

## User Interface Design of West Java's Intangible Cultural Heritage Website using User Centered Design

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### Abstract.

*Indonesia is a country that has a very diverse cultural wealth. Intangible cultural heritage in Indonesia is transmitted from generation to generation. Balai Pelestarian Nilai Budaya Jawa Barat (BPNB) or The West Java Cultural Values Preservation Centre located in Bandung keeps the preservation of acculturation culture. BPNB only using Microsoft Access application to document cultural heritage in West Java. This is very unfortunate, because information technology is actively advancing until this day but the preservation of local intangible cultural heritage especially in West Java is not accessible to the public. There is also a chance that younger generation in Indonesia wouldn't even know a few things about intangible cultural heritage. This research is conducted to create an user interface design of West Java's intangible cultural heritage website using user centred design method. The result of the interface design is as seen fit by the head of BPNB and already be developed so that BPNB can be easily update and store the records of the West Java's intangible cultural heritage and the public can also see the list.*

## INTRODUCTION

Indonesia is a country that has a very diverse cultural wealth. Indonesia consists of various cultures, regional languages, races, ethnicities, religions and beliefs. Cultural diversity in Indonesia is something that cannot be found, besides the culture of ethnic groups, it also consists of various regional cultures which are a meeting of various ethnic groups in the area [1]. Based on social anthropology, Koentjaraningrat divides culture into three forms, ideal culture consisting of ideas, norms and rules; cultural activities called social systems, in the form of human patterned behavior in interacting; and culture that is a concrete result of all human activities [2]. The “intangible cultural heritage” means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of the communities cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to the environment, the interaction with nature and the history, and provides the communities with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity [3].

The essence of intangible values is mainly the meanings attributed to things, which are produced by people through the interactive process with nature. While those meanings can be both “functional” and “expressive”, the things produced and affected by can be both tangible and intangible properties. Accordingly, the intangible cultural heritage acts as both “producing” and

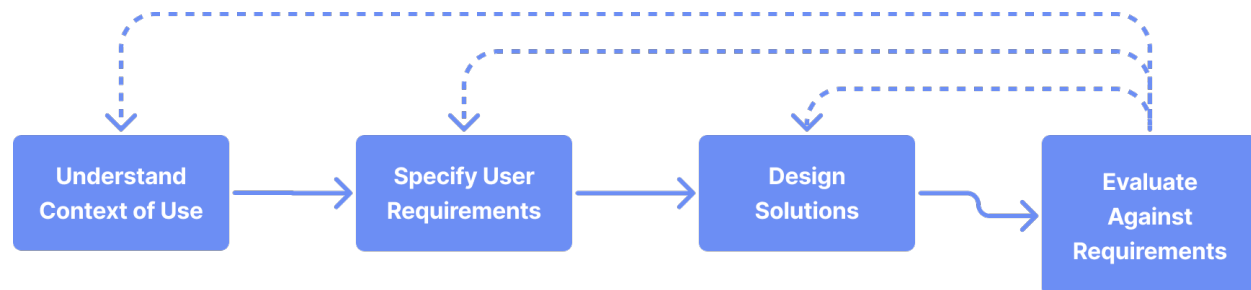
the “produced”. Today, most of the problems regarding the conservation of historic environments are principally caused by the imbalance between tangible and intangible features handled in conservation studies. Although conservation studies have made progress in the last decades, the study of the tangible features still dominates. Disregarding the transmission process of intangible values, the transformation process of historic environments has been tackled in conservation studies, mainly focusing on tangible features. At the UNESCO convention in 2003, country was given the freedom to implement cultural heritage values [4].

The state must carry out a national inventory, which means cataloging, registering to identify, document and protect the heritage of cultural values [4].

BPNB located in Bandung keeps the preservation of acculturation culture. BPNB has four working areas, there are: DKI Jakarta, Banten, Lampung and West Java. Preservation of intangible cultural heritage includes aspects: Tradition, Belief, Art, Film, History. BPNB only using Microsoft Access application to document intangible cultural heritage in West Java. This is very unfortunate, because information technology is actively advancing until this day but the preservation of local intangible cultural heritage especially in West Java is not accessible to the public. Information technology and communication is seen as the best way to preserve and share the information about West Java’s intangible cultural heritage. The Head of the Service Unit at BPNB is very enthusiastic about this website program, besides being able to help document cultural works with a database, the website also can be used to share information about intangible culture of West Java to the public.

## RESEARCH METHOD

The website is designed using User Centered Design method. User Centered Design (UCD) is a multidisciplinary design approach based on the active involvement of users to improve the understanding of user and task requirements, and the iteration of design and evaluation [5]. There is a spectrum of ways in which users are involved in UCD but the important concept is that users are involved one way or another. For example, some types of UCD consult users about user needs and involve the users at specific times during the design process; typically during requirements gathering and usability testing. At the opposite end of the spectrum there are UCD methods in which users have a deep impact on the design by being involved as partners with designers throughout the design process [6]. The UCD method itself has four stages which can be seen in Figure 1.



**FIGURE 1.** Four Stages of UCD Method

### 1. Understand Context of Use

At this stage, some user research is carried out in order to find out more about who is the target, what problems users face, and in what situations this application is used. Understanding the

context of use also determines why the system was built and how to build an intangible cultural heritage processing system. The target of the users of this program is the Service Unit of the BPNB which aims to introduce the wider community to the Cultural Value Heritage of BPNB so that this intangible cultural heritage can be preserved and known to many people.

2. Specify User Requirements

After knowing and understanding the results of the user research that has been done, the next step is to determine user needs and the goals to be achieved. The research team conducted surveys and interviews with users of the website.

3. Design Solutions

The next process is to design a solution from user requirements which has been described in the previous process, this design process has a several stages starting from wireframe, prototype to complete design. The designer involves the user in making the prototype model and discussing so that the design fits the user.

4. Evaluation Against Requirements

The last stage is user testing in using a website prototype that has been designed in such a way. The results of feedback from users is an illustration of what can be improved again so that it suits the user. Testing is done through Remote Moderated Usability Testing. In the

testing session, a researcher asks the tester to perform a task, using one or more specific user interfaces. While the participants completed each task, the researcher observed the participants' behaviour and listened to the feedback.

A great user interface must be accessible to all people. Accessibility basically means that people with disabilities can use a product. More specifically, accessibility is making user interfaces perceivable, operable, and understandable for people with a wide range of abilities. It encompasses all disabilities, or functional limitations, including visual, auditory, physical, speech, cognitive, and neurological disabilities. Accessibility also makes products more usable by people in a wide range of situations [7]. There are 6 principles of an effective user interface design, there are as listed below [8].

1. Clarity

In user interface design, the term clarity means using recognizable features and elements that are intuitive to interact with. This is especially important for interactive elements such as buttons and navigation menus.

2. Familiarity

Usability, i.e. how easily a user interacts with a product or a website, is closely related to familiarity. Users depend on elements and interfaces acting in a way that's familiar to their digital experience. Jakob's Law states that "Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know."

3. User Control

Place users in control of the interface. Jakob Nielsen explains why this is important: "Users often choose system functions by mistake and will need a clearly marked 'emergency exit' to leave the unwanted state without having to go through an extended dialogue. Support undo and redo." This basically means giving users different options to go back a step when the user feel that the user made a mistake.

4. Hierarchy

Strong visual hierarchy is a core design principle of a successful user interface. It consists of arranging visual elements in a way that explains the level of importance of each element and guides users to take the desired action.

5. Negative Spaces  
Negative space makes important elements pop and stand out.
6. Flexibility  
A multimodal user interface allows users to interact with the system through multiple modes, such as speech, text touch, vision. Some examples of a flexible UI design include shortcuts for performing frequently used steps with a single click, advanced search features, and incorporating filter bars

## IMPLEMENTATION

BPNB does not yet have a complete database that is easy to search for data or provide information to ministries, or to the general public in an effort to preserve intangible cultural heritage. Therefore, this website is used as a database to help document intangible cultural heritage in West Java, and also to share the information to the public. The research team conducted a literature study, journal literature to obtain material on research related to intangible cultural heritage and also the research team paid a visit to Bandung to conduct interviews and explore things about intangible cultural heritage. The data and information obtained from the research include that the BPNB has four working areas, namely: DKI, Banten, Lampung and West Java. Besides that, the research team obtained information that the heritage of cultural values can be classified or categorized into 5 categories with each element as determined by UNESCO, which can be seen in Table 1.

**TABLE 1.** Categories and Elements of Heritage Cultural

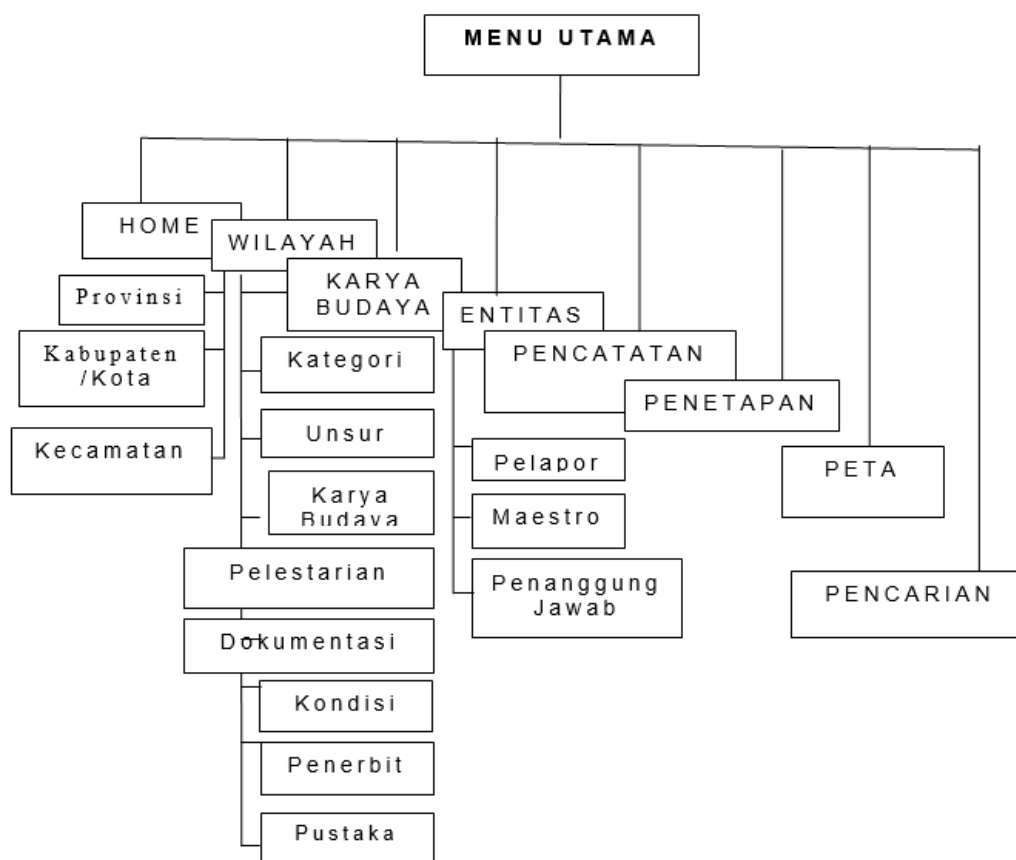
Values	Num	Category	Element
1.		Oral Traditions and Expressions	Language, poetry, folklore, mantras, prayers, folk songs, proverbs, folk riddles, lenong.
2.		Performing Arts	Dance arts, sound arts, music arts, theater arts, motion arts.
3.		Social Practices, Rituals and Festive Events	Traditional ceremonies, customary laws, systems of social organization, traditional kinship systems, economic systems,
4.		Knowledge and Practices Concerning Native and The Universe	Knowledge of nature, cosmology, traditional medicine.
5.		Traditional Craftsmanship	Lenong.Traditional technology, traditional architecture, traditional clothing, traditional crafts, traditional culinary, traditional transportation, traditional weapons, traditional celebrations.

The next step is to specify user requirements. Features, functions, and data that help users solve problems are built at this stage. Furthermore, at this stage all data is collected and described one by one which is needed, and which is not needed. The website is created as a dynamic website, so there is a several account types that can access it; the public that can only see the data, the the head of the BPNB's account that can print the data, and admin that can update and print the data. The data needed to display the location of the map of intangible cultural heritage values, the data needed is provincial, district / city sub-district data. In addition to displaying data on cultural works, it is necessary to collect data on cultural works which include data: categories, elements, preservation, documentation, conditions, publishers and libraries. In addition, data collection is carried out on the reporter, the person in charge and the maestro of cultural works, as well as the recording and determination of cultural works. Apart from guest users, there are two other types of accounts on this website that can be accessed by login to the created account, which are

listed below.

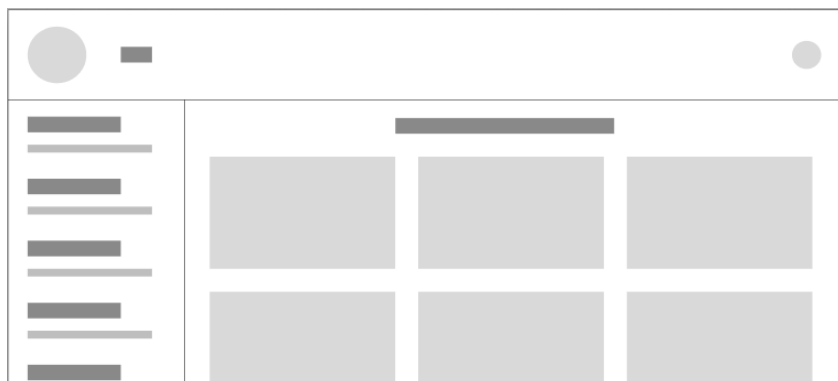
1. Head, which user can create accounts for staff users but can only view data related to cultural works.
2. Staff, which user can input, change, and delete data related to cultural works.

There are several steps in design solution phase. First one is to create the navigation map. The designer creates a navigation map or a dialog menu design program so that the manufacture of wireframes to high fidelity prototypes can operate in a directed manner. Dialog menu design program describes how the program interface created. The program interface includes the main menu, the main menu consists of sub-menus and each sub-menu has more detailed menus. The design of the program menu dialog can be seen in Figure 2.



**FIGURE 2.** The West Java's Intangible Cultural Heritage Website Navigation Map

The next process in UCD phase is to create a wireframe. Wireframe is a basic model design of the website or application to be built. Wireframe is created after making the navigation map to get an idea of the design that must be made for each page and applied to this website. The website is more like a dashboard-type website; therefore, the research team only need to create few wireframes because the rest of the page look just the same. The only differentiate is the content of the page. Figure 3 is the wireframe that is built.

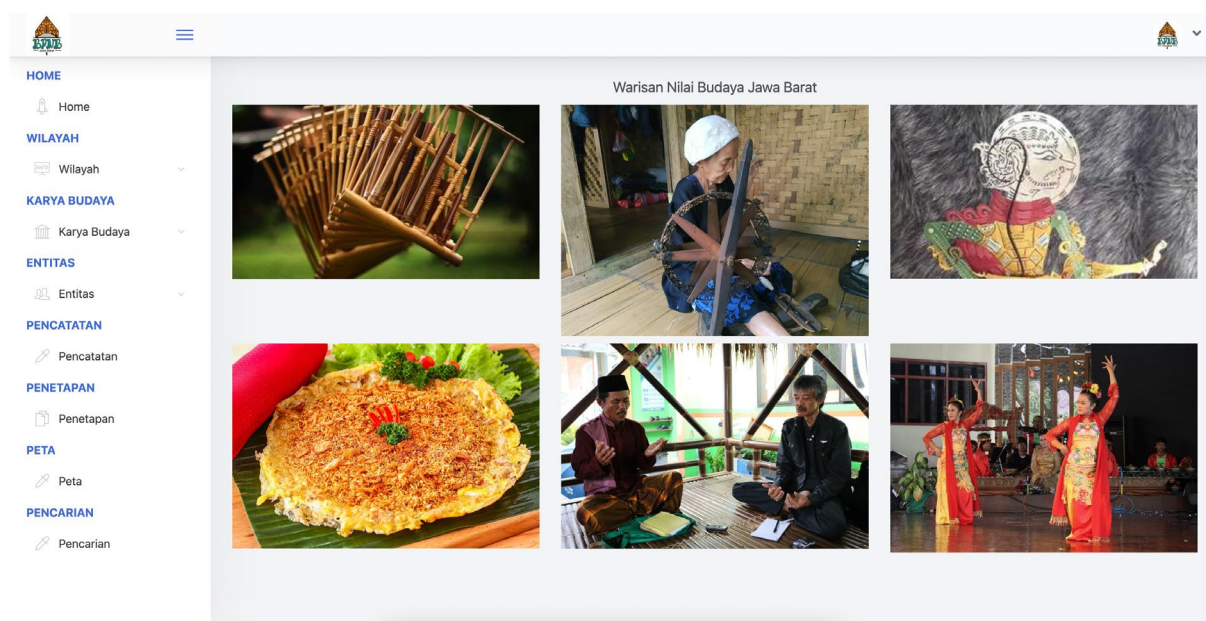


**FIGURE 3.** The West Java's Intangible Cultural Heritage Wireframe Design

The wireframe is seen fit to the requirements. So, the next step is to create the high-fidelity prototype based on the wireframe design. On the homepage, there is the text "Inheritance of West Java Cultural Values" accompanied

by several pictures of intangible cultural heritage, an example of the display can be seen in Figure 4. The available menus are listed below.

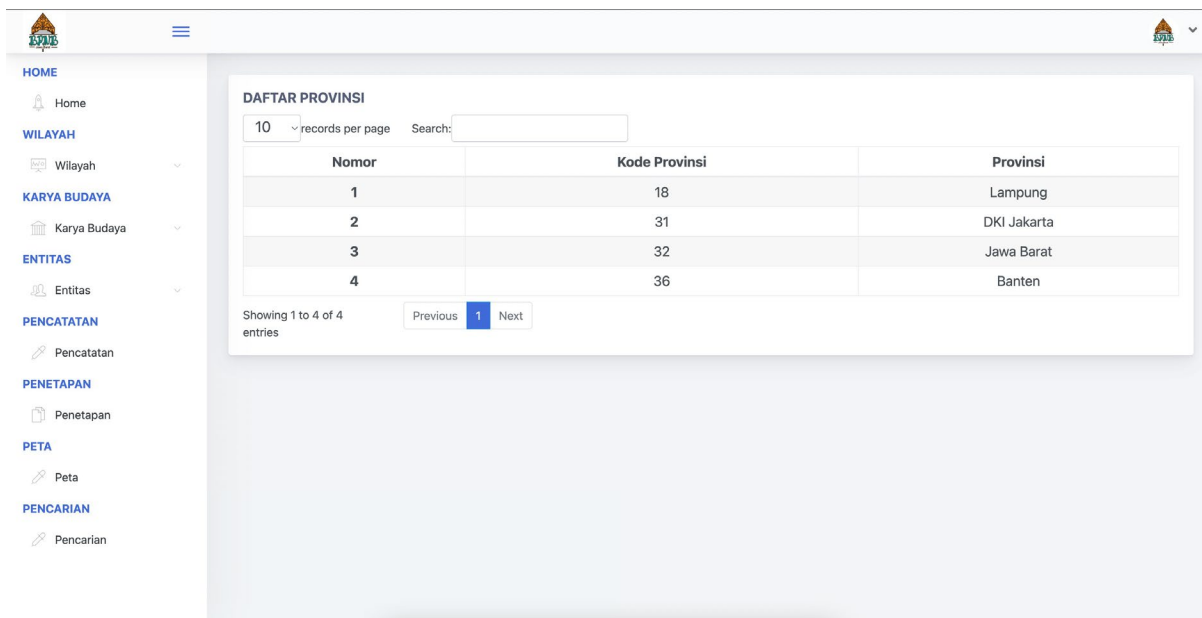
#### 1. Homepage



**FIGURE 4.** Home View

## 2. Region Menu

Consists provincial data page, regency/city data page, and district data page.



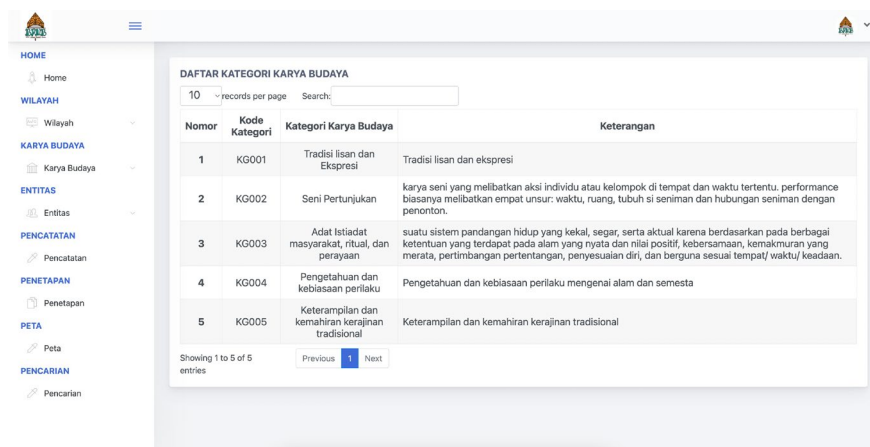
The screenshot shows a web application interface with a sidebar menu on the left and a main content area. The sidebar menu includes options like HOME, WILAYAH, KARYA BUDAYA, ENTITAS, PENCATATAN, PENETAPAN, PETA, and PENCARIAN. The main content area displays a table titled 'DAFTAR PROVINSI' (Province List). The table has three columns: 'Nomor' (Number), 'Kode Provinsi' (Province Code), and 'Provinsi' (Province). The table lists four provinces: Lampung (18), DKI Jakarta (31), Jawa Barat (32), and Banten (36). Below the table, there is a pagination control showing 'Showing 1 to 4 of 4 entries' and buttons for 'Previous', '1', and 'Next'.

Nomor	Kode Provinsi	Provinsi
1	18	Lampung
2	31	DKI Jakarta
3	32	Jawa Barat
4	36	Banten

FIGURE 5. Region View

## 3. Cultural Works Menu

Consists cultural works category data page, elements of cultural works data page, cultural works data page, preservation data page, documentation data page, condition data page, publisher data page, and library data page.



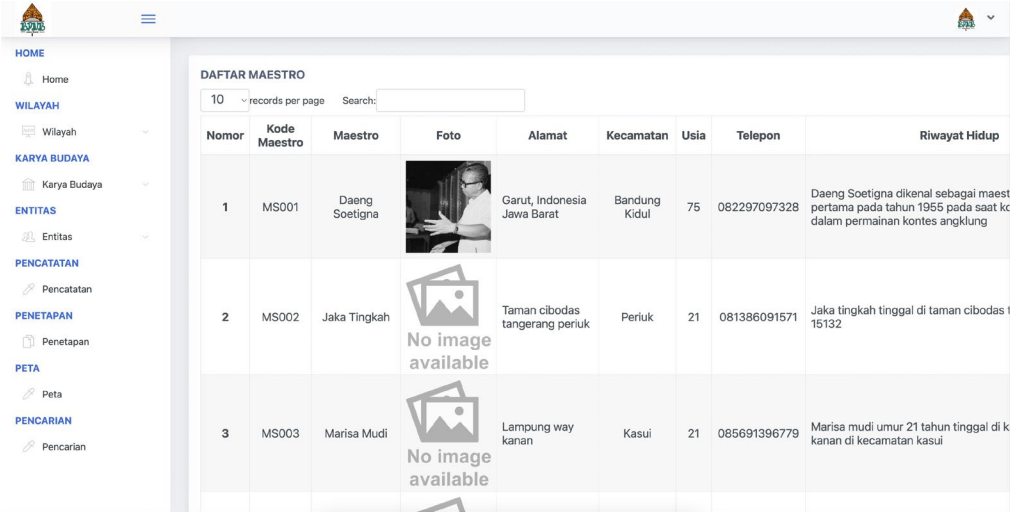
The screenshot shows a web application interface with a sidebar menu on the left and a main content area. The sidebar menu includes options like HOME, WILAYAH, KARYA BUDAYA, ENTITAS, PENCATATAN, PENETAPAN, PETA, and PENCARIAN. The main content area displays a table titled 'DAFTAR KATEGORI KARYA BUDAYA' (Cultural Works Category List). The table has four columns: 'Nomor' (Number), 'Kode Kategori' (Category Code), 'Kategori Karya Budaya' (Cultural Works Category), and 'Keterangan' (Description). The table lists five categories: Tradisi lisan dan Ekspresi (KG001), Seni Pertunjukan (KG002), Adat Istiadat masyarakat, ritual, dan perayaan (KG003), Pengetahuan dan kebiasaan perilaku (KG004), and Keterampilan dan kemahiran kerajinan tradisional (KG005). Below the table, there is a pagination control showing 'Showing 1 to 5 of 5 entries' and buttons for 'Previous', '1', and 'Next'.

Nomor	Kode Kategori	Kategori Karya Budaya	Keterangan
1	KG001	Tradisi lisan dan Ekspresi	Tradisi lisan dan ekspresi
2	KG002	Seni Pertunjukan	karya seni yang melibatkan aksi individu atau kelompok di tempat dan waktu tertentu, performance biasanya melibatkan empat unsur: waktu, ruang, tubuh si seniman dan hubungan seniman dengan penonton.
3	KG003	Adat Istiadat masyarakat, ritual, dan perayaan	suatu sistem pandangan hidup yang kekal, segar, serta aktual karena berdasarkan pada berbagai ketentuan yang terdapat pada alam yang nyata dan nilai positif, kebersamaan, kemakmuran yang merata, pertimbangan pertimbangan, penyesuaian diri, dan berguna sesuai tempat/ waktu/ keadaan.
4	KG004	Pengetahuan dan kebiasaan perilaku	Pengetahuan dan kebiasaan perilaku mengenai alam dan semesta
5	KG005	Keterampilan dan kemahiran kerajinan tradisional	Keterampilan dan kemahiran kerajinan tradisional

FIGURE 6. Cultural Works View

## 4. Entity Menu

Consists reporting data page, maestro data page, person in charge data page.




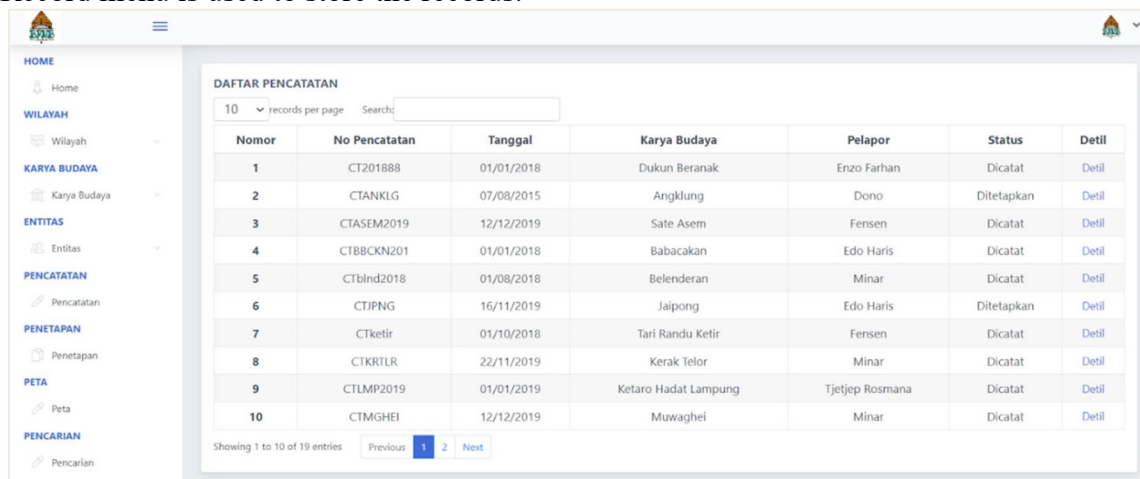
Nomor	Kode Maestro	Maestro	Foto	Alamat	Kecamatan	Usia	Telepon	Riwayat Hidup
1	MS001	Daeng Soetigna		Garut, Indonesia Jawa Barat	Bandung Kidul	75	082297097328	Daeng Soetigna dikenal sebagai maest pertama pada tahun 1955 pada saat kc dalam permainan kontes angklung
2	MS002	Jaka Tingkah	No image available	Taman cibodas tangerang periuk	Periuk	21	081386091571	Jaka tingkah tinggal di taman cibodas 1 15132
3	MS003	Marisa Mudi	No image available	Lampung way kanan	Kasui	21	085691396779	Marisa mudi umur 21 tahun tinggal di k kanan di kecamatan kasui

FIGURE 7. Entity View



## 5. Record Menu

Record menu is used to store the records.

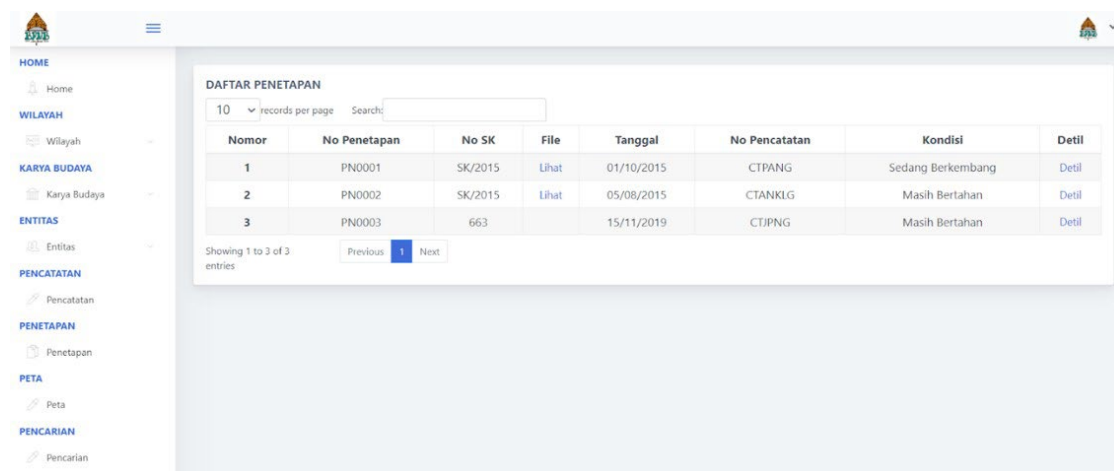


Nomor	No Pencatatan	Tanggal	Karya Budaya	Pelapor	Status	Detil
1	CT201888	01/01/2018	Dukun Beranak	Enzo Farhan	Dicatat	<a href="#">Detil</a>
2	CTANKLG	07/08/2015	Angklung	Dono	Ditetapkan	<a href="#">Detil</a>
3	CTASEM2019	12/12/2019	Sate Asem	Fensen	Dicatat	<a href="#">Detil</a>
4	CTBCKN201	01/01/2018	Babakan	Edo Haris	Dicatat	<a href="#">Detil</a>
5	CTblnd2018	01/08/2018	Belenderan	Minar	Dicatat	<a href="#">Detil</a>
6	CTJPNG	16/11/2019	Jaipong	Edo Haris	Ditetapkan	<a href="#">Detil</a>
7	CTketir	01/10/2018	Tari Randu Ketir	Fensen	Dicatat	<a href="#">Detil</a>
8	CTKRTL	22/11/2019	Kerak Telor	Minar	Dicatat	<a href="#">Detil</a>
9	CTLMP2019	01/01/2019	Ketaro Hadat Lampung	Tjetjep Rosmana	Dicatat	<a href="#">Detil</a>
10	CTMGHEI	12/12/2019	Muwaghei	Minar	Dicatat	<a href="#">Detil</a>

FIGURE 8. Recording View

## 6. Assignment Page

Assignment page is used to see the records of the intangible cultural heritage when its assigned.

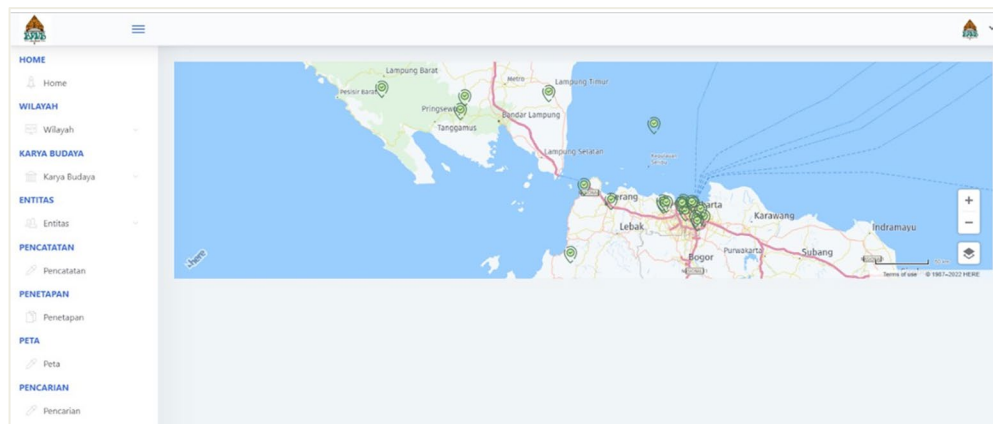


Nomor	No Penetapan	No SK	File	Tanggal	No Pencatatan	Kondisi	Detil
1	PN0001	SK/2015	<a href="#">Lihat</a>	01/10/2015	CTPANG	Sedang Berkembang	<a href="#">Detil</a>
2	PN0002	SK/2015	<a href="#">Lihat</a>	05/08/2015	CTANKLG	Masih Bertahan	<a href="#">Detil</a>
3	PN0003	663		15/11/2019	CTJPNG	Masih Bertahan	<a href="#">Detil</a>

FIGURE 9. Assignment View

## 7. Map Page

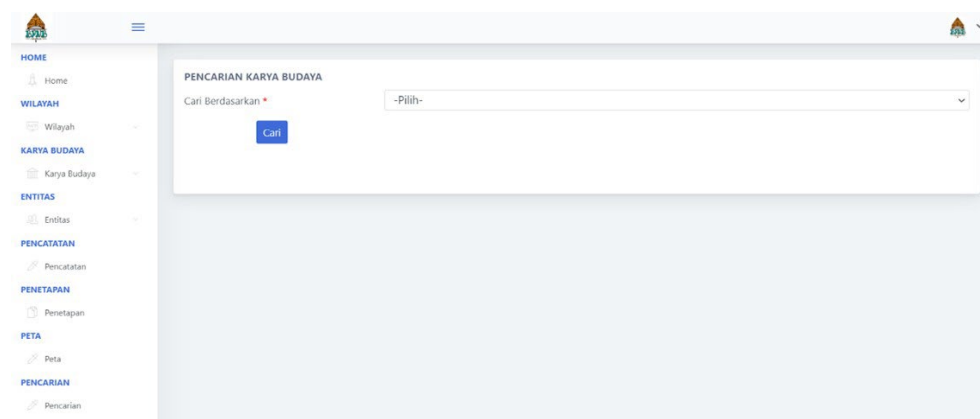
Map page is created so that the user can see the location of the cultural works district on a map view.



**FIGURE 10.** Map View

## 8. Search Page

Search page is created so that the user search and filter the cultural works based on criteria, such as name, element, condition, area, reporter's name, maestro's name, person responsible, library title, and the publisher's name.



**FIGURE 11.** Search View

This is the last step of the UCD method. This West Java's Intangible Cultural Heritage Website program has been tested on users, namely: Head of BPNB service unit and BPNB staff. After doing the test, the Head of BPNB said that the website was easy to understand and very helpful for documentation of intangible cultural heritage and could be used for socialization to the public so there would be no other iteration for the UCD method.

## **CONCLUSION**

The West Java Cultural Values Preservation Centre only uses Microsoft Access application to store the intangible cultural heritage data before. There is an urgent need to upgrade it to a website version so that the data can also be seen by public. User Centred Design method is seen as the best method to design the user interface of the website because of the product itself. The result is, The West Java's Intangible Cultural Heritage Website has received a good response because the design process always involves the user. The design of this website is easily understood by users and serves its purpose. In addition, the features in the application can also be accessed easily and information on the application has been displayed informatively so that it is easily understood by users. The website already been developed and used by BPNB. There are also some suggestions from users to develop it by making a dashboard that provides information about BPNB based on Android, so that the users can access it easily via cell phones or gadgets.

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