EasyChair Preprint

№ 12576

# Public Problem Solving

Lenin Goud Athikam, Preetam Kumar Guntuku,
Bhargav Reddy Gorla and Ramlal Pathlavath



March 18, 2024

# PUBLIC PROBLEM SOLVING

ATHIKAM LENIN GOUD
Department of Computer Science Engineering and Technology
Parul Institute of Engineering and Technology
Vadodara, India
200303124122@paruluniversity.ac.in

G PREETAM KUMAR
Department of Computer Science Engineering and Technology
Parul Institute of Engineering and Technology
Vadodara, India
200303126086@paruluniversity.ac.in

GORLA BHARGAV REDDY
Department of Computer Science Engineering and Technology
Parul Institute of Engineering and Technology
Vadodara, India
200303126089@paruluniversity.ac.in

PATHLAVATH RAMLAL
Department of Computer Science Engineering and Technology
Parul Institute of Engineering and Technology
Vadodara, India
200303124410@paruluniversity.ac.in

***Abstract*—Expanding on the concept of a social forum for villagers, it serves as a vital bridge between rural communities and urban authorities, fostering a culture of transparency, collaboration, and problem-solving. This platform provides a democratic space where villagers can voice their concerns, suggest improvements, and seek assistance from local officers. By facilitating direct communication between community members and officials, it eliminates the bureaucratic barriers that often hinder the resolution of issues in rural areas.Moreover, this digital platform revolutionizes the traditional approach to governance by leveraging technology to empower citizens. Through the seamless integration of Python, Django, and SQLite database, the application ensures user-friendly access and efficient management of information. Villagers, officers, and common individuals alike can effortlessly log in and engage in meaningful interactions, regardless of their geographic location.The forum's functionality extends beyond mere problem-sharing; it encourages collaboration and collective action. Users can not only post their concerns but also engage in discussions, offer solutions, and coordinate community initiatives. This fosters a sense of ownership and responsibility among villagers, as they actively participate in shaping the development of their locality.Furthermore, the platform serves as a repository of valuable insights and data, enabling officials to gain deeper insights into the needs and priorities of the community. This data-driven approach facilitates evidence-based decision-making, leading to more targeted interventions and resource allocation.In essence, this innovative social forum transcends geographical boundaries and bureaucratic hurdles, empowering rural communities to drive positive change and fostering a culture of inclusivity, transparency, and collaboration in governance.***

## I. Introduction

In India, there are approximately 600,000 villages, with approximately 125,000 of them facing economic and infrastructural challenges. This situation calls for the transformation and modernization of these villages into smart communities. To illustrate this concept, two specific villages are selected for examination: Kashipur village in the Rayagada district and Vemula village in the Mahabubnagar district. This choice is driven by the growing trend of urbanization and migration, as people seek better access to education, employment opportunities, and a sense of belonging in urban areas. Village development plays a pivotal role in the progress of a nation. Therefore, it is imperative to focus on creating self-reliant villages that can offer essential services, generate employment, and maintain robust connectivity with the broader world. Public participation in problem-solving processes, involving local authorities such as the Sarpanch, Revenue Inspector, Tahsildar, and Collector, is essential to address social issues and ensure the smooth functioning of the village. The overarching vision is to ensure that every resident, regardless of their location, has access to necessary resources and enjoys an improved quality of life.

*STEPS TO DO IN IT:*

- Define Requirements
    1. User Authentication.
    2. Posting Problems and Commenting.
    3. User Roles & Database Management.

- Setup Development Environment
    1. Necessary tools and dependencies

- Design Modules
    1. Plan the database schema .
    2. Build functionalities for user interaction.

- How to Implement
    1. Creating the website based on the locations of the villages.
    2. Uploading of the all requirements.

- Test and Deploy the application
    1. Platform through testing.
    2. Deploy the application to server.

## II. LITERATURE SURVEY

The research paper titled "Rural Development" by Tithi Chatterjee published in the Journal of Cleaner Production in 2020, Rural development aims to enhance rural people's quality of life through a multidisciplinary approach encompassing agriculture, social, behavioral , and management sciences. It seeks to improve the standard of living in areas characterized by recognizable rural features, including small settlements amid extensive landscapes of fields, forests, and natural elements. This development centers on addressing rural poverty, unlocking untapped potential, and promoting education, health, and nutrition, ultimately diversifying economies away from agriculture. Methodology in rural development involves gradually reducing disparities between rural and urban areas, prioritizing local community needs through democratic bodies, investing in infrastructure and services, addressing past injustices, and ensuring safety. It is a process aimed at sustainably improving the quality of life, particularly for the rural poor, in non-urban regions and remote villages.

The research paper entitled "Development of village as a smart village" authored by R.Shanmuga Priyan, published in 2018, This paper explores the concept of smart villages as a means to achieve sustainable and inclusive rural development in India. It emphasizes the importance of using smart technologies and services to address the specific needs of villages, particularly those in backward areas. The paper discusses the historical context, government initiatives like MGNREGA, and a case study of the Vishwakarma Yojana project, highlighting the vision of preserving the essence of villages while providing urban amenities to arrest migration This paper provides a comprehensive overview of the concept of smart villages, discussing their characteristics, key components, and the challenges involved in their development. It explores the potential of technology, sustainable development practices, and community engagement in transforming rural areas into smart villages, offering insights into the theoretical foundations of smart village development.

The research paper titled "Rural Outreach Program," authored by Fernando Almeida and published in 2017, AICTE utilizes engineers' technical expertise to support rural development in areas like water and electricity conservation, housing, skill training for rural youth, and sanitation. Encouraging even a small fraction of the annual one million engineering graduates to work in villages can significantly improve rural conditions, fostering industry exposure and societal connections for students. Engineers have a critical role in applying technology for the benefit of society, emphasizing the importance of understanding societal organization, issues, and technology's role. This paper explores various strategies and best practices for designing and implementing rural outreach programs. It discusses the importance of community partnerships, cultural sensitivity, and tailored approaches to meet the unique needs of rural populations. The paper also highlights case studies and examples of successful rural outreach initiatives across different sectors.

The research paper titled "Study and development of village as a Smart Village," authored by Rutuja somwanshi., and published in 2016. In India, where 125,000 out of 600,000 villages are considered economically disadvantaged, there is a pressing requirement for the development of metropolitan regions. This paper delves into the significance of smart villages in curbing migration by providing vital services and facilitating sustainable rural progress. A"smart village" is defined as a service bundle efficiently delivered to residents and businesses, with a focus on modern energy access catalyzing development across education, health, security, and more. This report emphasizes resource efficiency, local governance, and access to basic amenities for building a happy society using smart technologies. Multiple studies highlight the challenges of sustainable rural employment, Beijing's village role in metropolitan development, clean village initiatives with technology integration, and the need for integrated planning to create smart villages globally.

The research paper titled "Smart Villages Policies:Past,Present and Future," authored bySimona Stojanova , Gianluca Lentini , Peter Niederer, and published in the 2021. Despite a global urban migration trend, a substantial portion of the European Union (EU) population, around 29 percent, resides in peripheral areas lacking essential services compared to urban regions. The study focuses on Smart Villages to address rural challenges using digitalization and ICT. It

aims to review and analyze six key rural development areas and compare Smart Village initiatives in six EU member states for policy recommendations at various levels. This extensive paper evaluates rural development policies in the context of Smart Villages, categorizing them into six essential domains. It places particular emphasis on promoting digitalization while tackling rural-urban imbalances, disparity, recognizing these areas as having the most potential for enhancement. Focusing on developing countries, this paper identifies policy priorities for promoting smart villages and rural development. It discusses the importance of inclusive policies that address the needs of marginalized communities, enhance access to basic services, and leverage technology for socio-economic empowerment. The paper also highlights case studies and best practices from different regions to inform policy interventions.

## III. Experimental Setup

It involves both the hardware and software requirements needed for the project and detailed explanation of the specifications.

*System Specifications:*

*Hardware Requirements:*

- Windows 7 or higher
- I3 processor system or higher
- 4 GB RAM or higher
- 100 GB ROM or higher

*Software Specification:*

- Operating System : Windows OS
- Frontend : HTML, CSS, and JS
- Backend : Python ,POSTGRESQL
- Tool : VS CODE
- Framework : Django 3.2.8

*Advantages:*

- It is to maintain.
- It is user-friendly.
- The system helps users to register complaints without facing a lot of difficulties..

## IV. IMPLEMENTATION

AVillage Public Problem System comprises a series of established protocols employed within an organization to manage grievances and mediate conflicts. The primary objective of this initiative is to empower the public by offering an accessible online platform for ascertaining their location details and addressing their concerns without the need for frequent in-person visits to government offices during the resolution process. The Village Problem Resolution System streamlines the process of addressing public grievances, optimizing time and resources. Our system serves as an intermediary that facilitates direct communication between citizens and government officials, allowing individuals to submit their complaints online with ease. This system simplifies the management, monitoring, tracking, and resolution of complaints, enhancing its overall efficiency. It acts as a valuable instrument for pinpointing and addressing issues efficiently, monitoring the performance of complaint resolution processes, and continually improving the quality of service delivery.

*Login and Registration:*

*1) ADMIN:*

Manage Officer :
The Admin can view, add, update, and delete Officer's details from the system.

View Complaints:
The admin can view complaints posted by the user, reply to them and view their status of complaints. They can apply filters to view complaints by date or status.

View Escalated Complaints:
Filter: The admin can view escalated complaints and also apply filters by date or status. o Reply to Complaints: They can respond to the complaints and change their status.

View Feedback:
All the feedback can be viewed by the admin.

*2) USER:*

Register :
Users will need to register first to log in with their basic details.

Login:
They can log in using their username and password.

Change Password:
The user can easily change their old password to the new one.

Post Complaint:
They can post a complaint about their problems.

Complaint History:
View Complaint: The user can view all their previously registered complaints.
View Reply/Status: They can also view the response and status of their complaints.
Escalate the Complaint: The user can escalate their complaint.

Feedback:
They can provide feedback about their resolved

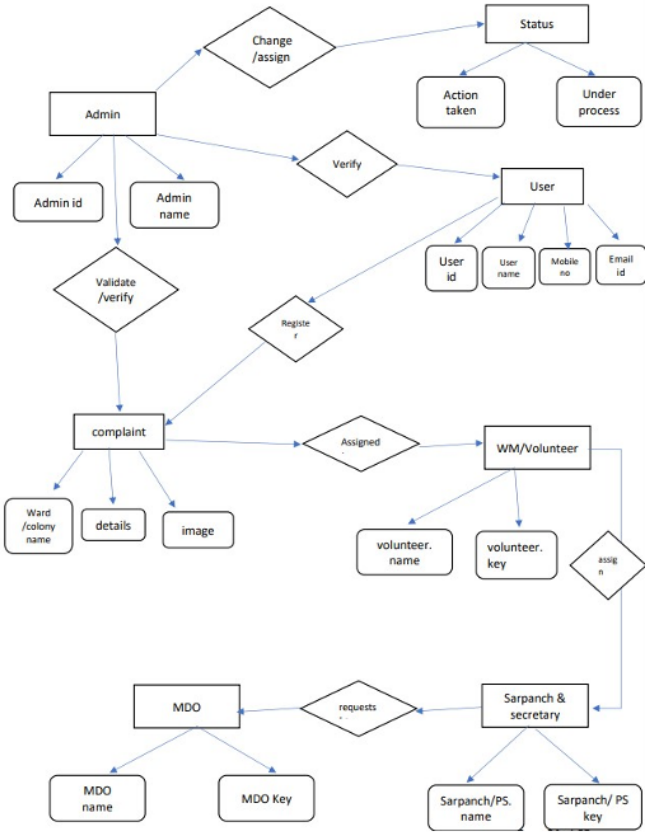
complaint.

*3) Officer:*

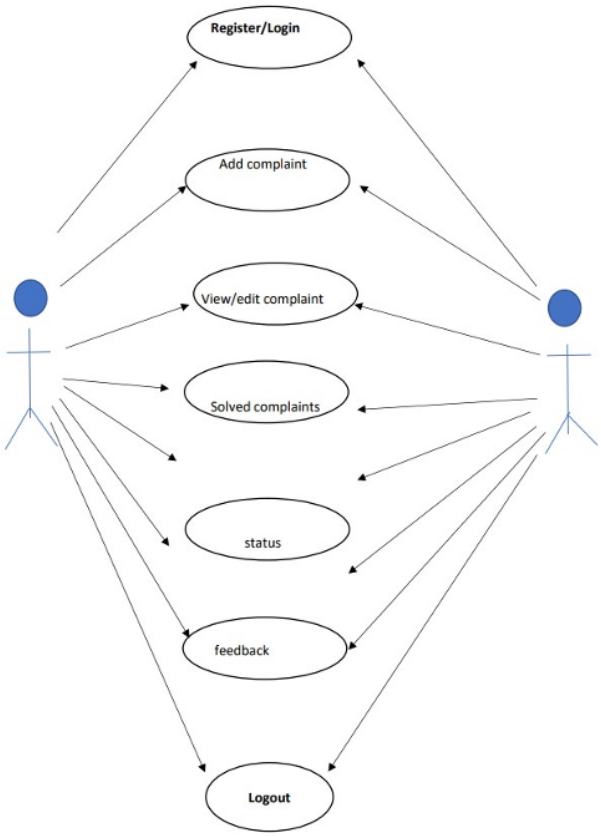
Login:
The officer can enter in to the system using their Username and Password.

View Complaints:
List of complaints: The officer can view the list of all the user's complaints.
Filter by Date/Status: To view complaints by date or status they can apply a filter.
Complaint Details: The officer can view all the complaint details.
Reply to Complaints: They will be able to view and respond to users' complaints.
Update proof of work: They can update the proof of their work.
Update status: The officer can also update the status of the user's complaints.

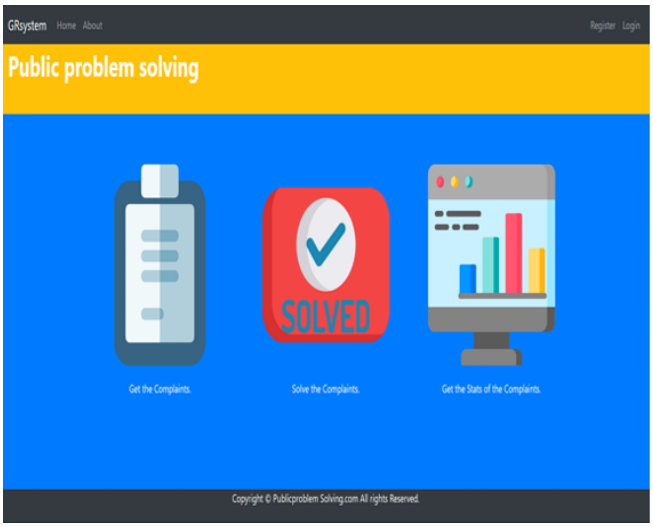
*FLOW CHART*



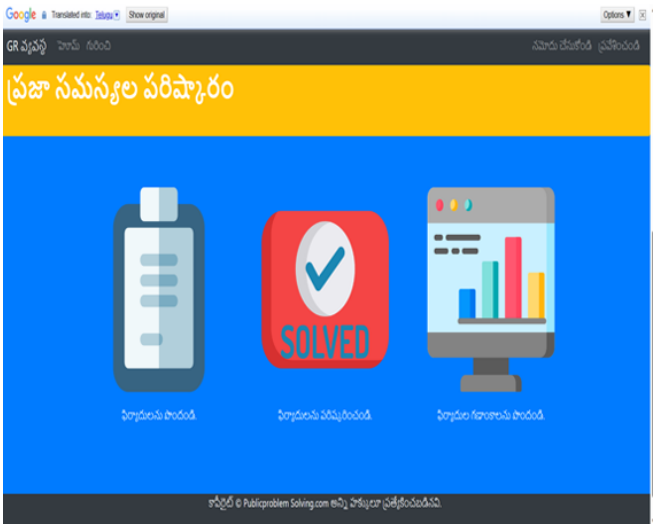

*USECASE DIAGRAM*



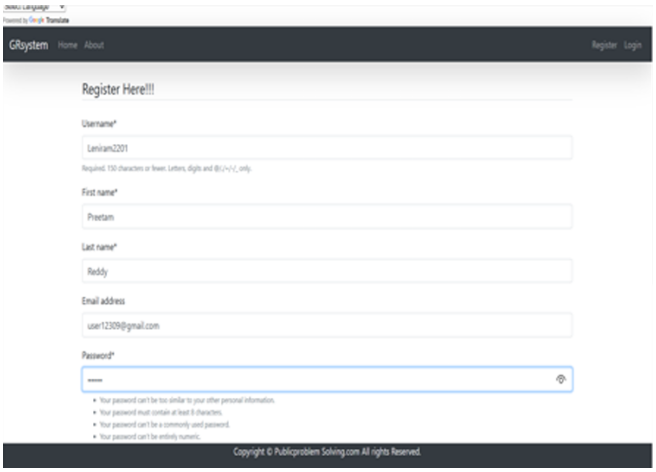

V. RESULT



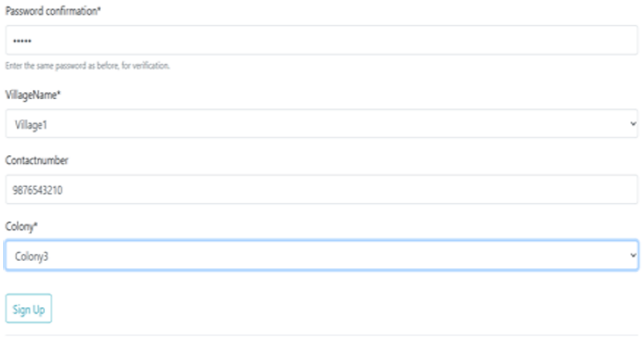

Landing page




Language Translation

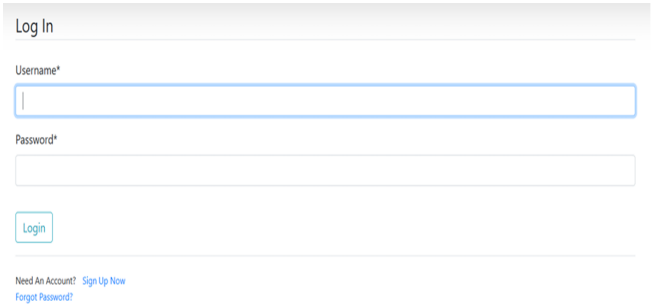



Registration Process

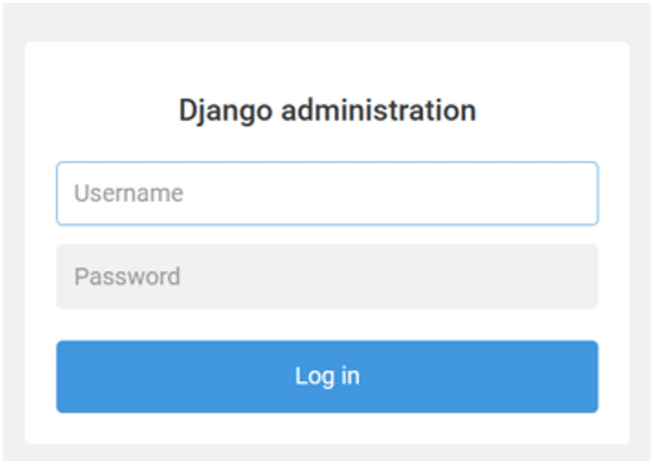



Registration Process2

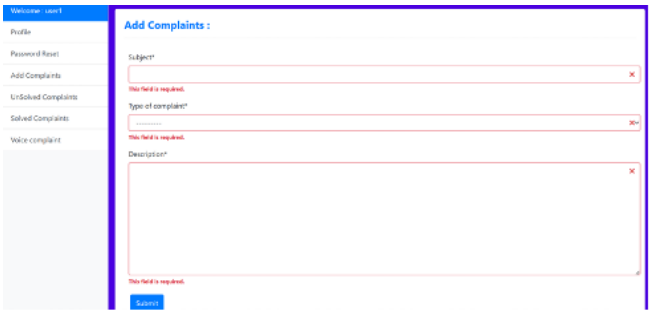

Login Page for User ,Officers And Admin



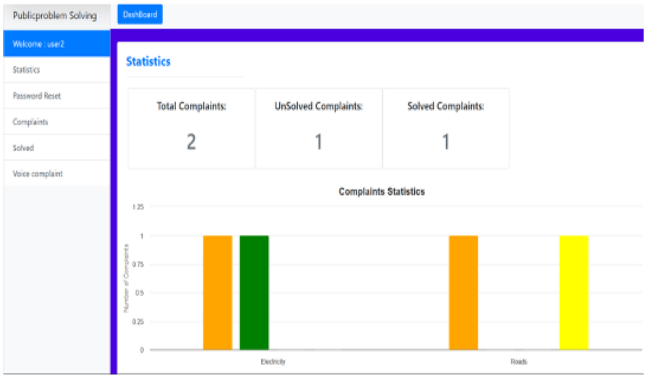

User's and Officers Login Page




Admin Login Page




Raising Complaints




Solve or Check the complaints by Officer's

## CONCLUSION

The current complaint registration process for government bodies is cumbersome and offline, resulting in time-consuming procedures. The proposed

system aims to simplify this process with several key features. Firstly, citizens are not required to recall specific information when submitting complaints, enhancing user-friendliness. Moreover, the integration of mobile channels leverages the widespread use of mobile phones in India, encouraging active citizen participation. Additionally, the system streamlines the complaint registration process, reducing the number of procedural steps involved and ultimately saving valuable time for both citizens and officials.

## REFERENCES


[1] F. Sebastiani, "Machine Learning In Automated Text Categorization," Acm Computing Surveys, Vol. 34, No. 1, Pp. 1-47,

[2] Mr. Nayan Kakadiya, Mr. Purvang Kumbhani Mr. Bhautik Bhatt. "Updation of urban elements in rural areas– a Case study on Chansad Village, Gujarat". International Journal of Advanced Engineering and Research Development, February 2017.

[3] Integrated biomass and solar town concept for a smart eco-village in Iskandar Malaysia (IM) 2014 Off Grid Renewable Energy Systems: Status and Methodological Issues. Working Paper

[4] Gandhi's Views , Work for Village Development Panchayat Raj, Harijan, 18-1-1922.

[5] Ram Krishna (2017), "Development of rural as an ideal and a smart rurban village kartikey"Volume 5,Pp.1-3

[6] Prinsloo, G.; Dobson, R.; Mammoli, A. Smart village load planning simulations in support of digital energy management for off-grid rural community microgrids. Curr. Altern. Energy Spec. Issue Standalone Renew. Energy Syst. Remote Area Power Supply 2017, 12, 1–22. [CrossRef]

[7] Need of Smart Villages. Available online: Smart-Villge (accessed on 14 September 2020).

[8] SRM, (2020). Sandakpur Rural Municipality Profile 2020.Sandakpur Rural Municipality (SRM). Ilam, Nepal. Retrieved From: Gov

[9] Christine Polzin, "Institutional Change in Informal Credit: Through the Urban-Rural Lens: in Barbara HarrissWhite (Ed.), Middle India and Urban-Rural Development: Four Decades of Change, Springer Publication, New Delhi, 2016.

[10] Dhavan Gaurav R.,Nikole Pritesh P.,Ghutukade Manisha R.,Jadhav Anil B.,Sherkar Vitthal A. Jadhav Aditya A., "CASE STUDY AND PLANNING OF SMART VILLAGE," in 02 Days,5th International Conferance on Recent Trends In Engineering,Science and Management, Wagholi,pune, 9-10 December 2016, pp. 929-938.

[11] Antonov, A. V. (2010). Udoskonalennia systemy upravlinnia silskymy terytoriiamy [Improvement of control system by rural territories]. Derzhavne upravlinnia: udoskonalennia ta rozvytok [State administration: improvement and development] (electronic journal), no.10. Retrieved from: State Improvement(accessed 14 Dec 2017).

[12] D.D. Lewis, "Feature Selection And Feature Extraction For Text Categorization," Proc. Workshop Speech And Natural Language, Pp. 212-217, 1992

[13] H. Kim, P. Howland, And H. Park, "Dimension Reduction In Textclassification With Support Vector Machines," J. Machine Learning Research, Vol. 6, Pp. 37- 53, 2005.

[14] B.Y. Ricardo And R.N. Berthier, Modern Information Retrieval. Addison Wesley Longman, 1999

[15] BS 8600:1999 Complaints Management SystemsGuide to Design and Implementation. England, British Standards Institute.Chung-Herrera, B. G., N. Goldschmidt, et al. (2004). "Customer and Employee Views of Critical Service and Nikolaos S. Publisher:Conservation and Recycling . Year:2020

[16] BPS- Statistics Indonesia. (2021). Statistik Indonesia 2021. BPS - Statistics Indonesia. Indonesia.

[17] F. Sebastiani, "Machine Learning In Automated Text Categorization," Acm Computing Surveys, Vol. 34, No. 1, Pp. 1-47, 2002