

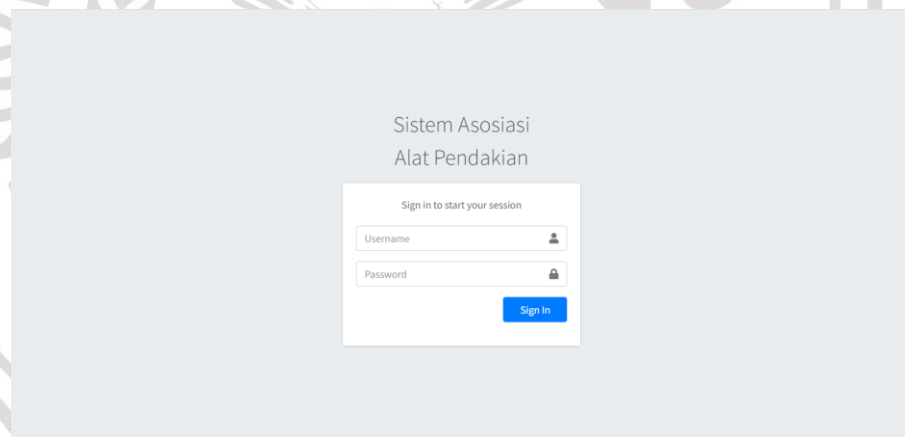
BAB IV IMPLEMENTASI DAN PENGUJIAN SISTEM

1.1. Implementasi

Implementasi merupakan tahap penerapan sistem yang telah dirancang kedalam bentuk kode program sesuai dengan kebutuhan sistem agar dapat berjalan dengan baik. Implementasi sistem asosiasi penyewaan alat pendakian menggunakan bahasa pemrograman HTML, CSS, PHP, dan JavaScript serta dibantu dengan *framework* Laravel dan Bootstrap. Adapun *software* yang digunakan dalam pengembangan sistem yaitu teks editor "Visual Studio Code" dan *web server* "XAMPP".

1.1.1. Halaman Login

Pada halaman *login*, *user* akan memasukkan *username* dan *password* agar dapat mengakses sistem dengan hak aksesnya. Berikut merupakan tampilan halaman *login* yang disajikan dalam gambar 4.1.



Gambar 4.1 Halaman *Login*

Source Code Halaman *Login*

```
<html>
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <title>AdminLTE 3 | Log in</title>
  <!-- Tell the browser to be responsive to screen width
-->
```

```

<meta name="viewport" content="width=device-width,
initial-scale=1">
<!-- Font Awesome -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-
master/plugins/fontawesome-free/css/all.min.css')}}">
<!-- Ionicons -->
<link rel="stylesheet"
href="https://code.ionicframework.com/ionicons/2.0.1/css/
ionicons.min.css">
<!-- icheck bootstrap -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-
master/plugins/icheck-bootstrap/icheck-
bootstrap.min.css')}}">
<!-- Theme style -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-
master/dist/css/adminlte.min.css')}}">
<!-- Google Font: Source Sans Pro -->
<link
href="https://fonts.googleapis.com/css?family=Source+Sans
+Pro:300,400,400i,700" rel="stylesheet">
</head>
<body class="login-page" style="min-height: 512.781px;">
<div class="login-box">
<div class="login-logo">
<a href="/">Sistem Asosiasi<br>Alat Pendakian</a>
</div>
<!-- /.login-logo -->
<div class="card">
<div class="card-body login-card-body">
@if(\Session::has('alert'))
<div class="alert alert-danger">
<div>{{Session::get('alert')}}</div>
</div>
@endif
@if(\Session::has('alert-success'))
<div class="alert alert-success">
<div>{{Session::get('alert-
success')}}</div>
</div>
@endif
<p class="login-box-msg">Sign in to start your
session</p>
<form action="/login" method="post">
@csrf
<div class="input-group mb-3">

```

```

        <input type="username" class="form-control"
id="username" name="username" placeholder="Username">
        <div class="input-group-append">
            <div class="input-group-text">
                <span class="fas fa-user"></span>
            </div>
        </div>
    </div>
    <div class="input-group mb-3">
        <input type="password" class="form-control"
id="password" name="password" placeholder="Password">
        <div class="input-group-append">
            <div class="input-group-text">
                <span class="fas fa-lock"></span>
            </div>
        </div>
    </div>
    <div class="row">
        <div class="col-8">
        </div>
        <!-- /.col -->
        <div class="col-4">
            <button type="submit" class="btn btn-primary
btn-block">Sign In</button>
        </div>
        <!-- /.col -->
    </div>
</form>
</div>
<!-- /.login-card-body -->
</div>
</div>
<!-- /.login-box -->
<!-- jQuery -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/jquery/jquery.min.js')}}"></script>
<!-- Bootstrap 4 -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/bootstrap/js/bootstrap.bundle.min.js')}}">
</script>
<!-- AdminLTE App -->
<script src="{{ asset('asset/AdminLTE-
master/dist/js/adminlte.min.js')}}"></script>
</body>
</html>

```

```

// Function
public function login(Request $req){
    $username = $req->username;
    $password = $req->password;
    $data = DB::table('user')-
>where('USERNAME',$username)->first();
    if($data){
        $pass = Crypt::decryptString($data-
>PASSWORD);
        if($pass == $password){
            Session::put('nama',$data->NAMA_USER);
            Session::put('id',$data->ID_USER);
            Session::put('login',TRUE);
            return redirect('/');
        }else{
            return redirect('/')-
>with('alert','Password yang Anda masukkan salah.');
```

1.1.2. Halaman Data Item

Halaman data *item* menampilkan data *item* yang tersimpan di *database*. Pada halaman data *item*, *user* dapat menambah data baru, *edit*, dan hapus data. Halaman data *item* disajikan dalam gambar 4.2.

ID Item	Nama	Aksi
C	CARRIER	Edit Delete
FS	FLYSHEET	Edit Delete
HL	HEADLAMP	Edit Delete
K	KOMPOR	Edit Delete
M	MATRAS	Edit Delete

Gambar 4.2 Halaman Data Item

Source Code Halaman Data Item

```

@extends('layout/index')
@section('title')
<title>Data Item</title>
@endsection
@section('head')
<!-- DataTables -->
  <link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-bs4/css/dataTables.bootstrap4.min.css')}}">
  <link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-responsive/css/responsive.bootstrap4.min.css')}}">
  <link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-buttons/css/buttons.bootstrap4.min.css')}}">
@endsection
@section('content')
<!-- Content Wrapper. Contains page content -->
<div class="content-wrapper">
  <!-- Content Header (Page header) -->
  <section class="content-header">
    <div class="container-fluid">
      <div class="row mb-2">
        <div class="col-sm-6">
          <h1>Item</h1>
        </div>
        <div class="col-sm-6">
          <ol class="breadcrumb float-sm-right">
            <li class="breadcrumb-item"><a href="#">Home</a></li>
            <li class="breadcrumb-item active">Item</li>
          </ol>
        </div>
      </div>
    </div><!-- /.container-fluid -->
  </section>

  <!-- Main content -->
  <section class="content">
    <div class="container-fluid">
      <div class="row">
        <div class="col-12">

```

```

<div class="card">
  <div class="card-header">
    <h3 class="card-title">Data Item</h3>
  </div>
  <!-- /.card-header -->
  <div class="card-body">
    <div class="row">
      <div class="col-12 col-md-12">
        <div class="row">
          <div class="col-12 col-sm-2">
            <a class="btn btn-primary col-
fileinput-button dz-clickable" data-toggle="modal" data-
target="#add">
              <i class="fas fa-plus"></i>
              <span>Add</span>
            </a>

            <!-- modal add -->
            <div class="modal fade" id="add"
>
              <div class="modal-dialog modal-
lg">
                <div class="modal-content">
                  <div class="modal-header">
                    <h4 class="modal-
title">Input Item</h4>
                    <button type="button"
class="close" data-dismiss="modal" aria-label="Close">
                      <span aria-
hidden="true">x</span>
                    </button>
                  </div>
                  <div class="modal-body">
                    <form action="/item/input"
method="POST" enctype="multipart/form-data">
                      @csrf
                      <div class="form-
group">
                        <label
for="exampleInputEmail1">ID Item</label>
                        <input type="text"
class="form-control" id="id_item" name="id_item">
                      </div>

```

```

        <div class="form-
group">
            <label
for="exampleInputPassword1">Nama</label>
            <input type="text"
class="form-control" id="nama" name="nama">
        </div>
    </div>
    <div class="modal-footer
justify-content-between">
        <button type="submit"
class="btn btn-primary">Submit</button>
    </form>
</div>
</div>
<!-- /.modal-content -->
</div>
<!-- /.modal-dialog -->
</div>
<!-- end modal -->
</div>
</div>
</div>
<br>
<table id="example1" class="table table-
bordered table-striped">
    <thead>
    <tr>
        <th width="30%">ID Item</th>
        <th width="50%">Nama</th>
        <th width="20%">Aksi</th>
    </tr>
    </thead>
    <tbody>
        @foreach($item as $i)
    <tr>
        <td>{{ $i->ID_ITEM }}</td>
        <td>{{ $i->NAMA_ITEM }}</td>
        <td>
            <button type="button" class="btn
btn-default" data-toggle="modal" data-target="#edit{{ $i-
>ID_ITEM }}">
                <i class="fas fa-edit"></i> Edit
            </button>

```

```

        <a type="button" class="btn btn-
default" data-toggle="modal" data-target="#konfirmasi{{
$i->ID_ITEM }}" >
            <i class="fas fa-trash"></i>
Delete
        </a>
    </td>
</tr>
<!-- modal edit -->
<div class="modal fade" id="edit{{
$i->ID_ITEM }}" >
    <div class="modal-dialog modal-
lg">
        <div class="modal-content">
            <div class="modal-header">
                <h4 class="modal-
title">Edit Item</h4>
                <button type="button"
class="close" data-dismiss="modal" aria-label="Close">
                    <span aria-
hidden="true">x</span>
                </button>
            </div>
            <div class="modal-body">
                <form action="/item/edit"
method="POST" enctype="multipart/form-data">
                    @csrf
                    <div class="form-group">
                        <label
for="exampleInputEmail1">ID Item</label>
                        <input type="text"
class="form-control" id="id_item" name="id_item"
value="{{ $i->ID_ITEM }}" readonly>
                    </div>
                    <div class="form-group">
                        <label
for="exampleInputPassword1">Nama</label>
                        <input type="text"
class="form-control" id="nama" name="nama" value="{{ $i-
>NAMA_ITEM }}" >
                    </div>
                </div>
            <div class="modal-footer
justify-content-between">

```



```

        <button type="submit"
class="btn btn-primary">Save</button>
    </form>
</div>
</div>
</div>
<!-- /.modal-content -->
</div>
<!-- /.modal-dialog -->
</div>
<!-- end modal -->

<!-- modal delete -->
<div class="modal fade"
id="konfirmasi{{ $i->ID_ITEM }}">
    <div class="modal-dialog modal-
sm">
        <div class="modal-content">
            <div class="modal-header">
                <h4 class="modal-
title">Konfirmasi</h4>
                <button type="button"
class="close" data-dismiss="modal" aria-label="Close">
                    <span aria-
hidden="true">&times;</span>
                </button>
            </div>
            <div class="modal-body">
                <p>Apakah benar data akan
dihapus?</p>
            </div>
            <div class="modal-footer
justify-content-between">
                <button type="button"
class="btn btn-default" data-
dismiss="modal">Batal</button>
                <a type="button" class="btn
btn-primary" href="/item/delete/{{ $i->ID_ITEM }}">Ya</a>
            </div>
        </div>
    </div>
<!-- /.modal-content -->
</div>
<!-- /.modal-dialog -->
</div>
<!-- /.modal -->
@endforeach

```

```

        </table>
    </div>
    <!-- /.card-body -->
</div>
<!-- /.card -->
</div>
<!-- /.col -->
</div>
<!-- /.row -->
</div>
<!-- /.container-fluid -->
</section>
<!-- /.content -->
</div>
<!-- /.content-wrapper -->

@endsection
@section('script')
<!-- DataTables & Plugins -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables/jquery.dataTables.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
bs4/js/dataTables.bootstrap4.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/dataTables.responsive.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/responsive.bootstrap4.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/dataTables.buttons.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.bootstrap4.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/jsczip/jsczip.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/pdfmake.min.js')}}" ></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/vfs_fonts.js')}}" ></script>

```

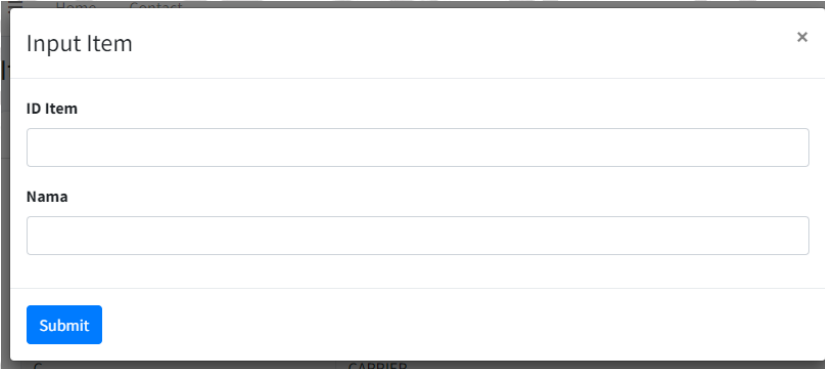
```

<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.html5.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.print.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.colVis.min.js')}}"></script>
@endsection

```

a. Tambah Data *Item*

User dapat menambah data *item* dengan mengisi *field* ID *item* dan nama *item*. Berikut tampilan fitur tambah data *item* yang disajikan pada gambar 4.3.



The screenshot shows a modal window titled "Input Item" with a close button (X) in the top right corner. Inside the modal, there are two input fields: "ID Item" and "Nama". Below the "Nama" field is a blue "Submit" button. The background of the page is watermarked with the logo of Universitas Muhammadiyah.

Gambar 4.3 Tambah Data *Item*

Source Code Tambah Data *Item*

```

public function form(Request $req){
    DB::table('item')->insert([
        'ID_ITEM' => $req->id_item,
        'NAMA_ITEM' => $req->nama
    ]);
    return back()->with('success','success');
}

```

b. Edit Data *Item*

User dapat mengubah data *item* dengan mengubah *field* nama *item*. Berikut tampilan fitur edit data *item* yang disajikan pada gambar 4.4.

Gambar 4.4 Edit Data *Item*

Source Code Edit Data *Item*

```
public function edit(Request $req){
    DB::table('item')->where('ID_ITEM', $req->id_item)->update([
        'NAMA_ITEM' => $req->nama
    ]);
    return back()->with('update','update');
}
```

c. Hapus Data *Item*

User dapat menghapus data *item* dengan klik *button* “Ya” pada *pop up* konfirmasi. Berikut tampilan fitur hapus data *item* yang disajikan pada gambar 4.5.

Gambar 4.5 Hapus Data *Item*

Source Code Hapus Data Item

```
public function delete($id){
    DB::table('item')->where('ID_ITEM', $id)-
>delete();
    return back();
}
```

1.1.3. Halaman Data Transaksi

Halaman data transaksi menampilkan data transaksi yang tersimpan pada *database* dalam bentuk tabular. Pada halaman ini *user* dapat *import* data transaksi dengan menekan *button* “Import”. Berikut merupakan tampilan halaman data transaksi yang disajikan pada gambar 4.6.

IDT	C	FS	HL	K	M	N	SB	T	TP
1	0	1	0	0	1	1	0	1	0
2	0	0	0	1	1	1	0	1	0
3	1	0	1	1	0	1	0	0	0
4	1	0	1	1	1	1	0	1	0
5	1	0	1	1	1	1	0	1	0
6	0	0	0	1	1	0	0	1	0

Gambar 4.6 Halaman Data Transaksi

Source Code Halaman Data Transaksi

```
@extends('layout/index')
@section('title')
<title>Data Transaksi</title>
@endsection
@section('head')
<!-- DataTables -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-bs4/css/dataTables.bootstrap4.min.css')}}">
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-responsive/css/responsive.bootstrap4.min.css')}}">
```



```

        <a class="btn btn-primary col
fileinput-button dz-clickable" data-toggle="modal" data-
target="#import">
            <i class="fas fa-upload"></i>
            <span>Import</span>
        </a>

        <!-- modal import -->
        <div class="modal fade"
id="import" >
            <div class="modal-dialog modal-
lg">
                <div class="modal-content">
                    <div class="modal-header">
                        <h4 class="modal-
title">Import Data Transaksi</h4>
                        <button type="button"
class="close" data-dismiss="modal" aria-label="Close">
                            <span aria-
hidden="true">x</span>
                        </button>
                    </div>
                    <div class="modal-body">
                        <form
action="/transaksi/import" method="POST"
enctype="multipart/form-data">
                            @csrf
                            <div class="form-
group">
                                <label
for="exampleInputEmail1">Pilih file</label><br>
                                <input type="file"
id="file" name="file"><br>
                                <!-- <a
href="/export">Format file</a> -->
                            </div>
                        </div>
                        <div class="modal-footer
justify-content-between">
                            <button type="submit"
class="btn btn-primary">Submit</button>
                        </div>
                    </form>
                </div>
            </div>
        </div>
        <!-- /.modal-content -->

```

```

        </div>
        <!-- /.modal-dialog -->
    </div>
    <!-- end modal -->
</div>
</div>
</div>
</div>
</div>
</div>
<br>
<table id="example1" class="table table-
bordered table-striped">
    <thead>
    <tr>
        <th>IDT</th>
        @foreach($item as $i)
        <th>{{ $i->ID_ITEM }}</th>
        @endforeach
    </tr>
    </thead>
    <tbody>
        @foreach($transaksi as $t)
    <tr>
        <td>{{ $t->ID_TRANSAKSI }}</td>
        @foreach($item as $i)
            @foreach($detail_transaksi as
$dt)
                @if($t->ID_TRANSAKSI == $dt-
>ID_TRANSAKSI)
                    @if($dt->ID_ITEM == $i-
>ID_ITEM)
                        @php $x=1; @endphp
                        @break
                    @else
                        @php $x=0; @endphp
                    @endif
                @endif
            @endforeach
            <td>{{ $x }}</td>
        @endforeach
    </tr>
        @endforeach
    </tbody>
</table>
</div>
<!-- /.card-body -->
</div>

```



```

        <!-- /.card -->
    </div>
    <!-- /.col -->
</div>
    <!-- /.row -->
</div>
    <!-- /.container-fluid -->
</section>
    <!-- /.content -->
</div>
<!-- /.content-wrapper -->

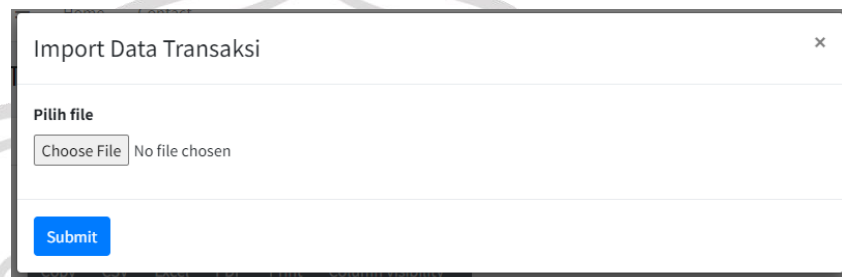
@endsection
@section('script')
<!-- DataTables & Plugins -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables/jquery.dataTables.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
bs4/js/dataTables.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/dataTables.responsive.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/responsive.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/dataTables.buttons.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/jsczip/jsczip.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/pdfmake.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/vfs_fonts.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.html5.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.print.min.js')}}"></script>

```

```
<script src="{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.colVis.min.js')}"></script>
@endsection
```

a. *Import* Data Transaksi

Pada fitur *import* data transaksi *user* dapat *upload* file data transaksi dalam bentuk *excel*. Berikut tampilan fitur *import* data transaksi yang disajikan dalam gambar 4.7.



Gambar 4.7 *Import* Data Transaksi

Source Code *Import* Data Transaksi

```
public function import(Request $request){
    // validasi
    $this->validate($request, [
        'file' => 'required|mimes:csv,xls,xlsx'
    ]);

    // menangkap file excel
    $file = $request->file('file');

    // membuat nama file unik
    $nama_file = rand().$file-
>getClientOriginalName();

    // upload ke dalam folder public
    $file->move('file/transaksi',$nama_file);

    // import data
    Excel::import(new TransaksiImport,
public_path('/file/transaksi/'.$nama_file));

    // notifikasi dengan session
    Session::flash('sukses','Data Transaksi
Berhasil Diimport.');
```

```
// alihkan halaman kembali
return redirect('/transaksi');
}
```

1.1.4. Halaman *Association Rule*

Pada halaman *association rule* ditampilkan hasil *rule* setelah proses asosiasi menggunakan algoritma apriori. Pada proses asosiasi *user* harus memasukkan minimal *support* dan *confidence*. Berikut gambar 4.8 yang menyajikan halaman *association rule*.

No	Rule
1	Jika pelanggan menyewa KOMPOR, maka pelanggan juga menyewa TENDA
2	Jika pelanggan menyewa MATRAS, maka pelanggan juga menyewa TENDA
3	Jika pelanggan menyewa TENDA, maka pelanggan juga menyewa MATRAS
4	Jika pelanggan menyewa NESTING, maka pelanggan juga menyewa TENDA

Gambar 4.8 Halaman *Association Rule*

Source Code Halaman *Association Rule*

```
@extends('layout/index')
@section('title')
<title>Association Rule</title>
@endsection
@section('head')
<!-- DataTables -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-bs4/css/dataTables.bootstrap4.min.css')}}">
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-responsive/css/responsive.bootstrap4.min.css')}}">
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-buttons/css/buttons.bootstrap4.min.css')}}">
@endsection
@section('content')
```

```

<!-- Content Wrapper. Contains page content -->
<div class="content-wrapper">
  <!-- Content Header (Page header) -->
  <section class="content-header">
    <div class="container-fluid">
      <div class="row mb-2">
        <div class="col-sm-6">
          <h1>Rule</h1>
        </div>
        <div class="col-sm-6">
          <ol class="breadcrumb float-sm-right">
            <li class="breadcrumb-item"><a
href="#">Home</a></li>
            <li class="breadcrumb-item
active">Rule</li>
          </ol>
        </div>
      </div><!-- /.container-fluid -->
    </section>

    <!-- Main content -->
    <section class="content">
      <div class="container-fluid">
        <div class="row">
          <div class="col-12">

            <div class="card">
              <div class="card-header">
                <h3 class="card-title">Association
Rule</h3>
              </div>
              <!-- /.card-header -->
              <div class="card-body">
                <div class="row">
                  <div class="col-12 col-md-12">
                    <div
class="row">
                      <div class="col-12 col-sm-3">
                        <a class="btn btn-primary col
fileinput-button dz-clickable" data-toggle="modal" data-
target="#add">
                          <span>Input Support &
Confidence</span>
                        </a>

```

```

        <!-- modal add -->
        <div class="modal fade" id="add"
    >
            <div class="modal-dialog modal-
lg">
                <div class="modal-content">
                    <div class="modal-header">
                        <h4 class="modal-
title">Input Support & Confidence</h4>
                        <button type="button"
class="close" data-dismiss="modal" aria-label="Close">
                            <span aria-
hidden="true">x</span>
                        </button>
                    </div>
                    <div class="modal-body">
                        <form action="/rule/input"
method="POST" enctype="multipart/form-data" id="form">
                            @csrf
                            <div class="form-
group">
                                <label
for="exampleInputPassword1">Min Support</label>
                                <input type="decimal"
class="form-control" id="sup" name="sup">
                                </div>
                                <div class="form-
group">
                                    <label
for="exampleInputPassword1">Min Confidence</label>
                                    <input type="decimal"
class="form-control" id="conf" name="conf">
                                    </div>
                                </div>
                                <div class="modal-footer
justify-content-between">
                                    <button type="submit"
class="btn btn-primary">Submit</button>
                                </form>
                                </div>
                            </div>
                        <!-- /.modal-content -->
                    </div>
                <!-- /.modal-dialog -->
    </div>

```

```

        </div>
        <!-- end modal -->
    </div>
</div>
</div>
</div>
<br>
<table id="example1" class="table table-
bordered table-striped">
    <thead>
    <tr>
        <th>No</th>
        <th>Rule</th>
    </tr>
    </thead>
    <tbody>
    @php
        $no = 1;
    @endphp
    @foreach($rule as $r)
    <tr>
        <td>{{ $no++ }}</td>
        <td>Jika pelanggan menyewa
            @foreach($detail_rule as $dr)
                @if($dr->ID_RULE == $r->ID_RULE)
                    @if($dr->VARIABEL == 0)
                        {{ $dr->NAMA_ITEM }}
                    @endif
                @endif
            @endforeach
            , maka pelanggan juga menyewa
            @foreach($detail_rule as $dr)
                @if($dr->ID_RULE == $r->ID_RULE)
                    @if($dr->VARIABEL == 1)
                        {{ $dr->NAMA_ITEM }}
                    @endif
                @endif
            @endforeach
        </td>
    </tr>
    @endforeach
</table>
</div>
<!-- /.card-body -->
</div>

```

```

        <!-- /.card -->
    </div>
    <!-- /.col -->
</div>
    <!-- /.row -->
</div>
    <!-- /.container-fluid -->
</section>
    <!-- /.content -->
</div>
<!-- /.content-wrapper -->

@endsection
@section('script')
<!-- DataTables & Plugins -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables/jquery.dataTables.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
bs4/js/dataTables.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/dataTables.responsive.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/responsive.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/dataTables.buttons.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/jsczip/jsczip.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/pdfmake.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/vfs_fonts.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.html5.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.print.min.js')}}"></script>

```

```


<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.colVis.min.js')}}"></script>
<!-- InputMask -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/moment/moment.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/inputmask/jquery.inputmask.min.js')}}"></s
cript>

<script>
$(function () {
    //Datemask dd/mm/yyyy
    $('#datemask').inputmask('dd/mm/yyyy', {
'placeholder': 'dd/mm/yyyy' })
    //Datemask2 mm/dd/yyyy
    $('#datemask2').inputmask('mm/dd/yyyy', {
'placeholder': 'mm/dd/yyyy' })
    //Money Euro
    $('[data-mask]').inputmask()
})
</script>
@endsection

```

a. *Input Support & Confidence*

User dapat memasukkan minimum *support & confidence* pada *field* yang tersedia untuk proses asosiasi. Berikut tampilan fitur *input support & confidence* yang disajikan pada gambar 4.9.



Gambar 4.9 *Input Support & Confidence*

Source Code Input Support & Confidence

```

public function form(Request $req){
    $sup = $req->sup;

```



```

$conf = $req->conf;

DB::table('detail_rule')->delete();
DB::table('rule_asosiasi')->delete();
DB::table('detail_itemset')->delete();
DB::table('itemset')->delete();

$this->iterasi(1,$sup);
$this->rule($conf);
return redirect('/rule');
}

public function iterasi($k,$sup){
    if($k==1){
        $item = DB::table('item')->get();
        foreach ($item as $i) {
            $count = (DB::table('itemset')->count('ID_ITEMSET')) + 1;
            DB::table('itemset')->insert([
                'ID_ITEMSET' => $count,
                'JUMLAH_K' => $k
            ]);
            DB::table('detail_itemset')->insert([
                'ID_ITEMSET' => $count,
                'ID_ITEM' => $i->ID_ITEM,
                'INDEX' => 1
            ]);
        }
        $itemset = DB::table('itemset')->where('JUMLAH_K',$k)->get();
        if($itemset != NULL){
            $this->support($k,$sup);
            $k=$k+1;
            $this->iterasi($k,$sup);
        }
    }elseif($k==2){
        $itemset = DB::table('itemset')->where('JUMLAH_K',$k-1)->where('STATUS',1)->get();
        $data = [];
        $n = 0;
        foreach($itemset as $i){
            $detail = DB::table('detail_itemset')->where('ID_ITEMSET',$i->ID_ITEMSET)->first();
            $n=$n+1;

```

```

        $data[$n] = $detail-
>ID_ITEM;
    }
    for($i=1;$i<$n;$i++){
        for($j=$i+1;$j<=$n;$j++){
            $count = (DB::table('itemset')-
>count('ID_ITEMSET')) + 1;
            DB::table('itemset')->insert([
                'ID_ITEMSET' => $count,
                'JUMLAH_K' => $k
            ]);
            DB::table('detail_itemset')-
>insert([
                'ID_ITEMSET' => $count,
                'ID_ITEM'=> $data[$i],
                'INDEX'=>1
            ]);
            DB::table('detail_itemset')-
>insert([
                'ID_ITEMSET' => $count,
                'ID_ITEM'=> $data[$j],
                'INDEX'=>2
            ]);
        }
    }
    $itemset = DB::table('itemset')-
>where('JUMLAH_K',$k)->get();
    $this->support($k,$sup);
    if($itemset !=NULL){
        $k=$k+1;
        $this->iterasi($k,$sup);
    }
    }else{
        $min = DB::table('itemset')-
>where('JUMLAH_K',$k-1)->where('STATUS',1)-
>min('ID_ITEMSET');
        $max = DB::table('itemset')-
>where('JUMLAH_K',$k-1)->where('STATUS',1)-
>max('ID_ITEMSET');
        $stat = 0;
        for($i=$min;$i<$max;$i++){
            for($j=$i+1;$j<=$max;$j++){
                for($z=1;$z<$k-1;$z++){

```

```

        $it1 =
DB::table('detail_itemset')->where('ID_ITEMSET',$i)-
>where('INDEX',$z)->first();
        $it2 =
DB::table('detail_itemset')->where('ID_ITEMSET',$j)-
>where('INDEX',$z)->first();
        if($it1->ID_ITEM == $it2-
>ID_ITEM){
            $stat = 1;
        }else{
            $stat = 0;
            break;
        }
    }
    if($stat==1){
        $itemset1 =
DB::table('detail_itemset')->where('ID_ITEMSET',$i)-
>get();
        $itemset2 =
DB::table('detail_itemset')->where('ID_ITEMSET',$j)-
>where('INDEX',$k-1)->first();
        $count =
(DB::table('itemset')->count('ID_ITEMSET')) + 1;
        DB::table('itemset')->insert([
            'ID_ITEMSET' => $count,
            'JUMLAH_K' => $k
        ]);
        foreach($itemset1 as $it){
            DB::table('detail_itemset'
)->insert([
                'ID_ITEMSET' =>
                $count,
                'ID_ITEM' => $it-
                >ID_ITEM,
                'INDEX' => $it->INDEX
            ]);
        }
        DB::table('detail_itemset')-
>insert([
            'ID_ITEMSET' => $count,
            'ID_ITEM' => $itemset2-
            >ID_ITEM,
            'INDEX' => $k
        ]);
    }
}

```

```

    }
    }
    $itemset = DB::table('itemset')-
>where('JUMLAH_K',$k)->count();
    $this->support($k,$sup);
    if($itemset > 1){
        $k=$k+1;
        $this->iterasi($k,$sup);
    }
}
}

public function support($k,$sup){
    $itemset = DB::table('itemset')-
>where('JUMLAH_K',$k)->get();
    $trans = DB::table('transaksi')->get();
    $total = DB::table('transaksi')-
>count('ID_TRANSAKSI');
    $jumlah = 0;
    $count = 0;
    // dd($k);
    foreach($itemset as $it){
        $jumlah = 0;
        $detail_itemset =
DB::table('detail_itemset')->where('ID_ITEMSET', $it-
>ID_ITEMSET)->get();
        foreach($trans as $t){
            $count = 0;
            foreach($detail_itemset as
$di){
                $ava =
DB::table('detail_transaksi')
                    ->where('ID_TRANSAKSI',
$t->ID_TRANSAKSI)
                    ->where('ID_ITEM',$di-
>ID_ITEM)
                    ->count('ID_TRANSAKSI');
                if($ava == 1){
                    $count=$count+1;
                }
            }
            //dd($count);
            if($count==$k){
                $jumlah=$jumlah+1;
            }
        }
    }
}
}

```

```

    }
    //dd($jumlah);
    $support = $jumlah/$total;
    if($support>=$sup){
        $status = 1;
    }else{
        $status = 0;
    }
    DB::table('ITEMSET')->where('ID_ITEMSET',
    $it->ID_ITEMSET)->update([
        'NILAI_SUPPORT' => $support,
        'STATUS' => $status
    ]);
}
}

public function rule($conf){
    $itemset = DB::table('itemset')-
    >whereNot('JUMLAH_K',1)->where('STATUS',1)->get();
    foreach($itemset as $it){
        $detail_it = DB::table('detail_itemset')-
        >where('ID_ITEMSET',$it->ID_ITEMSET)->get();
        if($it->JUMLAH_K == 2){
            $count = (DB::table('rule_asosiasi')-
            >count('ID_RULE')) + 1;
            DB::table('rule_asosiasi')->insert([
                'ID_RULE' => $count,
                'ID_ITEMSET' => $it->ID_ITEMSET
            ]);
            foreach($detail_it as $di){
                if($di->INDEX == 1){
                    DB::table('detail_rule')-
                    >insert([
                        'ID_RULE' => $count,
                        'ID_ITEM' => $di->ID_ITEM,
                        'VARIABEL' => 0 // x
                    ]);
                }else{
                    DB::table('detail_rule')-
                    >insert([
                        'ID_RULE' => $count,
                        'ID_ITEM' => $di->ID_ITEM,
                        'VARIABEL' => 1 // y
                    ]);
                }
            }
        }
    }
}

```



```

        foreach($rule as $r){
            $sup_xy = DB::table('itemset')-
>select('NILAI_SUPPORT')->where('ID_ITEMSET', $r-
>ID_ITEMSET)->first();
            // support x
            $varx = DB::table('detail_rule')-
>where('ID_RULE',$r->ID_RULE)->where('VARIABEL', 0)-
>get();
            $jumlah_x = DB::table('detail_rule')-
>where('ID_RULE',$r->ID_RULE)->where('VARIABEL', 0)-
>count('ID_RULE');
            $itemset = DB::table('itemset')-
>where('JUMLAH_K', $jumlah_x)->get();
            $count = 0;
            $sup_x = 0;
            foreach($itemset as $t){
                $count = 0;
                foreach($varx as $x){
                    $ava = DB::table('detail_itemset')
->where('ID_ITEMSET', $t-
>ID_ITEMSET)
->where('ID_ITEM', $x-
>ID_ITEM)
->count('ID_ITEMSET');
                    if($ava == 1){
                        $count = $count+1;
                    }
                }
                if($count == $jumlah_x){
                    $sup_x = $t->NILAI_SUPPORT;
                    break;
                }
            }
            //dd($sup_x,$sup_xy->NILAI_SUPPORT);
            $nilai_conf = $sup_xy-
>NILAI_SUPPORT/$sup_x;

            //support y
            $vary = DB::table('detail_rule')-
>where('ID_RULE',$r->ID_RULE)->where('VARIABEL', 1)-
>get();

```



```

        $jumlah_y = DB::table('detail_rule')-
>where('ID_RULE', $r->ID_RULE)->where('VARIABEL', 1)-
>count('ID_RULE');
        $itemset = DB::table('itemset')-
>where('JUMLAH_K', $jumlah_y)->get();
        $count = 0;
        $sup_y = 0;
        foreach($itemset as $t){
            $count = 0;
            foreach($vary as $y){
                $ava = DB::table('detail_itemset')
                    ->where('ID_ITEMSET', $t-
>ID_ITEMSET)
                    ->where('ID_ITEM', $y-
>ID_ITEM)
                    ->count('ID_ITEMSET');
                if($ava == 1){
                    $count = $count+1;
                }
            }
            if($count == $jumlah_y){
                $sup_y = $t->NILAI_SUPPORT;
                break;
            }
        }
        $lift_ratio = $nilai_conf/$sup_y;
        if($nilai_conf>=$conf){
            $status = 1;
        }else{
            $status = 0;
        }
        DB::table('rule_asosiasi')-
>where('ID_RULE', $r->ID_RULE)->update([
            'NILAI_CONF'=>$nilai_conf,
            'NILAI_UJI'=>$lift_ratio,
            'STATUS' => $status
        ]);
    }
}

```

1.1.5. Halaman Pengujian Rule

Setelah dihasilkan *rule* hasil asosiasi, dilanjutkan dengan perhitungan *lift ratio* untuk menguji kekuatan *rule*. Hasil perhitungan *lift ratio* disajikan pada halaman pengujian *rule* yang terdapat pada gambar 4.10.

No	Rule	Lift Ratio
1	Jika pelanggan menyewa KOMPOR, maka pelanggan juga menyewa TENDA	1.00739
2	Jika pelanggan menyewa MATRAS, maka pelanggan juga menyewa TENDA	1.05911
3	Jika pelanggan menyewa TENDA, maka pelanggan juga menyewa MATRAS	1.05911
4	Jika pelanggan menyewa NESTING, maka pelanggan juga menyewa TENDA	1.02929

Gambar 4.10 Halaman Pengujian Rule

Source Code Halaman Pengujian Rule

```
@extends('layout/index')
@section('title')
<title>Pengujian Rule</title>
@endsection
@section('head')
<!-- DataTables -->
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-bs4/css/dataTables.bootstrap4.min.css')}}">
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-responsive/css/responsive.bootstrap4.min.css')}}">
<link rel="stylesheet" href="{{ asset('asset/AdminLTE-master/plugins/datatables-buttons/css/buttons.bootstrap4.min.css')}}">
@endsection
@section('content')
<!-- Content Wrapper. Contains page content -->
<div class="content-wrapper">
<!-- Content Header (Page header) -->
<section class="content-header">
<div class="container-fluid">
<div class="row mb-2">
```

```

    <div class="col-sm-6">
      <h1>Lift Ratio</h1>
    </div>
    <div class="col-sm-6">
      <ol class="breadcrumb float-sm-right">
        <li class="breadcrumb-item"><a
href="#">Home</a></li>
        <li class="breadcrumb-item active">Lift
Ratio</li>
      </ol>
    </div>
  </div><!-- /.container-fluid -->
</section>

<!-- Main content -->
<section class="content">
  <div class="container-fluid">
    <div class="row">
      <div class="col-12">

        <div class="card">
          <div class="card-header">
            <h3 class="card-title">Lift Ratio</h3>
          </div>
          <!-- /.card-header -->
          <div class="card-body">

            <br>
            <table id="example1" class="table table-
bordered table-striped">
              <thead>
                <tr>
                  <th>No</th>
                  <th>Rule</th>
                  <th>Lift Ratio</th>
                </tr>
              </thead>
              <tbody>
                @php
                  $no = 1;
                @endphp
                @foreach($rule as $r)
                  <tr>
                    <td>{{ $no++ }}</td>

```

```

        <td>Jika pelanggan menyewa
        @foreach($detail_rule as $dr)
            @if($dr->ID_RULE == $r->ID_RULE)
                @if($dr->VARIABEL == 0)
                    {{ $dr->NAMA_ITEM }}
                @endif
            @endif
        @endforeach
        , maka pelanggan juga menyewa
        @foreach($detail_rule as $dr)
            @if($dr->ID_RULE == $r->ID_RULE)
                @if($dr->VARIABEL == 1)
                    {{ $dr->NAMA_ITEM }}
                @endif
            @endif
        @endforeach
    </td>
    <td>{{ $r->NILAI_UJI }}</td>
</tr>
    @endforeach
</table>
</div>
<!-- /.card-body -->
</div>
<!-- /.card -->
</div>
<!-- /.col -->
</div>
<!-- /.row -->
</div>
<!-- /.container-fluid -->
</section>
<!-- /.content -->
</div>
<!-- /.content-wrapper -->

@endsection
@section('script')
<!-- DataTables & Plugins -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables/jquery.dataTables.min.js')}}">
</script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
bs4/js/dataTables.bootstrap4.min.js')}}"></script>

```

```

<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/dataTables.responsive.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
responsive/js/dataTables.responsive.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/dataTables.buttons.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.bootstrap4.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/jzip/jzip.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/pdfmake.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/pdfmake/vfs_fonts.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.html5.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.print.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/datatables-
buttons/js/buttons.colVis.min.js')}}"></script>
<!-- InputMask -->
<script src="{{ asset('asset/AdminLTE-
master/plugins/moment/moment.min.js')}}"></script>
<script src="{{ asset('asset/AdminLTE-
master/plugins/inputmask/jquery.inputmask.min.js')}}"></s
cript>

<script>
$(function () {
    //Datemask dd/mm/yyyy
    $('#datemask').inputmask('dd/mm/yyyy', {
'placeholder': 'dd/mm/yyyy' })
    //Datemask2 mm/dd/yyyy
    $('#datemask2').inputmask('mm/dd/yyyy', {
'placeholder': 'mm/dd/yyyy' })
    //Money Euro
    $('[data-mask]').inputmask()

```

```

})
</script>
@endsection

```

1.2. Pengujian Sistem

Pengujian sistem merupakan hasil pengujian terhadap Sistem Informasi Asosiasi Alat Pendakian dengan menggunakan metode *Black Box Testing*, dimana metode pengujian ini dilakukan dengan cara mengamati *output* dari eksekusi sebuah fungsi perangkat lunak. Pengujian meliputi pengujian proses utama dan fitur – fitur yang terdapat pada sistem. Pengujian proses utama yaitu proses asosiasi dilakukan dengan *input support & confidence* berbeda-beda untuk mengetahui jumlah *rule* yang dihasilkan. Berikut tabel 4.1 hasil pengujian proses asosiasi.

Tabel 4.1 Hasil Pengujian Proses Asosiasi

No.	<i>Support</i>	<i>Confidence</i>	Jumlah <i>Rule</i>	Lolos <i>Lift Ratio</i>
1.	0,3	0,6	27	22
2.	0,3	0,7	18	16
3.	0,4	0,7	11	10
4.	0,4	0,8	4	3
5.	0,5	0,8	3	3

1.2.1. Halaman *Login*

Berikut tabel 4.2 merupakan hasil pengujian fitur-fitur pada halaman *login*.

Tabel 4.2 Hasil Pengujian Halaman *Login*

No.	Nama Fitur	<i>Input</i>	<i>Output</i>	Sesuai	Tidak Sesuai
1.	<i>Login</i> ke sistem	<i>Username</i> dan <i>Password</i> sesuai	Menuju ke halaman sesuai dengan hak akses	✓	

		<i>Username</i> dan <i>Password</i> tidak sesuai	Terdapat pesan <i>username</i> atau <i>password</i> salah	✓	
--	--	--	---	---	--

1.2.2. Halaman Data Item

Berikut tabel 4.3 merupakan hasil pengujian fitur-fitur pada halaman data *item*.

Tabel 4.3 Hasil Pengujian Halaman Data *Item*

No.	Nama Fitur	<i>Input</i>	<i>Output</i>	Sesuai	Tidak Sesuai
1.	<i>Input Data Item</i>	<i>Field</i> telah terisi semua	Terdapat pesan data berhasil tersimpan dan data tampil pada tabel data <i>item</i>	✓	
		Tidak mengisi beberapa <i>field</i>	Terdapat pesan bahwa beberapa atau semua <i>field</i> harus terisi	✓	
2.	<i>Edit Data Item</i>	Mengubah beberapa data	Terdapat pesan bahwa data berhasil diubah	✓	
3.	<i>Hapus Data Item</i>	Menghapus data <i>item</i>	Terdapat pesan bahwa data berhasil dihapus	✓	

1.2.3. Halaman Data Transaksi

Berikut tabel 4.4 merupakan hasil pengujian fitur-fitur pada halaman data transaksi.

Tabel 4.4 Halaman Data Transaksi

No.	Nama Fitur	<i>Input</i>	<i>Output</i>	Sesuai	Tidak Sesuai
1.	<i>Import Data Transaksi</i>	<i>Upload file</i> format .xls, .xlsx, atau .csv.	Terdapat pesan data berhasil tersimpan dan data tampil pada tabel data transaksi	✓	
		<i>Upload file</i> selain format .xls, .xlsx, .csv.	Terdapat pesan format <i>file</i> salah.	✓	

1.2.4. Halaman Association Rule

Berikut tabel 4.5 merupakan hasil pengujian fitur-fitur pada halaman *association rule*.

Tabel 4.5 Halaman *Association Rule*

No.	Nama Fitur	<i>Input</i>	<i>Output</i>	Sesuai	Tidak Sesuai
1.	<i>Input Support & Confidence</i>	<i>Field</i> telah terisi semua	Data <i>rule</i> hasil proses asosiasi tampil pada tabel data <i>rule</i>	✓	
		Tidak mengisi beberapa <i>field</i>	Terdapat pesan bahwa beberapa atau semua <i>field</i> harus terisi	✓	

1.2.5. Halaman Pengujian *Rule*

Berikut tabel 4.6 merupakan hasil pengujian fitur-fitur pada halaman pengujian *rule*.

Tabel 4.6 Halaman Pengujian *Rule*

No.	Nama Fitur	<i>Input</i>	<i>Output</i>	Sesuai	Tidak Sesuai
1.	Pengujian <i>Rule</i>	<i>Rule</i>	Data pengujian <i>rule</i> dengan <i>lift ratio</i> tampil pada halaman pengujian <i>rule</i>	✓	

