**BAB V**

**KESIMPULAN DAN SARAN**

1. **Kesimpulan**

Berdasarkan tujuan yang ingin dicapai pada penelitian ini dan dari semua proses yang telah dilakukan diperoleh kesimpulan sebagai berikut.

1. Penelitian ini telah menghasilkan suatu aplikasi yaitu Sistem Informasi Geografis berbasis *web* yang dapat menghasilkan *output* berupa grafik, tabel, dan peta tematik beserta *backend* untuk me-*manage* data. Adapun kesimpulan secara khusus dari penelitian ini adalah sebagai berikut:
2. Berdasarkan analisis sistem berjalan di BPS ditemukan bahwa Sistem Informasi Geografis yang ada saat ini tidak memiliki fasilitas untuk mengakses data dengan basis kewilayahan dan dalam pembuatannya masih membutuhkan waktu yang lama. Menurut hasil wawancara dengan *subject* *matter* dibutuhkan sebuah aplikasi SIG berbasis *web* yang dapat di-*generate* dengan mudah dan cepat serta dapat memfasilitasi petugas untuk menginput data dengan berbagai tema.
3. Berdasarkan analisis sistem berjalan dan rancangan sistem usulan, sistem yang dibuat ditetapkan berbasis *web*.
4. Implementasi menggunakan bahasa *PHP* dan *javascript* dengan bantuan *Yii* *Framework* versi 2 dan *Geoserver* sebagai *server* data spasialnnya.
5. Berdasarkan hasil uji coba yang dilakukan, terlihat bahwa pada pertanyaan nomer 1 dan nomer 7 pada kuesioner *SUS* memiliki total nilai yang terendah. Hal ini dikarenakan sistem yang diusulkan masih baru sehingga pengguna butuh beradaptasi dengan sistem yang diusulkan.
6. **Saran**

Adapun saran untuk penelitian ataupun pengembangan layanan visualisasi ini lebih lanjut adalah sebagai berikut.

1. Menambah analisis sederhana terhadap visualisasi peta tematik maupun grafik yang ditampilkan. Hal ini akan menambah informasi yang dihasilkan oleh aplikasi yang bersumber pada data.
2. Menambahkan fitur untuk membandingkan variabel-variabel antara satu wilayah dengan wilayah lainnya. Ini merupakan usulan saran dari beberapa pengguna aplikasi yang dapat memperkaya fasilitas aplikasi.
3. Menambahkan fitur *download* pada peta dalam format bentuk *file jpg* atau *pdf* dan fitur *share* ke media sosial atau pun blog pada halaman peta dan visualisasi grafik yang diinginkan. Berdasarkan pengalaman dari beberapa aplikasi berbasis *web* untuk masyarakat umum biasanya terdapat fasilitas ini. Tujuannya adalah setiap orang dapat dengan mudah menyebarkan informasi yang dia dapat dari aplikasi kepada orang lain.
4. Layanan ini dapat dikembangkan menjadi sebuah layanan visualisasi sistem informasi geografis yang lebih besar dengan membuat modul-modul khusus dari data yang dihasilkan dari kegiatan BPS baik berupa sensus maupun survei.

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**LAMPIRAN**

**Lampiran 1. Script SiteController.php**

<?php

**namespace** frontend\controllers;

**use** Yii;

**use** common\models\LoginForm;

**use** frontend\models\PasswordResetRequestForm;

**use** frontend\models\ResetPasswordForm;

**use** frontend\models\SignupForm;

**use** frontend\models\ContactForm;

**use** yii\base\InvalidParamException;

**use** yii\web\BadRequestHttpException;

**use** yii\web\Controller;

**use** yii\filters\VerbFilter;

**use** yii\filters\AccessControl;

**use** yii\db\Query;

**use** yii\helpers\Json;

**use** yii\web\Response;

/\*\*

\* Site controller

\*/

**class** SiteController **extends** Controller

{

/\*\*

\* @inheritdoc

\*/

**public** **function** behaviors()

{

**return** [

'access' => [

'class' => AccessControl::className(),

'only' => ['logout', 'signup'],

'rules' => [

[

'actions' => ['signup'],

'allow' => **true**,

'roles' => ['?'],

],

[

'actions' => ['logout'],

'allow' => **true**,

'roles' => ['@'],

],

],

],

'verbs' => [

'class' => VerbFilter::className(),

'actions' => [

'logout' => ['post'],

],

],

];

}

/\*\*

\* @inheritdoc

\*/

**public** **function** actions()

{

**return** [

'error' => [

'class' => 'yii\web\ErrorAction',

],

'captcha' => [

'class' => 'yii\captcha\CaptchaAction',

'fixedVerifyCode' => YII\_ENV\_TEST ? 'testme' : **null**,

],

];

}

**public** **function** actionIndex()

{

**return** $this->render('index');

}

**public** **function** actionLogin()

{

**if** (!\Yii::$app->user->isGuest) {

**return** $this->goHome();

}

$model = **new** LoginForm();

**if** ($model->load(Yii::$app->request->post()) && $model->login()) {

**return** $this->goBack();

} **else** {

**return** $this->render('login', [

'model' => $model,

]);

}

}

**public** **function** actionLogout()

{

Yii::$app->user->logout();

**return** $this->goHome();

}

**public** **function** actionContact()

{

$model = **new** ContactForm();

**if** ($model->load(Yii::$app->request->post()) && $model->validate()) {

**if** ($model->sendEmail(Yii::$app->params['adminEmail'])) {

Yii::$app->session->setFlash('success', 'Thank you for contacting us. We will respond to you as soon as possible.');

} **else** {

Yii::$app->session->setFlash('error', 'There was an error sending email.');

}

**return** $this->refresh();

} **else** {

**return** $this->render('contact', [

'model' => $model,

]);

}

}

**public** **function** actionAbout()

{

**return** $this->render('about');

}

**public** **function** actionSignup()

{

$model = **new** SignupForm();

**if** ($model->load(Yii::$app->request->post())) {

**if** ($user = $model->signup()) {

**if** (Yii::$app->getUser()->login($user)) {

**return** $this->goHome();

}

}

}

**return** $this->render('signup', [

'model' => $model,

]);

}

**public** **function** actionRequestPasswordReset()

{

$model = **new** PasswordResetRequestForm();

**if** ($model->load(Yii::$app->request->post()) && $model->validate()) {

**if** ($model->sendEmail()) {

Yii::$app->getSession()->setFlash('success', 'Check your email for further instructions.');

**return** $this->goHome();

} **else** {

Yii::$app->getSession()->setFlash('error', 'Sorry, we are unable to reset password for email provided.');

}

}

**return** $this->render('requestPasswordResetToken', [

'model' => $model,

]);

}

**public** **function** actionResetPassword($token)

{

**try** {

$model = **new** ResetPasswordForm($token);

} **catch** (InvalidParamException $e) {

**throw** **new** BadRequestHttpException($e->getMessage());

}

**if** ($model->load(Yii::$app->request->post()) && $model->validate() && $model->resetPassword()) {

Yii::$app->getSession()->setFlash('success', 'New password was saved.');

**return** $this->goHome();

}

**return** $this->render('resetPassword', [

'model' => $model,

]);

}

**public** **function** actionData($wil,$var,$kat){

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$namaWilparent = \common\models\Wilayah::findOne(['id' => $wil,]);

$query = **new** Query;

$query->select('fakta.id\_wilayah, wilayah.nama as nama\_wilayah, fakta.nilai, fakta.tahun, variabel.satuan, variabel.nama as nama\_variabel, kategori.nama as nama\_kategori, fakta.id\_bulan, bulan.nama as nama\_bulan')

->from('fakta')

->distinct('wilayah.id ,fakta.nilai,fakta.tahun,variabel.satuan,fakta.id\_bulan,bulan.nama')

->join('INNER JOIN', 'wilayah','fakta.id\_wilayah=wilayah.id')

->join('INNER JOIN', 'variabel','fakta.id\_variabel=variabel.id')

->join('INNER JOIN', 'bulan','fakta.id\_bulan=bulan.id')

->join('INNER JOIN', 'kategori','fakta.id\_kategori=kategori.id')

->orderBy('fakta.tahun,fakta.id\_bulan')

->where('wilayah.id\_parent='.$wil.' AND fakta.id\_variabel='.$var.' AND fakta.id\_kategori='.$kat);

$rows = $query->all();

$command = $query->createCommand();

$rows = $command->queryAll();

**return** (['data'=>$rows,'namaparent'=>$namaWilparent['nama']]);

}

**public** **function** actionCekdata($wil,$var,$kat){

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$query = **new** Query;

$query->select('fakta.id\_wilayah, wilayah.nama as nama\_wilayah, fakta.nilai, fakta.tahun, variabel.satuan, variabel.nama as nama\_variabel, kategori.nama as nama\_kategori, fakta.id\_bulan, bulan.nama as nama\_bulan')

->from('fakta')

->distinct('wilayah.id ,fakta.nilai,fakta.tahun,variabel.satuan,fakta.id\_bulan,bulan.nama')

->join('INNER JOIN', 'wilayah','fakta.id\_wilayah=wilayah.id')

->join('INNER JOIN', 'variabel','fakta.id\_variabel=variabel.id')

->join('INNER JOIN', 'bulan','fakta.id\_bulan=bulan.id')

->join('INNER JOIN', 'kategori','fakta.id\_kategori=kategori.id')

->orderBy('fakta.tahun,fakta.id\_bulan')

->where('wilayah.id\_parent='.$wil.' AND fakta.id\_variabel='.$var.' AND fakta.id\_kategori='.$kat);

$rows = $query->all();

$command = $query->createCommand();

$rows = $command->queryAll();

**if**($rows!=**null**) **return**(['data'=>1,]);

**else** **return**(['data'=>0,]);

}

**public** **function** actionChildTopik() {

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$out = [];

**if** (**isset**($\_POST['depdrop\_parents'])&&end($\_POST['depdrop\_parents'])!=**null**) {

$id = end($\_POST['depdrop\_parents']);

$query = **new** Query;

$query->select('topik.id, topik.nama')

->from('fakta')

->distinct('topik.id')

->join('INNER JOIN', 'wilayah','fakta.id\_wilayah=wilayah.id')

->join('INNER JOIN', 'variabel','fakta.id\_variabel=variabel.id')

->join('INNER JOIN', 'topik','variabel.id\_topik=topik.id')

->orderBy('topik.nama')

->where('wilayah.id\_parent='.$id);

$list = $query->all();

$selected = **null**;

**if** ($id != **null** && **count**($list) > 0) {

$selected = '';

**foreach** ($list **as** $i => $topik) {

//$topik[$i]=$variabel['namaTopik'];

//$namaVariabel=\frontend\models\Variabel::find()->andWhere(['kode'=>$account['kode\_variabel']])->asArray()->all();

$out[] = ['id' => $id.$topik['id'], 'name' => $topik['nama']];

**if** ($i == 0) {

$selected = $id.$topik['id'];

}

}

// Shows how you can preselect a value

**return** (['output' => $out, 'selected'=>$selected]);

}

}

**return** (['output' => '', 'selected'=>'']);

}

**public** **function** actionChildVariabel() {

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$out = [];

**if** (**isset**($\_POST['depdrop\_parents'])&&end($\_POST['depdrop\_parents'])!=**null**) {

$id = end($\_POST['depdrop\_parents']);

$l=strlen($id)-10;

$idTop=substr($id,10,$l);

$idWil=substr($id,0,10);

$query = **new** Query;

$query->select('variabel.id, variabel.nama')

->from('fakta')

->distinct('variabel.id')

->join('INNER JOIN', 'wilayah','fakta.id\_wilayah=wilayah.id')

->join('INNER JOIN', 'variabel','fakta.id\_variabel=variabel.id')

->join('INNER JOIN', 'topik','variabel.id\_topik=topik.id')

->orderBy('variabel.nama')

->where('topik.id='.$idTop.' AND wilayah.id\_parent='.$idWil);

$list = $query->all();

$selected = **null**;

**if** ($id != **null** && **count**($list) > 0) {

$selected = '';

**foreach** ($list **as** $i => $variabel) {

//$topik[$i]=$variabel['namaTopik'];

//$namaVariabel=\frontend\models\Variabel::find()->andWhere(['kode'=>$account['kode\_variabel']])->asArray()->all();

$out[] = ['id' => $idWil.$variabel['id'], 'name' => $variabel['nama']];

**if** ($i == 0) {

$selected = $idWil.$variabel['id'];

}

}

// Shows how you can preselect a value

**return** (['output' => $out, 'selected'=>$selected]);

}

}

**return** (['output' => '', 'selected'=>'']);

}

**public** **function** actionChildKategori() {

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$out = [];

**if** (**isset**($\_POST['depdrop\_parents'])&&end($\_POST['depdrop\_parents'])!=**null**) {

$id = end($\_POST['depdrop\_parents']);

$l=strlen($id)-10;

$idVar=substr($id,10,$l);

$idWil=substr($id,0,10);

$query = **new** Query;

$query->select('kategori.id, kategori.nama')

->from('fakta')

->distinct('kategori.id')

->join('INNER JOIN', 'wilayah','fakta.id\_wilayah=wilayah.id')

->join('INNER JOIN', 'variabel','fakta.id\_variabel=variabel.id')

->join('INNER JOIN', 'kategori','fakta.id\_kategori=kategori.id')

->orderBy('kategori.nama')

->where('variabel.id='.$idVar.' AND wilayah.id\_parent='.$idWil);

$list = $query->all();

//$list = \common\models\Fakta::findBySql('SELECT DISTINCT id\_variabel FROM fakta')->asArray()->all();

//SELECT DISTINCT topik.id, topik.nama FROM fakta

//RIGHT JOIN topik ON fakta.id\_variabel=topik.id

$selected = **null**;

**if** ($id != **null** && **count**($list) > 0) {

$selected = '';

**foreach** ($list **as** $i => $variabel) {

//$topik[$i]=$variabel['namaTopik'];

//$namaVariabel=\frontend\models\Variabel::find()->andWhere(['kode'=>$account['kode\_variabel']])->asArray()->all();

$out[] = ['id' => $variabel['id'], 'name' => $variabel['nama']];

**if** ($i == 0) {

$selected = $variabel['id'];

}

}

// Shows how you can preselect a value

**return** (['output' => $out, 'selected'=>$selected]);

}

}

**return** (['output' => '', 'selected'=>'']);

}

**public** **function** actionChildWilayah() {

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

$out = [];

**if** (**isset**($\_POST['depdrop\_parents'])&&end($\_POST['depdrop\_parents'])!=**null**) {

$id = end($\_POST['depdrop\_parents']);

$query = **new** Query;

$query->select('id,nama')

->from('wilayah')

->where('tipe='.$id);

$list = $query->all();

$selected = **null**;

**if** ($id != **null** && **count**($list) > 0) {

$selected = '';

**foreach** ($list **as** $i => $account) {

//$namaVariabel=\frontend\models\Variabel::find()->andWhere(['kode'=>$account['kode\_variabel']])->asArray()->all();

//$wilayah = \common\models\Wilayah::findOne(['id' => $account['id\_wilayah'],]);

$out[] = ['id' => $account['id'], 'name' => $account['nama']];

**if** ($i == 0) {

$selected = $account['id'];

}

}

// Shows how you can preselect a value

**return** (['output' => $out, 'selected'=>$selected]);

}

}

**return** (['output' => '', 'selected'=>'']);

}

// controlller sapu

**public** **function** actionDatasum($twil,$nwil,$namawil){

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

//Yii::$app->response->format = 'jsongis';

**switch** ($twil) {

**case** 1 : {$query = **new** Query;

$query->select("COUNT(DISTINCT `R102N`) AS jkota, COUNT(DISTINCT `R103N`)as jkec, COUNT(DISTINCT `R104N`) as jdesa")

->from('kepri')

->where('R101N='."'".$namawil."'");} **break**;

**case** 2 : {$query = **new** Query;

$query->select("COUNT(DISTINCT `R102N`) AS jkota, COUNT(DISTINCT `R103N`)as jkec, COUNT(DISTINCT `R104N`) as jdesa")

->from('kepri')

->where('R102N='."'".$namawil."'");} **break**;

**case** 3 : {$query = **new** Query;

$query->select("COUNT(DISTINCT `R102N`) AS jkota, COUNT(DISTINCT `R103N`)as jkec, COUNT(DISTINCT `R104N`) as jdesa")

->from('kepri')

->where('R103N='."'".$namawil."'");} **break**;

}

$rows = $query->all();

$command = $query->createCommand();

$rows = $command->queryAll();

**return** (['data'=>$rows]);

}

**public** **function** actionDatavis($nwil,$twil){

\Yii::$app->response->format = \yii\web\Response::FORMAT\_JSON;

//Yii::$app->response->format = 'jsongis';

$query = **new** Query;

$query->select('LEVEL\_WILA, ID\_WIL, R101, R101N, R102N, R103N, R104N, R401, R404A, R501A1, R501A2, R501B,

R503, R507A,R701A\_K2,R701A\_K3,R701B\_K2, R701B\_K3, R701C\_K2, R701C\_K3, R701D\_K2,

R701D\_K3, R701E\_K2, R701E\_K3, R701F\_K2, R701F\_K3, R701G\_K2, R701G\_K3, R701H\_K3,

R701I\_K3, R704A\_K3, R704B\_K3, R704C\_K3, R704D\_K3, R704E\_K3, R704F\_K3, R704G\_K3,

R704H\_K3, R704I\_K3, R704J\_K3, R704K\_K3, R704L\_K3,R706A1, R706A2, R706B, R706C,

R706D,R1201A, R1201B, R1201C, R1201D, R1201E, R1201F, R1201G, R1201H, R1204A,

R1204B, R1205, R1206, R1209, R1210, R1211, R1215A\_K3, R1215B\_K3, R802, R803A,

R803B, R803C, R803D, R803E, R803F, R803G, R803H, R1305, R1303B, R601A\_K2, R601B\_K2,

R601C\_K2, R601D\_K2, R601E\_K2, R601F\_K2, R601G\_K2, R601H\_K2, R601I\_K2, R601J\_K2')

->from('kepri')

->where('ID\_WIL='.$nwil);

$rows = $query->all();

$command = $query->createCommand();

$rows = $command->queryAll();

**return** (['data'=>$rows]);

}

**public** **function** beforeAction($action) {

$this->enableCsrfValidation = **false**; // <-- here

**return** **parent**::beforeAction($action);

}

}

“… sengaja dikosongkan …”

**Lampiran 2. *Script* map.js**

**var** layerPopup**;** //popup

**var** map**;** //variabel untuk menampung peta

**var** kodewilayah**;**

**var** serie**;**

**var** indexTahun**=**0**;**

**var** jlhKelas **=** 4**;**

**var** metode **=** **[**'natural breaks'**,**'equal intervals'**,**'standard deviation'**,**'arithmetic progression'**,**'geometric progression'**,**'quantiles'**];**

**var** noMetode **=** 0**;**

//untuk posisi back dan forward

**var** lokasi **=** **new** Array**();**

**var** posisi **=** **-**1**;**

//warna

**var** noWarna **=** 0**;**

**var** warnaa **=** **new** Array**();**

**var** warnab **=** **new** Array**();**

**var** kelasWarna **=** **new** Array**();**

kelasWarna**[**9**]=[**8**,**7**,**6**,**5**,**4**,**3**,**2**,**1**,**0**];**

kelasWarna**[**8**]=[**8**,**7**,**6**,**5**,**4**,**3**,**2**,**1**];**

kelasWarna**[**7**]=[**7**,**6**,**5**,**4**,**3**,**2**,**1**];**

kelasWarna**[**6**]=[**7**,**6**,**5**,**4**,**3**,**1**];**

kelasWarna**[**5**]=[**7**,**6**,**4**,**3**,**1**];**

kelasWarna**[**4**]=[**7**,**6**,**4**,**2**];**

kelasWarna**[**3**]=[**7**,**4**,**2**];**

warnaa**[**0**]=[**'#67000D'**,**'#A50F15'**,**'#CB181D'**,**'#EF3B2C'**,**'#FB6A4A'**,**'#FC9272'**,**'#FCBBA1'**,**'#FEE0D2'**,**'#FFF5F0'**];**//merah

warnaa**[**1**]=[**'#3F007D'**,**'#54278F'**,**'#6A51A3'**,**'#807DBA'**,**'#9E9AC8'**,**'#BCBDDC'**,**'#DADAEB'**,**'#EFEDF5'**,**'#FCFBFD'**];**//ungu

warnaa**[**2**]=[**'#08306B'**,**'#08519C'**,**'#2171B5'**,**'#4292C6'**,**'#6BAED6'**,**'#9ECAE1'**,**'#C6DBEF'**,**'#DEEBF7'**,**'#F7FBFF'**];**//biru

warnaa**[**3**]=[**'#00441B'**,**'#006D2C'**,**'#238B45'**,**'#41AB5D'**,**'#74C476'**,**'#A1D99B'**,**'#C7E9C0'**,**'#E5F5E0'**,**'#F7FCF5'**];**//hijau

warnaa**[**4**]=[**'#662506'**,**'#993404'**,**'#CC4C02'**,**'#EC7014'**,**'#FE9929'**,**'#FEC44F'**,**'#FEE391'**,**'#FFF7BC'**,**'#FFFFE5'**];**//orange

warnaa**[**5**]=[**'#7F0000'**,**'#B30000'**,**'#D7301F'**,**'#EF6548'**,**'#FC8D59'**,**'#FDBB84'**,**'#FDD49E'**,**'#FEE8C8'**,**'#FFF7EC'**];**//merah tua

warnaa**[**6**]=[**'#49006A'**,**'#7A0177'**,**'#AE017E'**,**'#DD3497'**,**'#F768A1'**,**'#FA9FB5'**,**'#FCC5C0'**,**'#FDE0DD'**,**'#FFF7F3'**];**//merah ungu

warnaa**[**7**]=[**'#081D58'**,**'#253494'**,**'#225EA8'**,**'#1D91C0'**,**'#41B6C4'**,**'#7FCDBB'**,**'#C7E9B4'**,**'#EDF8B1'**,**'#FFFFD9'**];**//hijau biru

warnaa**[**8**]=[**'#004529'**,**'#006837'**,**'#238443'**,**'#41AB5D'**,**'#78C679'**,**'#ADDD8E'**,**'#D9F0A3'**,**'#F7FCB9'**,**'#FFFFE5'**];**//hijau kuning

warnab**[**0**]=[**'#01665E'**,**'#35978F'**,**'#80CDC1'**,**'#C7EAE5'**,**'#F5F5F5'**,**'#F6E8C3'**,**'#DFC27D'**,**'#BF812D'**,**'#8C510A'**];**//biru coklat

warnab**[**1**]=[**'#4D9221'**,**'#7FBC41'**,**'#B8E186'**,**'#E6F5D0'**,**'#F7F7F7'**,**'#FDE0EF'**,**'#F1B6DA'**,**'#DE77AE'**,**'#C51B7D'**];**//hijau ungu

warnab**[**2**]=[**'#1B7837'**,**'#5AAE61'**,**'#A6DBA0'**,**'#D9F0D3'**,**'#F7F7F7'**,**'#E7D4E8'**,**'#C2A5CF'**,**'#9970AB'**,**'#762A83'**];**//hijau ungu tua

warnab**[**3**]=[**'#542788'**,**'#8073AC'**,**'#B2ABD2'**,**'#D8DAEB'**,**'#F7F7F7'**,**'#FEE0B6'**,**'#FDB863'**,**'#E08214'**,**'#B35806'**];**//ungu oranye

warnab**[**4**]=[**'#2166AC'**,**'#4393C3'**,**'#92C5DE'**,**'#D1E5F0'**,**'#F7F7F7'**,**'#FDDBC7'**,**'#F4A582'**,**'#D6604D'**,**'#B2182B'**];**//biru merah

warnab**[**5**]=[**'#4D4D4D'**,**'#999999'**,**'#E0E0E0'**,**'#FFFFFF'**,**'#FFFFFF'**,**'#FDDBC7'**,**'#F4A582'**,**'#EF8A62'**,**'#B2182B'**];**//hitam merah

warnab**[**6**]=[**'#1A9850'**,**'#66BD63'**,**'#A6D96A'**,**'#D9EF8B'**,**'#FFFFBF'**,**'#FEE08B'**,**'#FDAE61'**,**'#F46D43'**,**'#D73027'**];**//hijau merah

warnab**[**7**]=[**'#3288BD'**,**'#66C2A5'**,**'#ABDDA4'**,**'#E6F598'**,**'#FFFFBF'**,**'#FEE08B'**,**'#FDAE61'**,**'#F46D43'**,**'#D53E4F'**];**//hijau biru merah

**var** aVar**;** //tampung kode variabel

**var** aKat**;** //tampung kode Kategori

**var** layerprovinsi**=**0**;**

**var** peta**;**

**var** judul**;**//judul peta

//array untuk menampung idprovinsi, tahun, bulan, satuan nama provinsi, dan nilai

**var** dataTabel **=** **new** Array**();**

**var** jumlah**=new** Array**();**

**var** tahun**=new** Array**();**

**var** idProvinsi**=new** Array**();**

**var** namaProvinsi**=new** Array**();**

**var** bulan**=new** Array**();**

**var** satuan**=new** Array**();**

// add compas

**var** compas **=** L**.**control**({**position**:** 'topleft'**});**

compas**.**onAdd **=** **function** **(**map**)** **{**

**var** div **=** L**.**DomUtil**.**create**(**'div'**,** 'compas'**);**

div**.**innerHTML **=**'<img src="logo/compass2.png" width="25px">'**;**

**return** div**;**

**}**

// menampilkan info wilayah ketika di hover

**var** info **=** L**.**control**();**

info**.**onAdd **=** **function** **(**map**)** **{**

**this.**\_div **=** L**.**DomUtil**.**create**(**'div'**,** 'info'**);**

**this.**update**();**

**return** **this.**\_div**;**

**};**

info**.**update **=** **function** **(**props**)** **{**

**this.**\_div**.**innerHTML **=(**props **?**

'<b>' **+** namaProvinsi**[**props**.**ID**]** **+** '</b><br />' **+** dataTabel**[**vVal**][**props**.**ID**]**

**:** 'Hover over a state'**);**

**};**

//membuat Lagenda

**var** grades**=new** Array**();**

**function** legenda**(){**

$**(**'#legend'**).**html**(**''**);**

$**(**'#legend'**).**append**(**'<div class="row"><div class="col-md-6"><h4>Legenda</h4></div><div class="col-md-6"><a class="pull-right" style="cursor: pointer" data-toggle="modal" data-target="#myModal"><span class="glyphicon glyphicon-list" data-toggle="tooltip" data-placement="top" title="Ubah Legenda"></span></a></div></div>'**);**

**for** **(var** i **=** 0**;** i **<** grades**.**length**;** i**++)** **{**

$**(**'#legend'**).**append**(**'<i style="background:' **+** getColor**(**i**)** **+** '"></i><span> ' **+** grades**[**i**]** **+** '</span><br>'**);**

**}**

**}**

**var** vVal**;**

//style untuk polygon

**var** styleProvinsi **={**

'fillColor'**:**'#ff0000'**,**

'fillOpacity'**:**0.6**,**

'color'**:**'#ffffff'**,**

'opacity'**:**1**,**

'weight'**:**2**,**

'dashArray'**:**3**,**

**}**

**var** styleSelected **={**

'weight'**:** 5**,**

'color'**:** '#666'**,**

'dashArray'**:** ''**,**

'fillOpacity'**:** 0.7

**}**

**function** initializez**()**

**{**

//panggil base map

map **=** L**.**map**(**'map'**).**setView**([-**1.889306**,**114.697266**],** 4**);**

**var** osmUrl**=**'http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png'**;**

**var** osmAttrib**=**'BPS RI'**;**

**var** osm2 **=** **new** L**.**TileLayer**(**osmUrl**,** **{**minZoom**:** 0**,** maxZoom**:** 13**,** attribution**:** osmAttrib **}).**addTo**(**map**);**

**var** defaultLayer **=** L**.**tileLayer**.**provider**(**'Esri.WorldTopoMap'**).**addTo**(**map**);**

**var** baseLayers **=** **{**

'Thunderforest Landscape'**:** L**.**tileLayer**.**provider**(**'Thunderforest.Landscape'**),**

'MapQuest Aerial'**:** L**.**tileLayer**.**provider**(**'MapQuestOpen.Aerial'**),**

'Stamen Watercolor'**:** L**.**tileLayer**.**provider**(**'Stamen.Watercolor'**),**

'Esri WorldStreetMap'**:** L**.**tileLayer**.**provider**(**'Esri.WorldStreetMap'**),**

'Esri DeLorme'**:** L**.**tileLayer**.**provider**(**'Esri.DeLorme'**),**

'Esri WorldImagery'**:** L**.**tileLayer**.**provider**(**'Esri.WorldImagery'**),**

'Esri WorldTerrain'**:** L**.**tileLayer**.**provider**(**'Esri.WorldTerrain'**),**

'Esri WorldShadedRelief'**:** L**.**tileLayer**.**provider**(**'Esri.WorldShadedRelief'**),**

'Esri WorldPhysical'**:** L**.**tileLayer**.**provider**(**'Esri.WorldPhysical'**),**

'Esri OceanBasemap'**:** L**.**tileLayer**.**provider**(**'Esri.OceanBasemap'**),**

'Esri NatGeoWorldMap'**:** L**.**tileLayer**.**provider**(**'Esri.NatGeoWorldMap'**),**

'Esri WorldGrayCanvas'**:** L**.**tileLayer**.**provider**(**'Esri.WorldGrayCanvas'**),**

'Acetate'**:** L**.**tileLayer**.**provider**(**'Acetate'**)**

**};**

L**.**control**.**layers**(**baseLayers**,{**collapsed**:** **true}).**addTo**(**map**);**

**var** skala **=** L**.**control**.**scale**({**position**:**'bottomright'**}).**addTo**(**map**);**

compas**.**addTo**(**map**);**

info**.**addTo**(**map**);**

warnalegenda**();**

**}**

//highlight ketika mouse diarahkan

**function** highlightFeature**(**e**)**

**{**

**var** layer**=**e**.**target**;**

layer**.**setStyle**({**

color**:** '#666'**,**

dashArray**:** ''**,**

fillOpacity**:** 0.9**,**

**});**

**if** **(!**L**.**Browser**.**ie **&&** **!**L**.**Browser**.**opera**)** **{**

layer**.**bringToFront**();**

**}**

info**.**update**(**layer**.**feature**.**properties**);**

**}**

//kembalikan style ketika tidak ditunjuk oleh mouse

**function** resetHighlight**(**e**)** **{**

**var** layer**=**e**.**target**;**

layer**.**setStyle**({**

color**:** 'white'**,**

dashArray**:** ''**,**

fillOpacity**:** 0.9**,**

**});**

info**.**update**();**

**}**

**function** zoomToFeature**(**e**)** **{**

map**.**fitBounds**(**e**.**target**.**getBounds**());**

calldata**(**e**.**target**.**feature**.**properties**.**ID**);**

**}**

**function** callProvMap**(**aWil**)**

**{**

//ajax untuk memanggil polygon provinsi dari geoserver

//loadingt(20);

$**.**ajax**({**

url**:** '?r=geoserver-url/load-peta&idWil='**+**aWil**,**

type **:** 'POST'**,**

dataType **:** 'json'**,**

success**:** **function(**data**)**

**{**

kodewilayah**=**aWil**;**

**if(**aWil**!=**lokasi**[**posisi**])**

**{**lokasi**[(**posisi**+**1**)]** **=** aWil**;**

posisi**++;**

**if(**posisi**>**0**)** $**(**'#untukBack'**).**html**(**'<span class="glyphicon glyphicon-arrow-left" style="cursor: pointer" aria-hidden="true" data-toggle="tooltip" data-placement="top" title="Ke Peta Level Sebelumnya" onclick="petaBack()"></span>'**);**

**if(**posisi**==(**lokasi**.**length**-**1**))** $**(**'#untukForward'**).**html**(**'<span class="glyphicon glyphicon-arrow-right" style="color: #d9d9d9;" aria-hidden="true"></span>'**);**

**else** $**(**'#untukForward'**).**html**(**'<span class="glyphicon glyphicon-arrow-right" style="cursor: pointer" aria-hidden="true"data-toggle="tooltip" data-placement="top" title="Ke Peta Selanjutnya (forward)" onclick="petaNext()"></span>'**);**

**}**

map**.**removeLayer**(**layerprovinsi**);** //hapus layer sebelumnya

//kasih layer geoJson

layerprovinsi**=**L**.**geoJson**(**data**,{**style**:**styleProvinsi**}).**addTo**(**map**);**

map**.**fitBounds**(**layerprovinsi**.**getBounds**());**

//kasih warna

setVariableTahun**(**tahun**[**indexTahun**]);**

loadingt**(**100**);**

**}**

**});**

**}**

**function** setVariableTahun**(**valTahun**)** **{**

vVal**=**valTahun**;**

**var** jp**=new** Array**();**

**var** npr**=new** Array**();**

**var** i**=**0**;**

//tampung data yang akan diwarnai

idProvinsi**.**forEach**(function(**untukSeries**)** **{**

npr**[**i**]=**namaProvinsi**[**untukSeries**];**

jp**[**i**]=**dataTabel**[**valTahun**][**untukSeries**];**

i**++;**

**});**

//menutup popup

**if** **(**layerPopup **&&** map**)** **{**

map**.**closePopup**(**layerPopup**);**

layerPopup **=** null**;**

**}**

serie **=** **new** geostats**(**jp**);**

$**(**'#rata-rata'**).**html**(**'<b>'**+**serie**.**mean**().**toFixed**(**2**)+**'</b>'**);**

$**(**'#nilai-min'**).**html**(**'<b>'**+**serie**.**min**()+**'</b>'**);**

$**(**'#nilai-max'**).**html**(**'<b>'**+**serie**.**max**()+**'</b>'**);**

$**(**'#varian'**).**html**(**'<b>'**+**serie**.**variance**().**toFixed**(**2**)+**'</b>'**);**

$**(**'#s-d'**).**html**(**'<b>'**+**serie**.**stddev**().**toFixed**(**2**)+**'</b>'**);**

$**(**'#kov'**).**html**(**'<b>'**+**serie**.**cov**().**toFixed**(**2**)+**'</b>'**);**

//metode

**if(**noMetode**==**0**)** serie**.**getClassJenks**(**jlhKelas**);**

**else** **if(**noMetode**==**1**)** serie**.**getClassEqInterval**(**jlhKelas**);**

**else** **if(**noMetode**==**2**)** serie**.**getClassStdDeviation**(**jlhKelas**);**

**else** **if(**noMetode**==**3**)** serie**.**getClassArithmeticProgression**(**jlhKelas**);**

**else** **if(**noMetode**==**4**)** serie**.**getClassGeometricProgression**(**jlhKelas**);**

**else** serie**.**getClassQuantile**(**jlhKelas**);**

grades **=** serie**.**ranges**;**

layerprovinsi**.**eachLayer**(function(**layer**)** **{**

**var** kodeprovinsi**=**layer**.**feature**.**properties**.**ID**;**

layer**.**setStyle**(**style**(**dataTabel**[**vVal**][**kodeprovinsi**]));**

layer**.**on**({**

mouseover**:** highlightFeature**,**

mouseout**:** resetHighlight**,**

dblclick **:** zoomToFeature**,**

click **:** grafikPetaline**,**

**});**

// layer.bindPopup('<div id="lineChart" style="width:300px; height:300px"></div>');

**});**

legenda**();** //tampilkan lagenda

grafikPeta**(**npr**,**jp**);**//tampilkan grafik dibawah peta

**}**

**function** style**(**nilaiData**)** **{**

**return** **{**

fillColor**:** getColor**(**serie**.**getRangeNum**(**nilaiData**)),**

weight**:** 2**,**

opacity**:** 1**,**

color**:** 'white'**,**

dashArray**:** ''**,**

fillOpacity**:** 0.9**,**

**};**

**}**

**function** calldatabaru**(){**

**var** aWil **=** $**(**'#wilayah-nama'**).**val**();**

aKat **=** $**(**'#kategori-nama'**).**val**();**

**var** aVarn **=** $**(**'#variabel-nama'**).**val**();**

aVar **=** aVarn**.**substring**(**10**);**

//sapu

**var** twil **=** $**(**'#tipewilayah-nama'**).**val**();**

**var** nwil **=** $**(**'#wilayah-nama'**).**val**();**

**var** namawil **=** $**(**'#wilayah-nama option:selected'**).**text**();**

calldatasum**(**twil**,**nwil**,**namawil**);**calldatavis**(**twil**,**nwil**);**

//sapu

calldata**(**aWil**);**

**}**

**function** getColor**(**indexWarna**)** **{**

**if(**noWarna**<**9**)** **return** warnaa**[**noWarna**][**kelasWarna**[**jlhKelas**][**indexWarna**]];**

**else** **return** warnab**[**noWarna**-**9**][**kelasWarna**[**jlhKelas**][**indexWarna**]];**

**}**

**function** loadingt**(**t**){**

**if(**t**==**0**){**

$**(**'#loadingmap'**).**html**(**'<img src="logo/ajax-loader.gif" style="margin-Left:46%">'**);**

**}**

**else** **{**

$**(**'#loadingmap'**).**html**(**''**);**

**}**

**}**

**function** zoomdefault**(){**

**if(**layerprovinsi**!=**0**)** map**.**fitBounds**(**layerprovinsi**.**getBounds**());**

**else** map**.**setView**(new** L**.**LatLng**(-**1.889306**,**114.697266**),** 4**);**

**}**

**function** petaBack**(){**

calldata**(**lokasi**[**posisi**-**1**]);**

posisi**=**posisi**-**2**;**

**if(**posisi**==-**1**){**$**(**'#untukBack'**).**html**(**'<span class="glyphicon glyphicon-arrow-left" style="color: #d9d9d9;" aria-hidden="true"></span>'**);}**

**}**

**function** petaNext**(){**

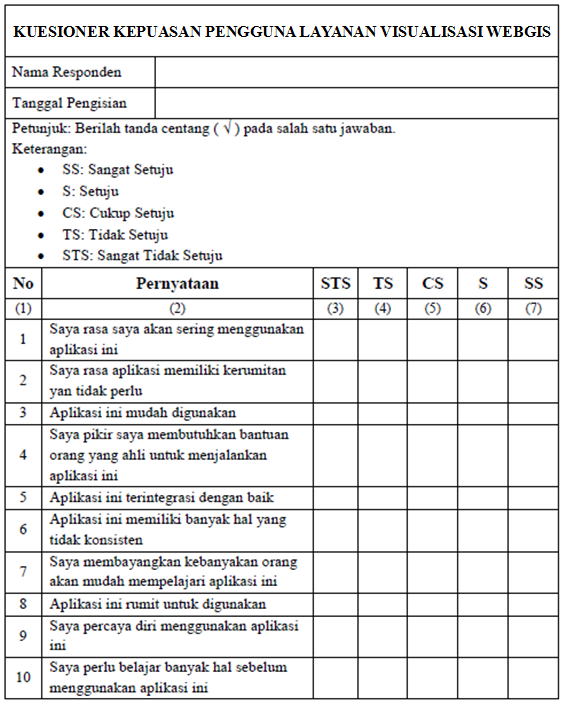
console**.**log**(**lokasi**[(**posisi**+**1**)]);**

calldata**(**lokasi**[(**posisi**+**1**)]);**

**}**

“… sengaja dikosongkan …”

**Lampiran 3. Kuesioner *System Usability Scale***



## RIWAYAT HIDUP

Penulis dilahirkan di Anggana Kabupaten Kutai Kartanegara pada tanggal 1 Otober 1993. Penulis merupakan anak kedua dari 7 bersaudara keluarga Bapak Busrani dan Ibu Sumiyati.

Pada Tahun 1999 penulis memulai pendidikan dasar di SDN 007 Anggana dan menamatkannya pada tahun 2005. Setelah itu penulis melanjutkan pendidikannya di SMP Negeri 1 Anggana dan lulus pada tahun 2008 dan diteruskan ke jenjang menengah atas di SMAN 3 Unggulan Tenggarong. Pada Tahun 2011, setelah lulus SMA penulis melanjutkan studinya di Sekolah Tinggi Ilmu Statistik dan mengambil jurusan komputasi statistik pada tahun kedua pendidikannya disana.