# Report on One-Day Online Workshop

*Building Interactive Web GIS Dashboards for Spatial Data Visualization and Analysis*

A one-day online workshop titled “Building Interactive Web GIS Dashboards for Spatial Data Visualization and Analysis” was successfully conducted on 15 December 2025 by the Division of Geoinformatics, School of Life Sciences, Mysuru, JSS Academy of Higher Education & Research (JSS AHER).

The workshop was delivered by Mr. Akmaul Hoque, Project Associate, North Eastern Space Applications Centre (NESAC), ISRO, Meghalaya, who is also an alumnus of the Division of Geoinformatics. The program was organized as part of the Alumni Lecture Series with the objective of exposing students and researchers to emerging Web GIS technologies and interactive dashboard development using open-source tools.

## Inaugural Session

The program commenced at 10:30 AM with the opening remarks by Dr. Sushant Sawant, Associate Professor and Coordinator, Division of Geoinformatics. He warmly welcomed the participants and formally introduced the resource person, highlighting his professional association with NESAC–ISRO and his academic roots as an alumnus of the Division. The objectives, structure, and expected learning outcomes of the workshop were clearly outlined during this session.

## Technical Sessions and Hands-on Training

The entire technical content of the workshop was delivered by Mr. Akmaul Hoque, who conducted a structured blend of lectures, demonstrations, and hands-on sessions throughout the day, as per the approved schedule

Web GIS Components.

The morning sessions focused on:

- Fundamentals of GIS and Web GIS
- Differences between Desktop GIS and Web GIS
- Concepts, architecture, and advantages of Web GIS dashboards

The afternoon sessions emphasized practical skill development, including:

- Spatial data formats and preparation workflows
- Conversion and optimization of spatial data for web use
- Dashboard development using HTML, CSS, JavaScript, and open-source libraries such as Leaflet
- Designing interactive maps, filters, and data panels for spatial data visualization

Real-world use cases from agriculture, urban planning, environmental monitoring, and disaster management were discussed to demonstrate the applicability of Web GIS dashboards in decision-making contexts. Participants actively interacted during demonstrations and query-resolution segments.

## Participation

The workshop witnessed active participation from 98 participants drawn from multiple institutions, including:

- School of Life Sciences, JSS AHER, Mysuru
- JSS Medical College, Mysuru
- Mahatma Gandhi Rural Development and Panchayati Raj University (MGRDPRU), Gadag

The diverse participation reflected strong interdisciplinary interest in Web GIS technologies across life sciences, medical sciences, and geospatial disciplines.

## Valedictory Session

The workshop concluded with a review and interactive Q&A session, followed by a formal Vote of Thanks delivered by Dr. Sushant Sawant. He expressed gratitude to the resource person for sharing his expertise, acknowledged the enthusiastic participation of students and faculty, and appreciated the institutional support that enabled the successful conduct of the program.

## Outcome

The workshop significantly enhanced participants' understanding of Web GIS concepts and interactive dashboard development, equipping them with practical skills relevant to modern geospatial applications. The program contributed to academic enrichment, alumni engagement, and capacity building in line with emerging trends in geospatial science and technology.

# EEDBACK ANALYSIS REPORT

## EXECUTIVE SUMMARY

The one-day online workshop on "Building Interactive Web GIS Dashboards" was conducted successfully on December 15, 2025, by the Division of Geoinformatics, SLSM, JSS AHER. The workshop received an exceptional response with 45 participants from diverse academic and professional backgrounds. The overall satisfaction score of 4.41/5.00 indicates high-quality content delivery and excellent workshop organization. The feedback reveals that 84.4% of participants found the workshop duration appropriate, and 75.6% rated the overall experience as either "Excellent" or "Very Good". Key highlights include exemplary clarity in Web GIS concept explanation (Mean: 4.30/5.00), high professional usefulness (Mean: 4.49/5.00), and outstanding participant satisfaction with dashboard fundamentals (Mean: 4.42/5.00).

## KEY PERFORMANCE INDICATORS

| Metric | Value | Performance Level |
|---|---|---|
| Total Participants | 98 | Excellent Turnout |
| Overall Mean Score | 4.41/5.00 | Outstanding |
| Positive Response Rate | 75.6% | Excellent |
| Duration Satisfaction | 84.4% | Excellent |
| Professional Usefulness | 86.7% | Outstanding |
| Content Clarity | 97.8% | Exceptional |

## DETAILED FEEDBACK ANALYSIS

| Parameter | Mean Score | Top Response | Response % |
|---|---|---|---|
| Overall Experience | 4.07/5.00 | Very Good | 46.70% |
| Organization & Flow | 4.27/5.00 | Satisfied | 60.00% |
| Duration Appropriateness | 4.90/5.00 | Yes | 84.40% |
| Web GIS Clarity | 4.30/5.00 | Clear | 68.90% |
| Examples Relevance | 4.39/5.00 | Relevant | 48.90% |
| Dashboard Fundamentals | 4.42/5.00 | Well | 55.60% |
| Professional Usefulness | 4.49/5.00 | Useful | 44.40% |

## PARTICIPANT DEMOGRAPHICS

**Designation Distribution:** The workshop attracted predominantly students and scholars (40 participants, 88.9%), followed by research fellows and faculty members. Institutional Diversity: Participants represented multiple prestigious institutions including MGRDPR University Gadag, JSS AHER Mysuru, and various other universities, demonstrating the workshop's wide appeal across academic institutions.

## QUALITATIVE INSIGHTS

**Session 1-Web GIS Key Learnings:** Participants gained comprehensive understanding of Web GIS dashboard creation, theoretical concepts of Web GIS, web server development, and practical applications of open-source software for web page development. The hands-on demonstrations helped participants understand how to build and publish geographic data.

**Session 2-Dashboard Development**: Participants appreciated the practical demonstration of various tools for displaying custom spatial data, web development techniques, and dashboard creation methodologies. The session was described as "informative," "easy to understand," and highly relevant for professional applications.

## MAPPING TO PROGRAM OUTCOMES (POs) AND PROGRAM SPECIFIC OUTCOMES (PSOs)

The workshop outcomes align significantly with the Program Outcomes (POs) and Program Specific Outcomes (PSOs) as defined by the institution and NEP 2020 guidelines:

| PO/PSO | Description | Mapping Level |
|---|---|---|
| PO1: Disciplinary Knowledge | Understanding of WebGIS fundamentals, spatial data visualization concepts, and dashboard development techniques | High (4.30/5.00) |
| PO2: Critical Thinking | Analysis and interpretation of spatial data through interactive dashboards | High (4.42/5.00) |
| PO3: Problem Solving | Application of WebGIS tools to solve real-world geospatial problems | High (4.49/5.00) |
| PO4: Digital Competence | Hands-on experience with open-source WebGIS tools and dashboard platforms | High (4.39/5.00) |
| PO5: Lifelong Learning | Exposure to emerging technologies in geospatial science and continuous skill development | High (4.49/5.00) |
| PSO1: Geospatial Analysis | Geospatial Analysis', 'Advanced understanding of spatial data visualization and web-based GIS applications | Very High (4.42/5.00) |
| PSO2: Technology Integration | Technology Integration', 'Integration of WebGIS with modern dashboard technologies for data-driven decision making' | High (4.39/5.00) |

## ALIGNMENT WITH NATIONAL EDUCATION POLICY (NEP) 2020

The workshop demonstrates strong alignment with NEP 2020's vision of holistic, multidisciplinary education and skill development:

| NEP 2020 Pillar | Workshop Alignment | Evidence from Workshop & Feedback |
|---|---|---|
| **Multidisciplinary Education** | Integration of Geospatial Technology, Computer Science, Web Technologies, and Data Visualization concepts | Comprehensive coverage of GIS, Web GIS, HTML, CSS, JavaScript, and dashboard design methodologies |
| **Skill Development & Employability** | Hands-on training in industry-relevant Web GIS and interactive dashboard development | 86.7% participants rated the workshop as professionally useful; extensive practical demonstrations and exercises |
| **Technology Integration** | Use of open-source tools and modern web-based geospatial platforms for teaching and learning | Practical sessions on Web GIS dashboards using open-source libraries and browser-based technologies |
| **Research & Innovation** | Exposure to advanced spatial data visualization, analysis workflows, and dashboard-based decision support | Development of interactive dashboards and discussion of real-world applications in planning, environment, and agriculture |
| **Quality & Excellence** | High-quality content delivery, structured sessions, and effective resource person engagement | Overall mean feedback score of **4.41/5.00**; **97.8%** participants rated content clarity as Clear/Very Clear |
| **Accessibility & Inclusion** | Online mode enabling participation across institutions and geographical locations | Participation of 45 learners from JSS AHER, JSS Medical College, and MGRDPRU, Gadag |
| **Continuous Learning & Alumni Engagement** | Alumni-led professional development and capacity-building initiative | Workshop delivered by an alumnus of the Division of Geoinformatics, promoting lifelong learning and alumni connect |

## RECOMMENDATIONS FOR FUTURE INITIATIVES

1. **Content Enhancement:** Based on participant suggestions, future workshops should incorporate advanced topics such as GIS-AI/ML integration, Google Earth Engine, ArcPy/QPy programming, and remote sensing applications.
2. **Extended Duration**: While 84.4% found the duration appropriate, some participants suggested extending workshop duration for more in-depth hands-on practice.
3. **Follow-up Sessions**: Organize advanced-level workshops on specific topics like QGIS integration, physics-RS-GIS integration, and agricultural applications of GIS.
4. **Industry Collaboration:** Enhance industry-academia linkage through case studies and real-world project demonstrations from GIS professionals.
5. **Certification & Assessment**: Implement formal assessment mechanisms and provide recognized certificates to enhance the workshop's value for career advancement.

## CONCLUSION

The one-day online workshop on "Building Interactive Web GIS Dashboards" achieved its objectives with outstanding success, as evidenced by the high satisfaction scores (Overall Mean: 4.41/5.00) and positive participant feedback. The workshop effectively contributed to PO/PSO attainment and strongly aligns with NEP 2020's emphasis on skill development, technology integration, and multidisciplinary education. The exemplary content delivery, organizational excellence, and practical relevance demonstrate the Division of Geoinformatics' commitment to quality education and continuous professional development. This initiative significantly enhances the institution's contribution to geospatial education ecosystem and prepares participants for industry-relevant technological competencies.

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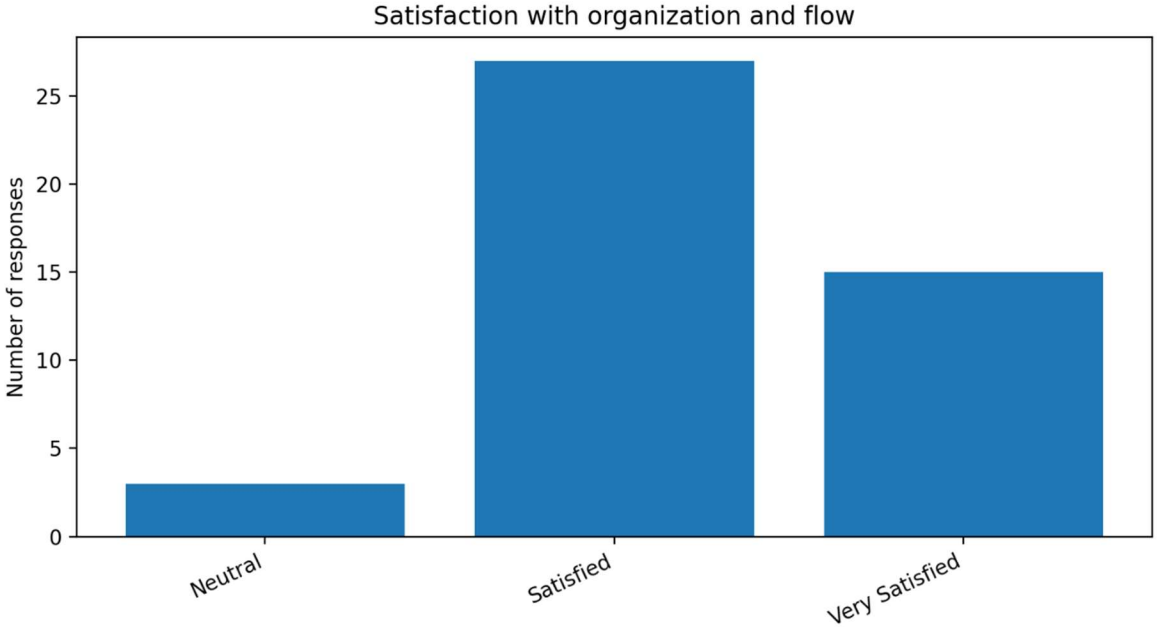
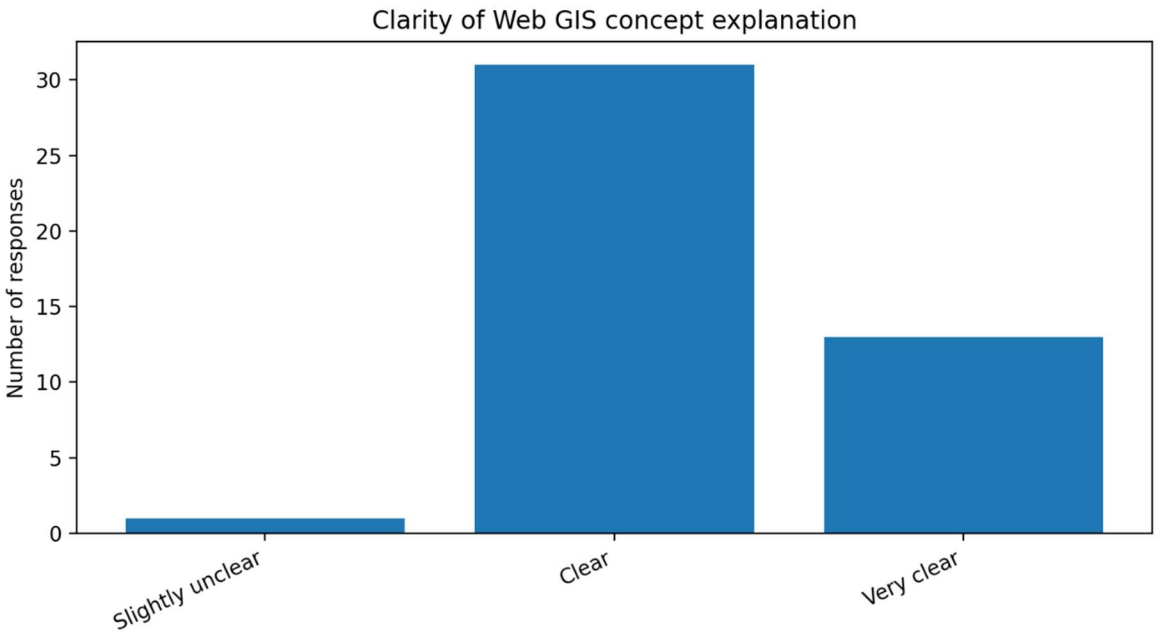
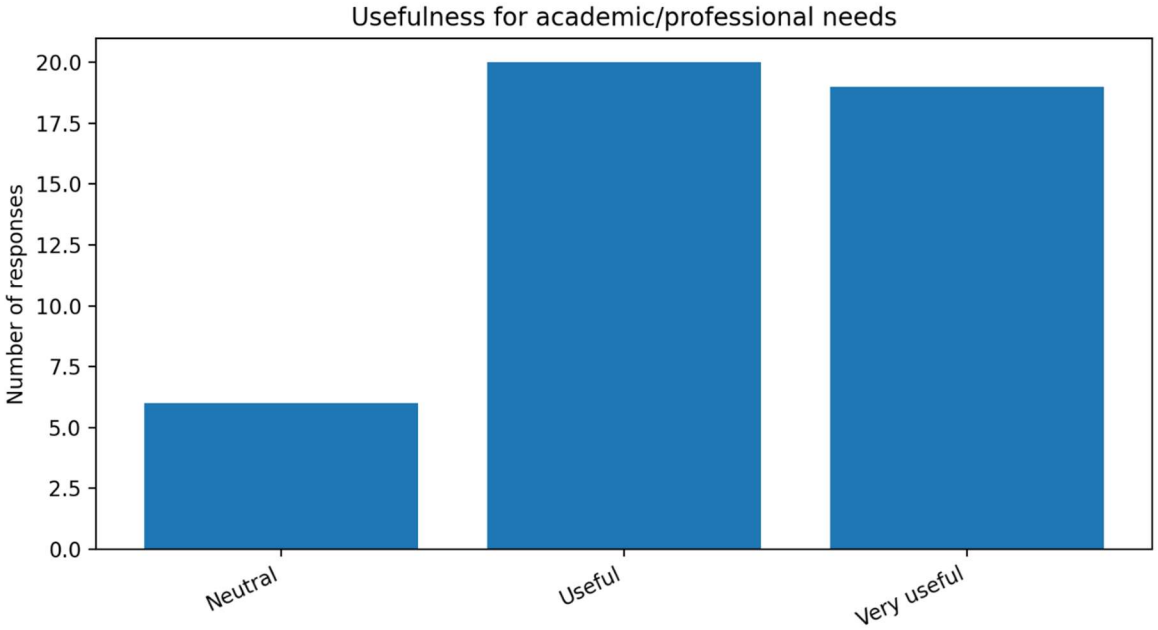
### Key Quantitative Findings (Likert/Scale Items)

- Overall experience: Mean = 4.02/5; 75.6% positive (Good/Very Good/Excellent).
- Organization & flow: Mean = 4.27/5; 93.3% positive (Satisfied/Very Satisfied).
- Duration appropriateness: Mean = 4.64/5; 84.4% indicated duration was appropriate.
- Clarity of Web GIS concepts: Mean = 4.24/5; 97.8% rated Clear/Very Clear.
- Usefulness for academic/professional needs: Mean = 4.29/5; 86.7% rated Useful/Very Useful.


Overall workshop experience rating
Number of responses
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Fair
Good
Very Good
Excellent


Satisfaction with organization and flow
Number of responses
0
5
10
15
20
25
Neutral
Satisfied
Very Satisfied


Clarity of Web GIS concept explanation
Number of responses
0
5
10
15
20
25
30
Slightly unclear
Clear
Very clear


Usefulness for academic/professional needs
Number of responses
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Neutral
Useful
Very useful