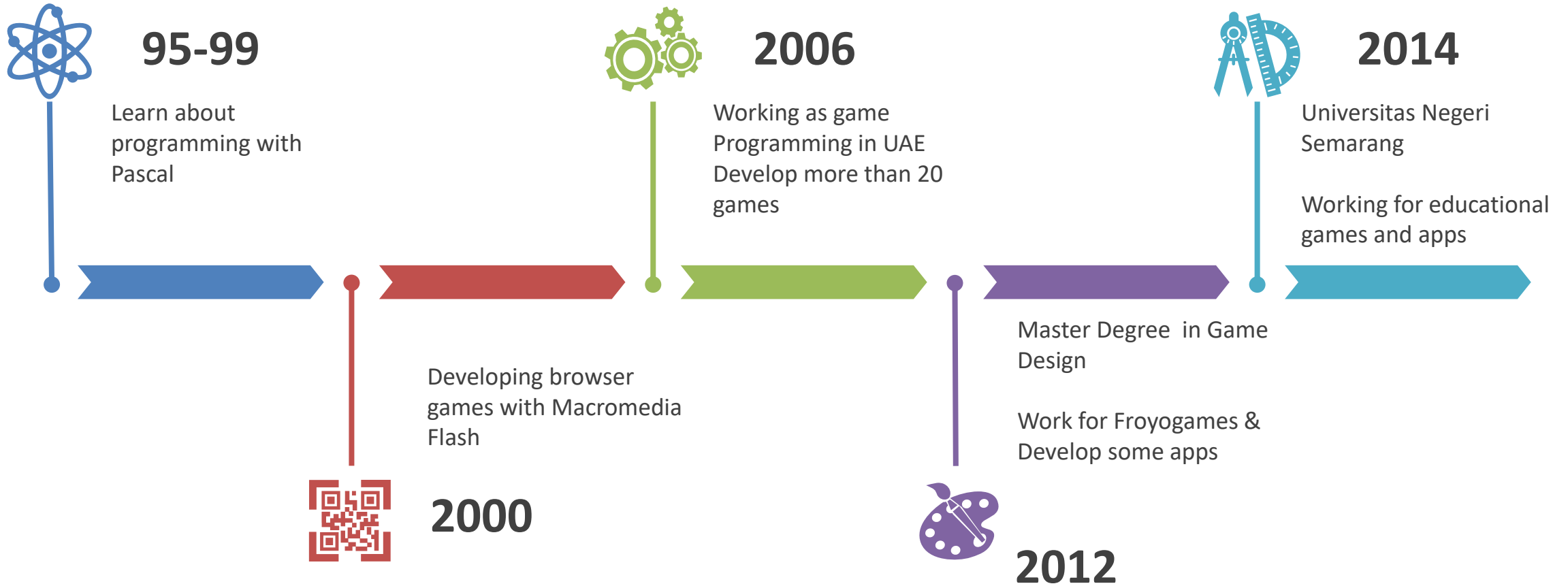




Weaving Heritage with Algorithms: AI for Cultural Preservation

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Personal Background

- Application & Game Programming
- Interactive media, digital heritage, creative tools
- Linking technology with cultural sustainability

***“should AI be used in
cultural preservation?”***





Opportunities

Efficiency & Scalability

AI accelerates digitization and conservation efforts.

Accessibility

Makes cultural heritage available to global audiences.

Empowerment

Provides artisans and educators with supportive tools.

Innovation

Creates new forms of cultural expression without disrupting tradition.



Concerns & Risks (Challenges)

Authenticity

Risk of oversimplification or distortion of cultural meaning.

Dependency

Over-reliance on AI may reduce human creativity.

Ethics

Who owns the data and digital representation of heritage?

Community Involvement

Culture must be preserved with, not just for, communities.



The Intersection of AI and Culture

- AI as a tool for efficiency and creativity
- Cultural heritage as tangible & intangible assets
- The need for digital transformation



- AI is not a replacement, but a **partner**.
- Cultural preservation should **combine technology, tradition, and community wisdom**.
- The key is **responsible use**: AI as a tool, humans as the guardians.



Case Study: D-Batik Application

- Digital tool for batik crafter
- Assists in **creating batik motifs** with Android based mobile phone
- Accessible for non-technical users
- Used by artisans in Semarang



One of the Empowerment Efforts of the Semarang City Industry Office in 2017



the government believes that digital will speed up the process

the problem is that the craftsman can't use graphic software



D-Batik mobile apps

Focus → anyone can use it



D Batik

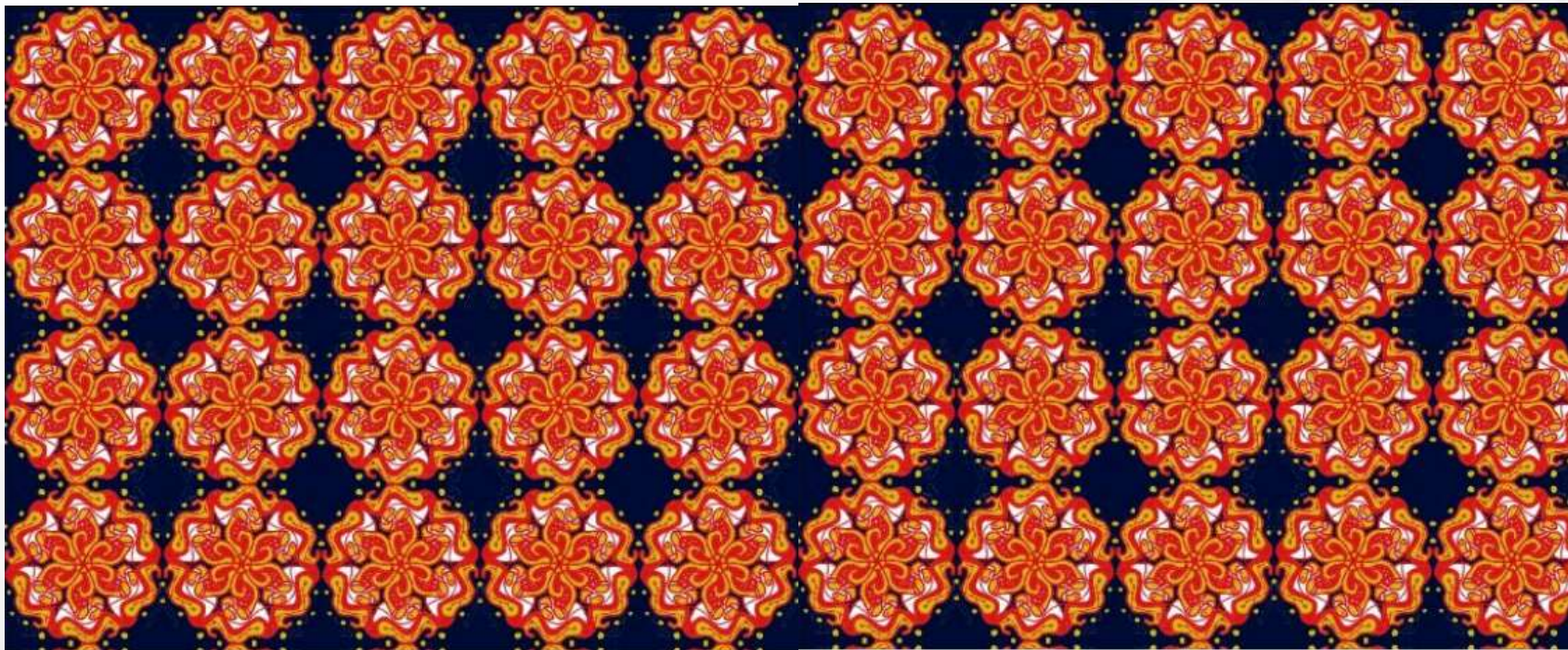
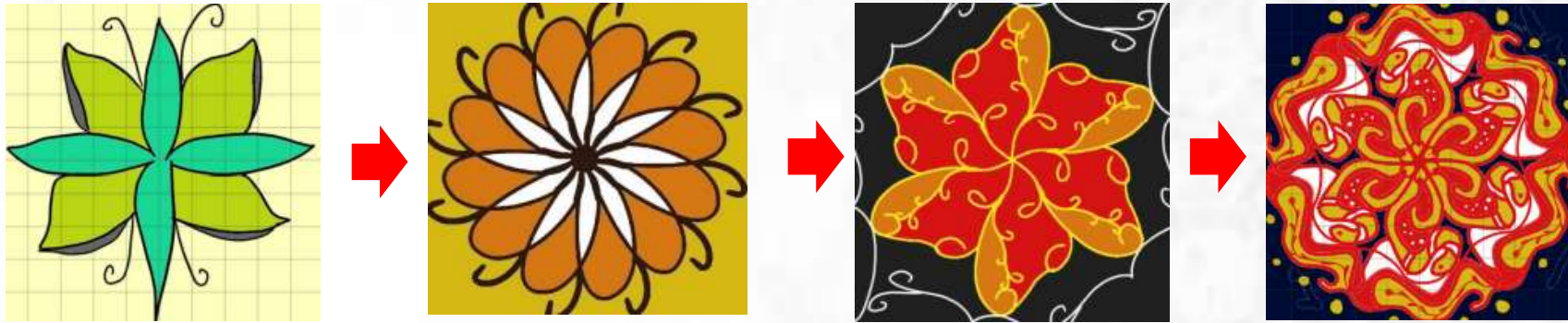
Batik Digital Drawing

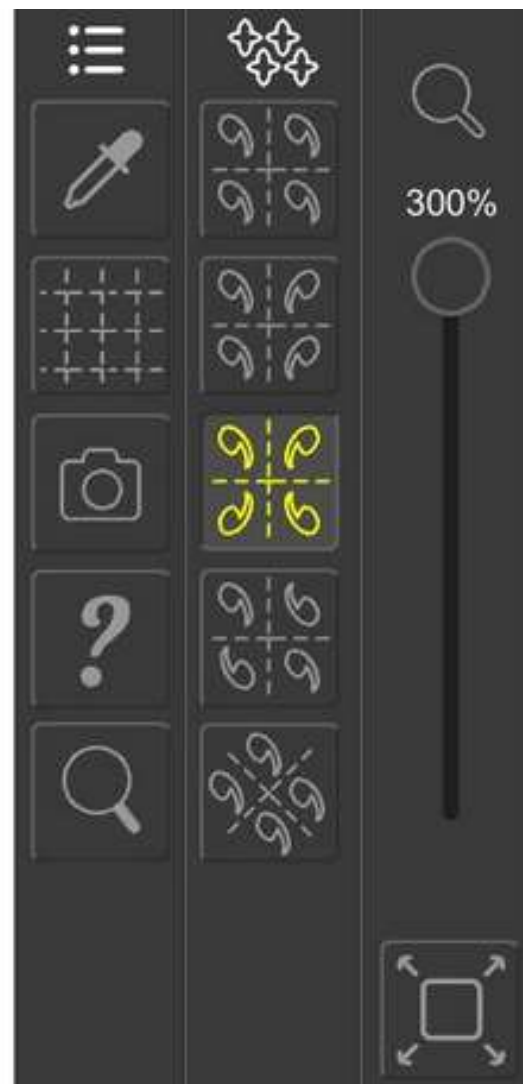
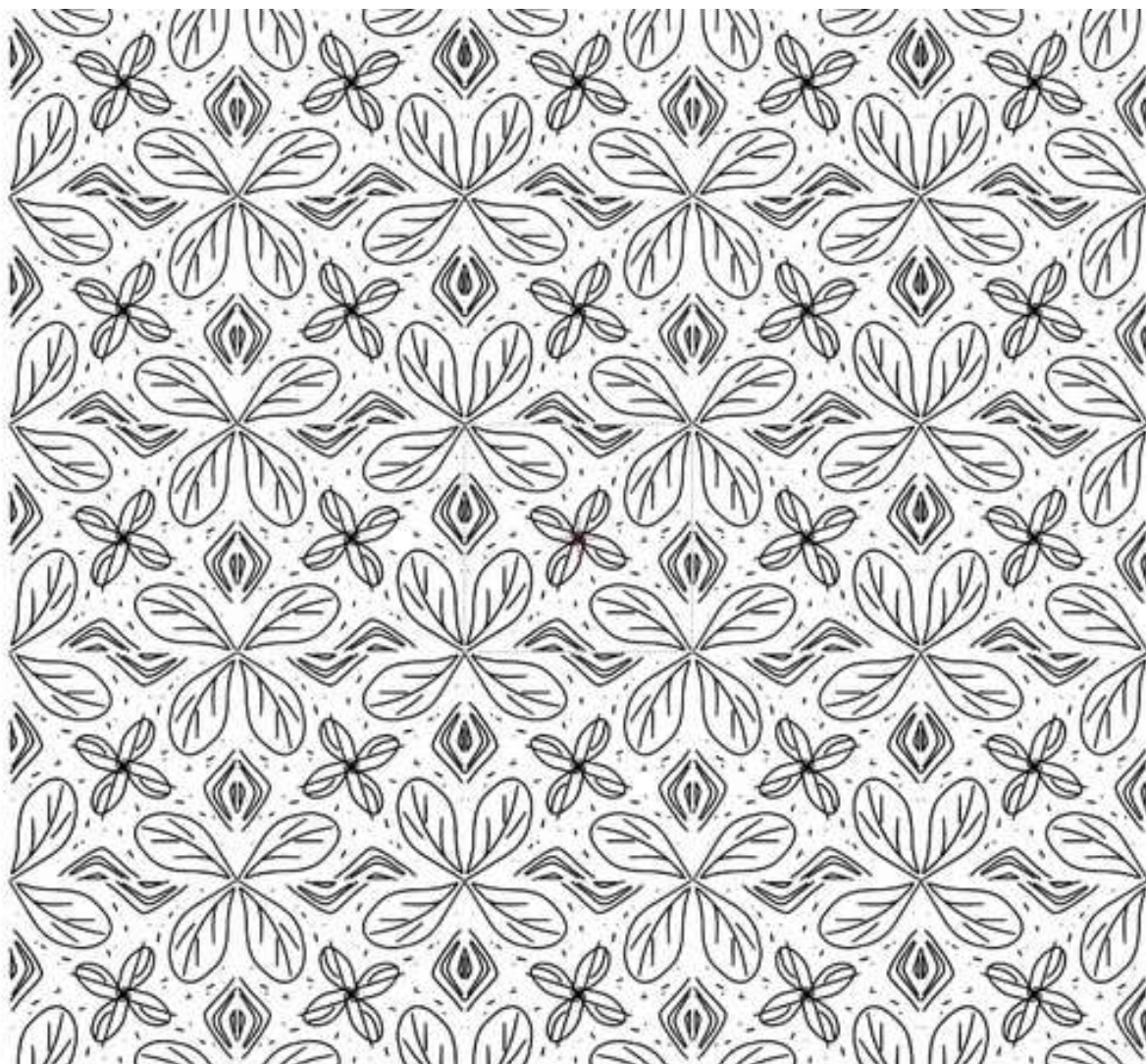


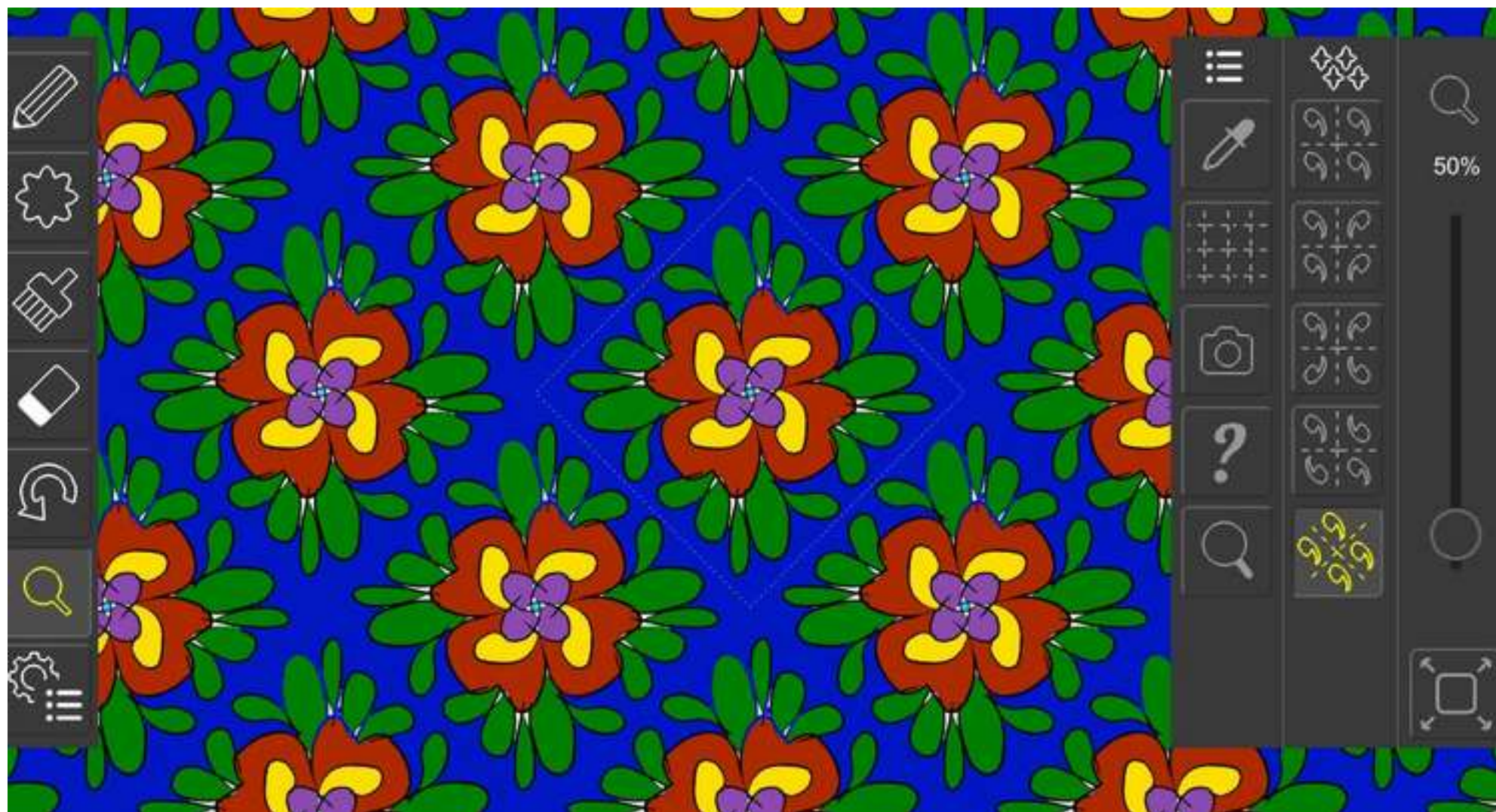


Community Involvement
Government support
Involvement of educational institutions

D-Batik user's learning curve













Further research related to the use of technology in batik

Digital Batik (D-Batik) is integrated with a plastic (3d print) batik stamp feature

Case Study 2: Virtual Heritage

- Virtual tours for cultural sites
- Applications:
 - Borobudur Temple Virtual Tour
 - Lawang Sewu Virtual Tour
 - Nusantara Traditional Houses
- AI + student-designed models





Efficiency through AI

- 3D model optimization
- Faster prototyping of cultural sites
- AI is faster on programming



Work flow



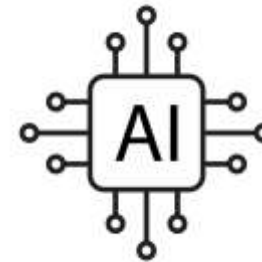
initial research

by lecturers/project leader



3D Modeling

by DKV students



Programming & Prototyping

by AI Agent



Virtual Tour Product



Efficiency through Expertise

Experienced users (e.g., programmers, designers, artisans) can guide AI more effectively.

Strong fundamentals allow faster adaptation and better results.



Broader Impact

- Accessibility for global audiences
- Democratizing cultural appreciation
- Building cultural resilience in the digital era

Challenges and Considerations

- Authenticity vs. digital interpretation
- Avoiding cultural simplification
- Ethical use of AI in heritage projects

Closing Thoughts

- AI as a partner, not replacement?
- Preserving culture through innovation and AI?
- Call for collaboration in digital heritage!



Thanks, Terimakasih ;)

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