THE DEVELOPMENT OF ANDROID-BASED
ART AND DESIGN ONLINE GALLERY PLATFORM

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Abstract

Creative industry within the field of design artwork which involves multimedia
plays an important factor in enhancing economic products. This study aims to
develop an Android-based art and design online gallery platform functioning as
catalogues. This study applied the waterfall method which consists of such stages
as planning, designing, coding, testing, promotion, and maintenance to create the
Artboard application. It was found that the application could be a catalogue
platform and online gallery that can bring together product supply and demand
of goods and services in the fields of art and design to improve the economy of
the artists (including art educators) in the context of the creative economy. It is
implied that such multimedia needs to be more massively developed in order to
contribute to the economic growth.

Keywords: Creative industry, E-Catalogue, E-Gallery.

1. Introduction

The development of the world of technology and the internet has brought in the industrial revolution 4.0 in cyber technology and automation technology [1] thus emerged the technological collaborations that we did not predict before. In the Industrial Revolution 4.0, there are five main pillars of technology, namely: Internet of Things, Big Data, Artificial Intelligence, Cloud Computing and Additive Manufacturing [2]. This is the basis of how life is greatly influenced by the development of new internet-based media technology [3].

In the field of fine arts and design, the use of online media in marketing until finally become a trade transaction of products and works of art to the public has been widely used, especially through a worldwide well-known e-marketplaces such as Saatchi Art [4, 5], Fine Art America, Singulart, Artfinder [6], Artplode, UGallery, Absolute Art, Society6, Etsy [7], and VSUAL. In Indonesia, there are several e-marketplaces in the field of art and design, such as Creasi, Valled.id, Eksisenter, Kreavi, Sribu, and Tees. Not only providing products and works of art, this e-marketplace also provides human resource services in the fields of art and design. During the Covid-19 pandemic, dependence on online shopping and e-payment media is getting higher [8], due to the pandemic as an accelerator of structural changes in consumption and digital transformation in the market [9]. As part of e-commerce [10] the function of E-marketplace [11-13] which refers to credibility-based trust transferred from one source to another is facilitating the collaboration and business interaction between buyers and sellers virtually [14].

However, an art creator is not only judged by the selling value of his artwork or design. Existence in the field of art exhibition is also a fairly high prestige value. Currently the COVID-19 pandemic is increasingly narrowing the space for artists to exhibit art and design works [15]. Therefore, technological innovation breakthroughs were made to provide new opportunities in exhibiting and selling works of art and design services to the general public with android application-based technology in the form of digital catalogues platforms [16, 17] or e-catalogues [18] named Artboard. Digital catalogues are useful for filtering large amounts of information [19]. The innovation of Artboard as an open-source mobile app technology [20] can facilitate art service users and art service providers to meet in one digital space or virtual world [21]. The initial design of Artboard as a digital catalogue is basically an e-marketplace platform which is later expected to be a showroom, education, as well as digital marketing media for products or works of art and design.

This study aims to facilitate the users of the online art and design gallery platform to obtain information about online galleries, events and universities that have visual arts study programs. The main focus of this study is to facilitate the art workers to showcase their work and expertise in making works of art (graphic design, painting, sculpture, photography, videography and animation), as well as making it easier for potential consumers who need these services and products. The e-gallery platform is expected to become a mutually beneficial commercial service model among consumers, art service providers, and service providers for the online Art and Design Gallery Platform.

2. Methods

To create this online gallery application, this study uses the waterfall method [22-24] consisting of planning, designing, coding, testing, promotion, and maintenance stages (Fig. 1). The waterfall method is one of the classic life cycles in software development [25, 26]. This method describes a fairly systematic and sequential approach to software development [27, 28].
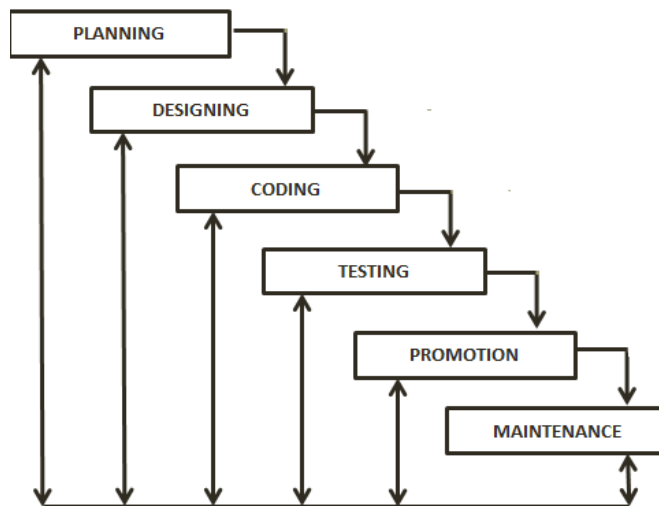

Fig. 1. Scheme of waterfall method stages.

2.1. Planning

The planning stage is carried out through identification and field data collection to obtain the data to be used as a guide in determining the input and output of the art gallery application to be designed [29]. The mentioned data consists of (see Table 1):

Table 1. User interface data and types of items in artboard.

No.	User Interface Data	Types of Items
1	Gallery	Print, design, photography, illustration, packaging, comics, logo, painting, sculpture, graphic arts
2	Identity of gallery	Work title, location, artist, category, work description.
3	Event	Event title, location, category, description, website, email, phone, WhatsApp, Facebook, Instagram.
4	Data of the artist dan designer	Username, description, location, works, phone, WhatsApp, email, Facebook, Instagram.
5	Data of academy of art	Name of the academy, location, category, description, website, phone, WhatsApp, email, Facebook, Instagram.

2.2. Designing

The art gallery application that was developed was named Artboard, and then a logo guide was created (Fig. 2).
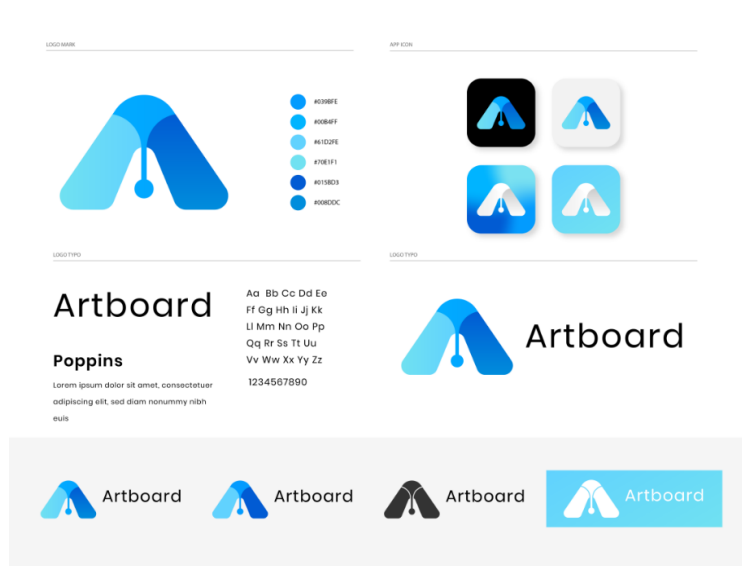

Fig. 2. Artboard logo guide.

Figure 3 shows the steps for creating a flowchart for the "Artboard" art gallery application.
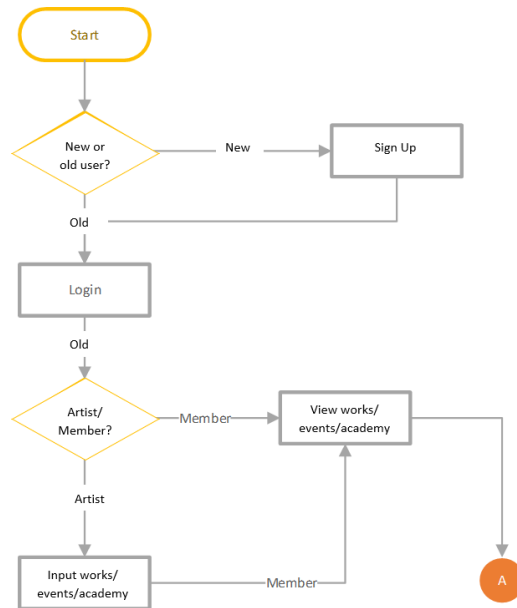

Fig. 3. Flowchart of Artboard app.

The next stage in designing is to create a User Interface (UI) [30]. When the main application page is opened, the Artboard logo splash (Fig. 4) will appear for about 3 seconds and immediately move to the login page (Fig. 5).
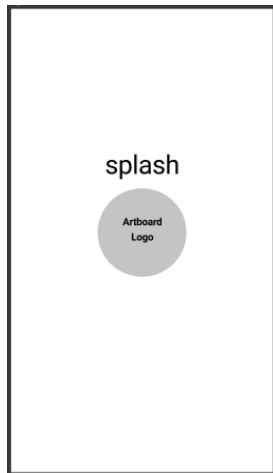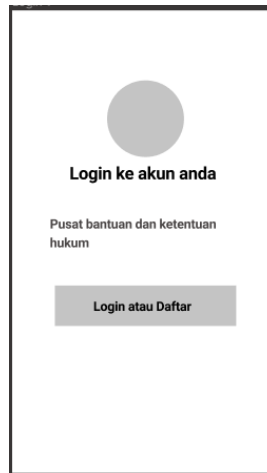

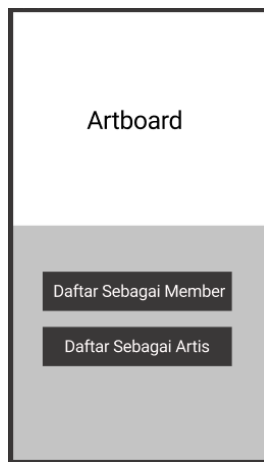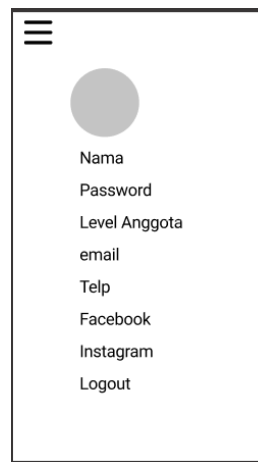**Fig. 4. UI design of Artboard app page.**

Fig. 5. UI Design of Login page on Artboard app.

After logging in, the next step is registration (Fig. 6a) and filling out a user identity profile consisting of name, account password, member level, email, phone number, and social media accounts (Facebook and Instagram) as shown in Fig. 6b.

(a)   (b)

Fig. 6. (a) UI design for the account registration page and (b) profile fulfilment on the Artboard app.

When the users have finished filling in the identity on the application, they will enter the home page which contains a display of gallery photos, artists and designers, events, and art academies (Fig. 7).
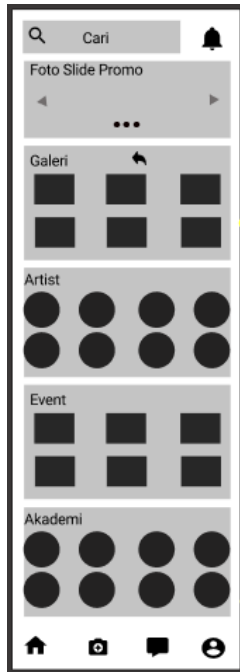
Fig. 7. Home page UI design on Artboard app.

The gallery page contains video and photo content, including the title of the work, comments, bookmarks, share links, and the upload date of the work (Fig. 8). Figure 9 shows the classification of profiles and works of artists and designers according to their respective expertise qualifications, such as painting, sculpture, photography, graphic arts, illustration, comics, typography, logos, and graphic design.
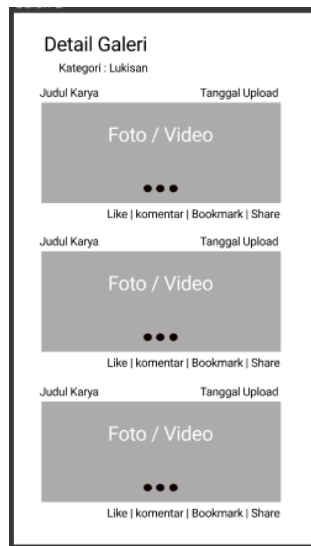

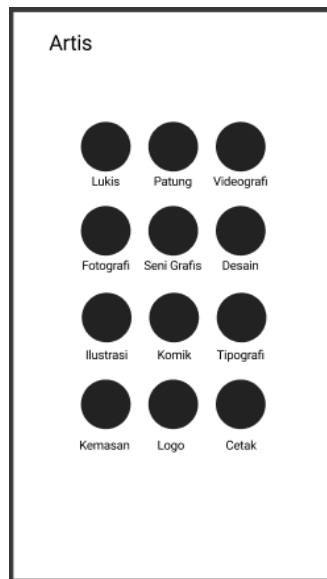**Fig. 8. UI design of the work gallery page on the Artboard app.**

**Fig. 9. UI design of page containing profiles and works of
artists/designers in the fields of art and design in the Artboard app.**

Information related to the art and design events is displayed on the event page. It contains the title and complete information regarding the organization of the event (Fig. 10). The implementation of art education is also included in the Artboard application which contains profiles of these art institutions (Fig. 11).
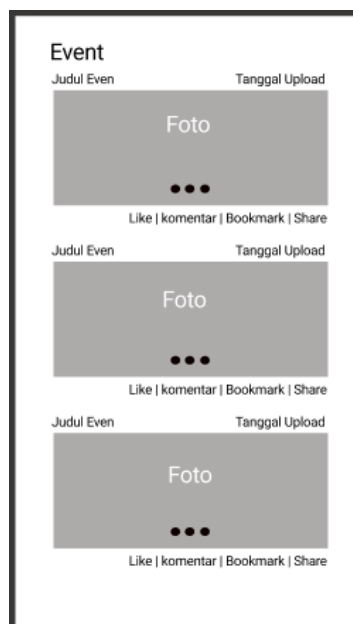

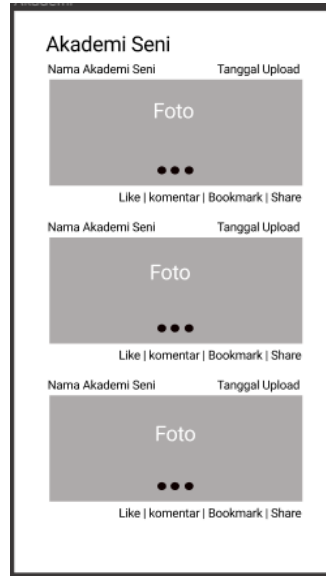**Fig. 10. UI page design for art and design events in the Artboard app.**

**Fig. 11. UI page design of art and design schools,
academy, institutes, and universities in the Artboard app.**

The database design is used to create the Artboard application, which will later be used to store all data in the form of text, images, and videos. Figure 12 is an example of a database on the member page.

Member	
Field	Type
P id Auto Increment	int(11)
idjenismember Allow Null	int(11)
nama *Allow Null*	*varchar(60)*
username *Allow Null*	*varchar(30)*
email *Allow Null*	*varchar(60)*
telp *Allow Null*	*varchar(20)*
password *Allow Null*	*varchar(32)*
facebook *Allow Null*	*varchar(50)*
instagram *Allow Null*	*varchar(50)*
tgldaftar *Allow Null*	*datetime*
tglupade *Allow Null*	*datetime*
lastlogin *Allow Null*	*datetime*
status *Allow Null*	*enum('Aktif', 'Non Aktif')*

Fig. 12. Artboard app login database.

   The coding and assembly stages of graphic materials are carried out after the flowchart design, interface (UI) design, and database design are completed. Figure 13 is an example of coding on the member page.
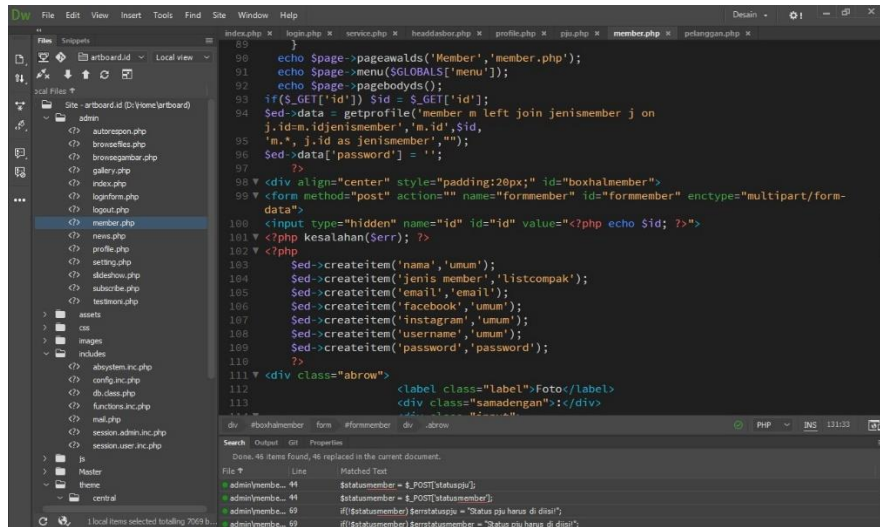

Fig. 13. Member page coding in the Artboard app.

3. Results and Discussion

The online gallery application called Artboard is designed in the form of a catalogue which becomes a digital space for artists to meet the art lovers, the art industry and buyers, as well as information on art institutions that can be accessed by the general public at large. How the Artboard application works can be freely downloaded on Google Play (Fig. 14) and is open source, so anyone can access the information contained in the application as long as they are logged in and registered, Figs. 15(a) and (b).
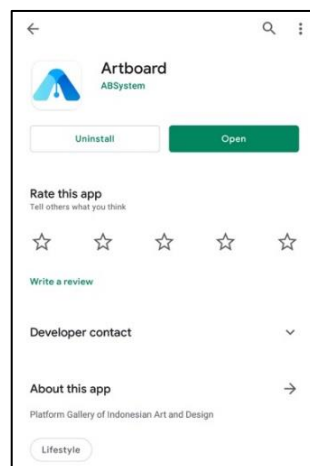

Fig. 14. Artboard app in Google Play.
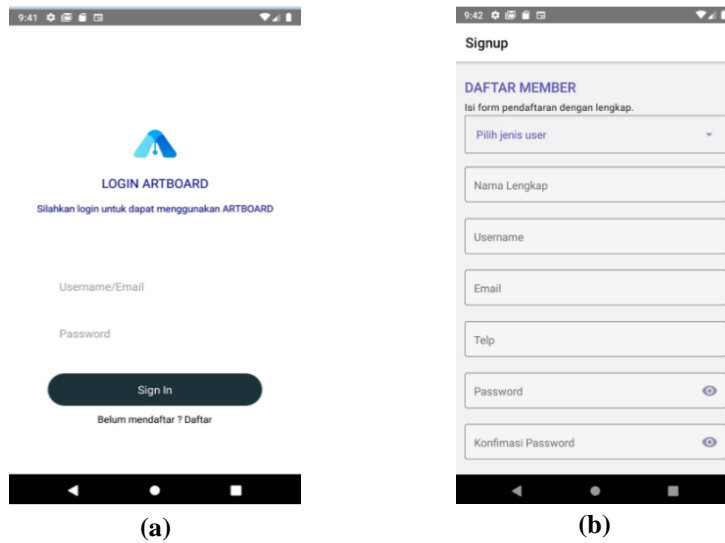
Fig. 15. (a) Login menu, (b) Registration menu.

If the users have registered, they will be able to choose special menus according to their interests and needs. The users can choose at least four main menus and if they explored further, more detailed information will appear, which is the content of the main menu. Artist menu, Fig. 16(a) and (b), Gallery menu, Fig. 17. the academy menu and the event menu are shown in Fig. 18 and 19 respectively.

Fig. 16. (a) Artist menu, (b) Content example of artist menu.

Fig. 17. Gallery menu.
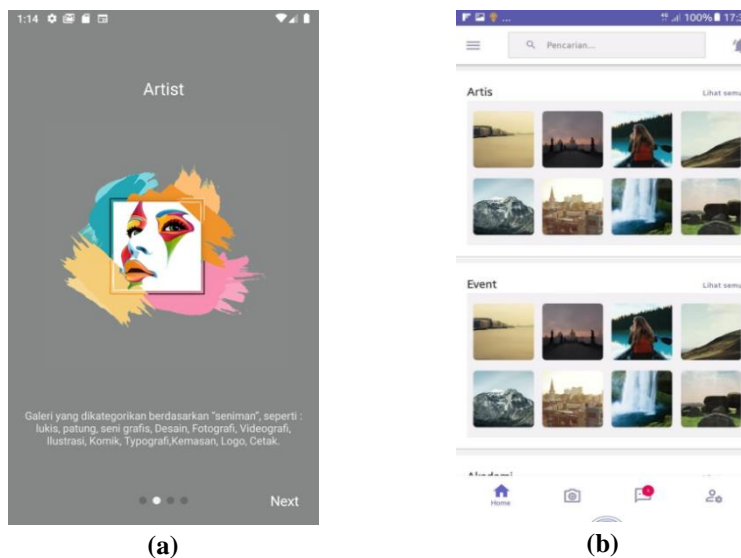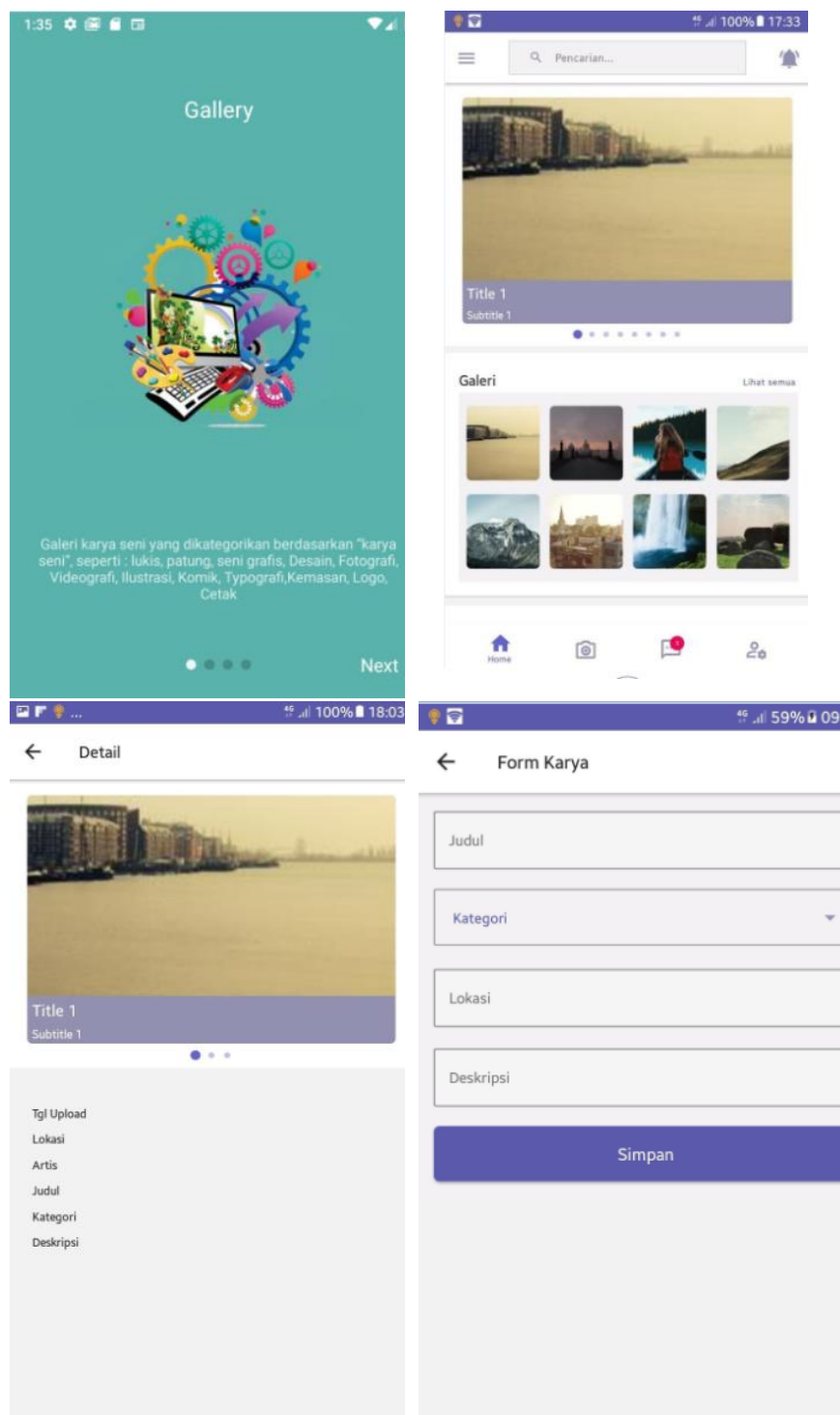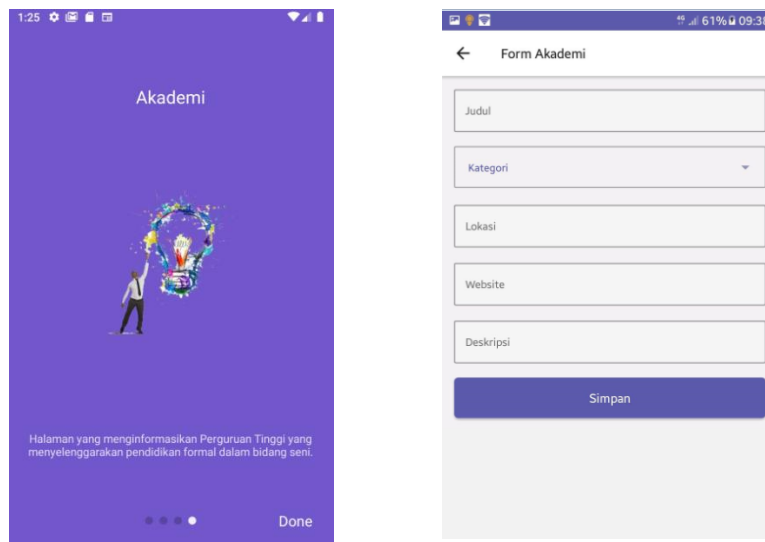
Fig. 18. Academy menu.
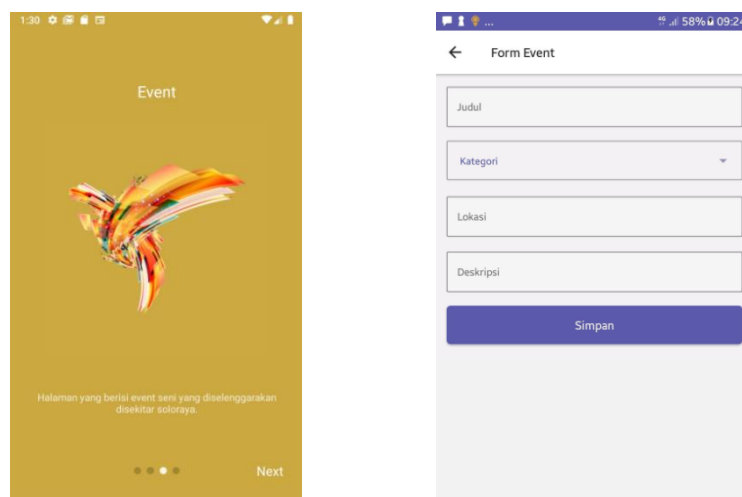
Fig. 19. Event menu.

The Gallery menu provides art and design products such as paintings, sculptures, ceramics, graphics, furniture, batik fabrics, woven fabrics, and audio-visual works. This menu functions as a digital catalogue where users can search for works according to existing categories. The artist menu also functions as a digital catalogue that presents biodata of artists and designers in Indonesia who have joined Artboard. This is Artboard's effort to introduce art and design creators to the public. The Event menu shows events to be taken place in Indonesia. Organizers can promote their activities to be informed to the wider community. The Academy menu is Artboard's effort to inform the public about art and design study institutions at the junior high school, senior high school, and college or university levels. Through this menu, various information related to agency profiles, curriculum, activity programs, and

even scholarship offers will be obtained. It has been proven that an application serving as a catalogue needs to promote user friendliness [31-33].

Artboard was developed in mid-2021. As of now, it is still in the stage of evaluation although it is already available on Play store. In the field of art, there is also a similar application but more focused on performing arts, namely Senipedia. Like Artboard, Senipedia encapsulates the functions of e-catalogue and e-gallery into one. Developed in 2019, to date, Senipedia has pretty much covered performing arts activities throughout Indonesia. This makes the existence of Artboard is necessary since there is still no application that summarizes comprehensive information about art and design. In addition, in the future, Artboard will also function as e-commerce to facilitate buying and selling transactions which is possibly improve the economy of artists (including art educators) in the context of the creative economy as studies have shown that creative industry is one of the important sectors in the economic growth [34, 35].

4. Conclusion

Artboard is a digital catalogue platform that is expected to be a medium for promotion and information for visual artists, designers, and the wider community with an interest and need for visual art or design. This application can be freely and easily downloaded since the file size is relatively small. In addition, the user interface (UI) design is easy to understand and use. The existence of Artboard is expected to complement the development of the creative industry, especially in the fields of art and design.

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