most important in the application?
- How important is environmental sustainability to you?

Initially, the pilot survey will be distributed to approximately 5 to 10 participants. Their feedback will be used to refine the survey questions and enhance the project focus.

Quantitative Analysis Methods

Several quantitative analysis techniques will be employed in this project:

- Frequency analysis
- Percentage calculations
- Data visualization through charts and graphs
- Comparative statistical analysis
- Analysis of user engagement metrics

Conclusion

The selected research strategies align with the practical, user-centred approach of the Gardeners Hub project. Employing both qualitative and quantitative methods ensures that the platform addresses genuine environmental and community needs while effectively serving its users.

Appendices: Supplementary information

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Appendix A – Pilot Survey Questions (add yes or no questions)

- Do you currently garden at home?
- How often do you recycle organic waste?
- Would you use a gardening social platform?
- Would you subscribe to a compost collection service?
- What features would you expect in the application?
- How important is sustainability in your daily life?
- Would rewards encourage you to participate more in compost recycling?

Appendix B – Possible System Features

- User registration and login
- Gardening discussion forums
- Compost subscription management
- Reward tracking system
- Notifications and reminders
- Gardening tutorials and educational content
- User profile management
- Community event scheduling

Appendix C – Proposed Technologies

- Frontend: React or Flutter
- Backend: Node.js or ASP.NET
- Database: MySQL or MongoDB
- Cloud Services: Firebase or AWS
- Version Control: GitHub

Appendix D – Future Development Ideas

- AI-based gardening recommendations
- Smart compost bin integration
- GPS-based community gardening events
- Gamification and achievement systems
- Marketplace for gardening products



Changemakers: Creativity and Value Creation

GROW TOGETHER. LIVE GREENER

GARDENERS HUB

The project combines community engagement, environmental sustainability and computing technologies into one digital solution

What is it?

The idea behind the proposed project, "Gardeners Hub," originated from the growing need to encourage people to participate in gardening activities while reducing household organic waste.

Project Aim

The primary objective of this project is to design and develop a digital community platform, Gardeners Hub, which promotes sustainable gardening practices by facilitating social interaction and offering a compost subscription service [3].

Gardening provides multiple benefits including physical exercise, stress reduction, healthier eating habits and stronger community engagement [1], [2].

Conclusion

The selected research strategies align with the practical, user-centered approach of the Gardeners Hub project. Employing both qualitative and quantitative methods ensures that the platform addresses genuine environmental and community needs while effectively serving its users.



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