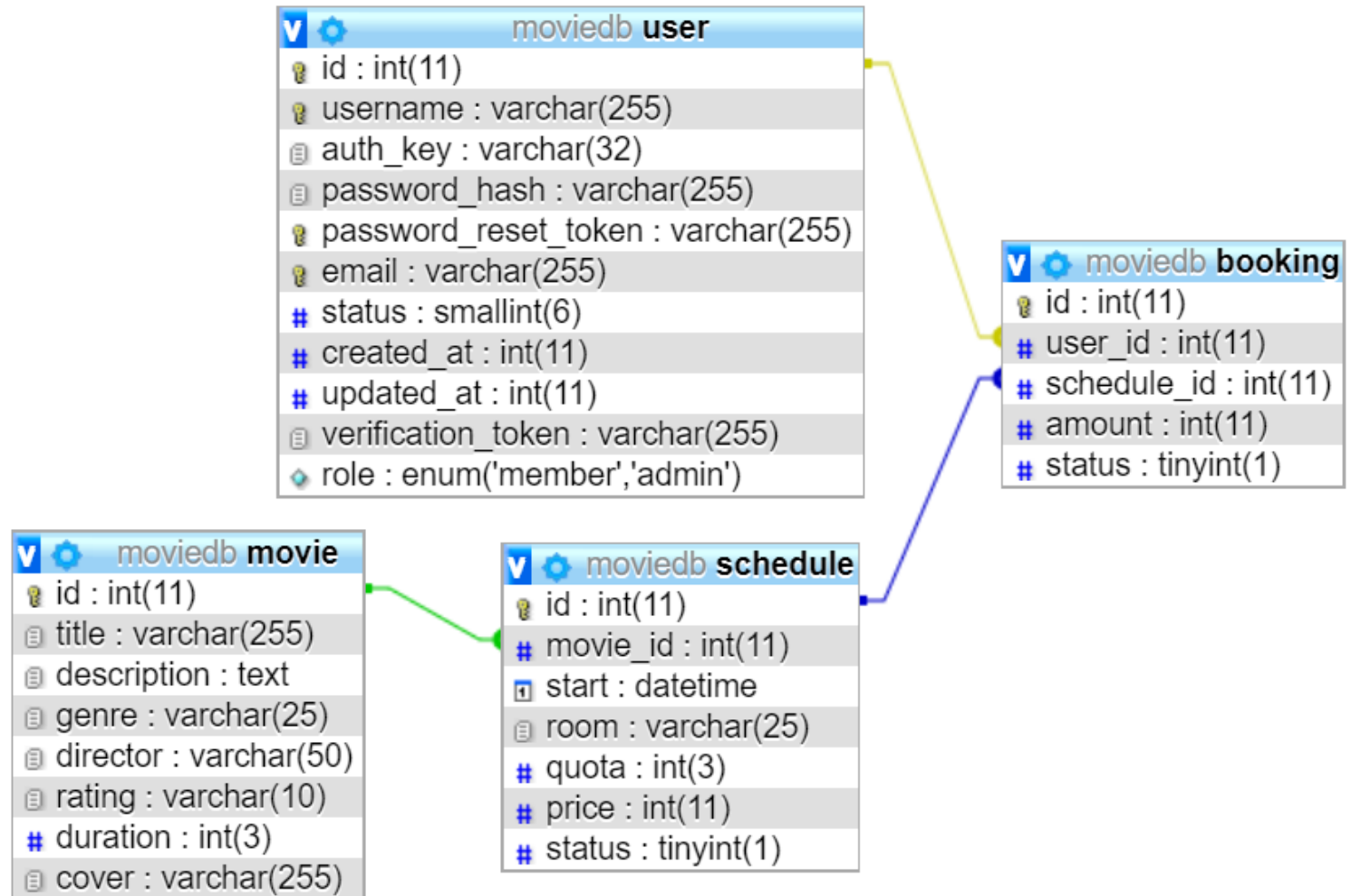# Pengembangan Aplikasi Berbasis Yii

Chapter II

Agenda

- ❖ Mempersiapkan Struktur Database
- ❖ Menggunakan Code Generator
- ❖ Modifikasi Hasil Code Generator
- ❖ Form Validasi
- ❖ Upload File
- ❖ Menggunakan Extension

Mempersiapkan Struktur Database

Nama database: go-cinemadb

Tabel Pada Database go-cinemadb

- Tabel movie
- Tabel schedule
- Tabel booking
- Tabel user

Struktur Tabel Movie

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	*None*		AUTO_INCREMENT
2	**title**	varchar(255)	latin1_swedish_ci		No	*None*		
3	**description**	text	latin1_swedish_ci		Yes	*NULL*		
4	**genre**	varchar(25)	latin1_swedish_ci		Yes	*NULL*		
5	**director**	varchar(50)	latin1_swedish_ci		Yes	*NULL*		
6	**rating**	varchar(10)	latin1_swedish_ci		Yes	*NULL*		
7	**duration**	int(3)			Yes	*NULL*		
8	**cover**	varchar(255)	latin1_swedish_ci		Yes	*NULL*		

Struktur Tabel Schedule

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	None		AUTO_INCREMENT
2	movie_id 🔑	int(11)			No	None		
3	start	datetime			No	None		
4	room	varchar(25)	latin1_swedish_ci		No	None		
5	quota	int(3)			No	None		
6	price	int(11)			No	None		
7	status	tinyint(1)			No	None		

Struktur Tabel Booking

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	*None*		AUTO_INCREMENT
2	user_id 🔑	int(11)			No	*None*		
3	schedule_id 🔑	int(11)			No	*None*		
4	amount	int(11)			No	*None*		
5	status	tinyint(1)			No	0		

Struktur Tabel User

php yii migrate
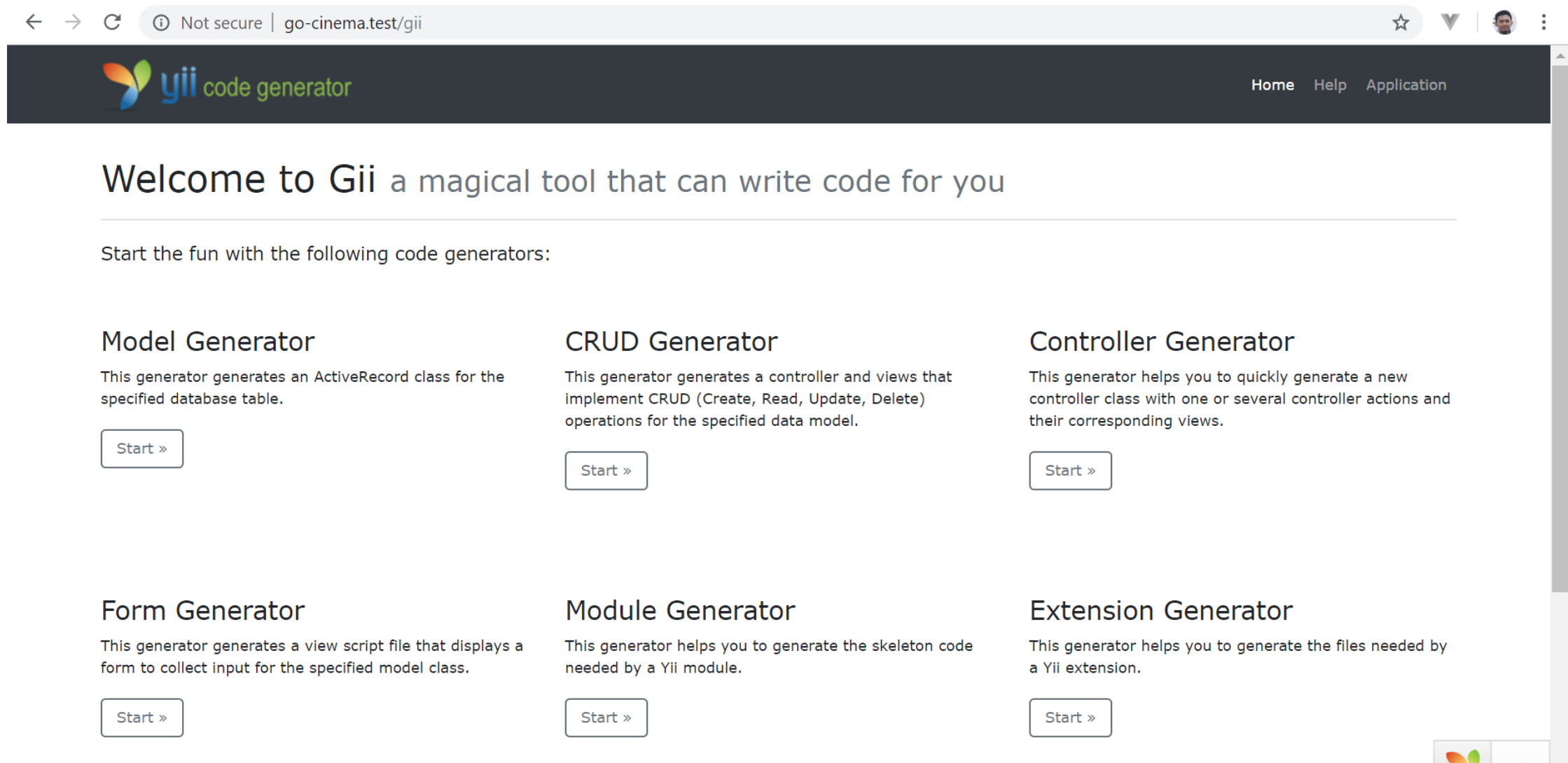
#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	None		AUTO_INCREMENT
2	username 🔑	varchar(255)	utf8_unicode_ci		No	None		
3	auth_key	varchar(32)	utf8_unicode_ci		No	None		
4	password_hash	varchar(255)	utf8_unicode_ci		No	None		
5	password_reset_token 🔑	varchar(255)	utf8_unicode_ci		Yes	NULL		
6	email 🔑	varchar(255)	utf8_unicode_ci		No	None		
7	status	smallint(6)			No	10		
8	created_at	int(11)			No	None		
9	updated_at	int(11)			No	None		
10	verification_token	varchar(255)	utf8_unicode_ci		Yes	NULL		
11	role	enum('member', 'admin')	utf8_unicode_ci		No	member		

Menggunakan Code Generator

Gii: Code Generator Yii

- Gii = tools official Yii dalam bentuk module untuk menggenerate kode program seperti model, view, controller, dsb.

- Gii bisa diakses melalui http://go-cinema.test/gii

http://go-cinema.test/gii

6 Generator Gii

❑ **Model Generator**

Untuk menggenerate class ActiveRecord (model) untuk tabel tertentu pada basis data.

❑ **CRUD Generator**

Untuk menggenerate operasi CRUD berdasarkan class model tertentu

❑ **Controller Generator**

Untuk menggenerate class Controller

❑ **Form Generator**

Untuk menggenerate tampilan formulir berdasarkan class model tertentu

❑ **Module Generator**

Untuk menggenerate template dari module di Yii, jika kita ingin membuat sub aplikasi.

❑ **Extension Generator**

Untuk menggenerate template dari extension Yii, untuk membuat extension sendiri.

Model Generator

Model Generator

Preview | Generate

Click on the above Generate button to generate the files selected below:

Type to filter

☑ Create ☑ Unchanged ☑ Overwrite

Code File ☑			Action	☑
models\Movie.php **diff**			overwrite	☑

Preview

The code has been generated successfully.

```
Generating code using template "C:\xampp\htdocs\movieapp\vendor\yiisoft\yii2-gii\src\generators\model/default"...
overwrote models\Movie.php
done!
```
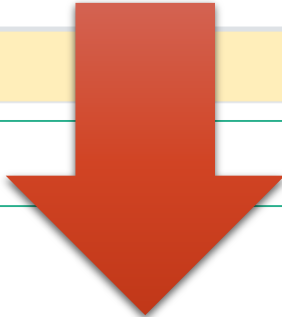
Cek Hasilnya di models/Movie.php

```php
<?php

namespace app\models;

use Yii;

/**
 * This is the model class for table "movie".
 *
 * @property int $id
 * @property string $title
 * @property string $description
 * @property string $genre
 * @property string $director
 * @property string $rating
 * @property int $duration
 * @property string $cover
 *
 * @property Schedule[] $schedules
 */
class Movie extends \yii\db\ActiveRecord
{
    /**
     * {@inheritdoc}
     */
    public static function tableName()
    {
        return 'movie';
    }

    /**
     * {@inheritdoc}
     */
    public function rules()
    {
        return [
            [['title'], 'required'],
```

```php
            [['description'], 'string'],
            [['duration'], 'integer'],
            [['title', 'cover'], 'string', 'max' => 255],
            [['genre'], 'string', 'max' => 25],
            [['director'], 'string', 'max' => 50],
            [['rating'], 'string', 'max' => 10],
        ];
    }

    /**
     * {@inheritdoc}
     */
    public function attributeLabels()
    {
        return [
            'id' => 'ID',
            'title' => 'Title',
            'description' => 'Description',
            'genre' => 'Genre',
            'director' => 'Director',
            'rating' => 'Rating',
            'duration' => 'Duration',
            'cover' => 'Cover',
        ];
    }

    /**
     * @return \yii\db\ActiveQuery
     */
    public function getSchedules()
    {
        return $this->hasMany(Schedule::className(), ['movie_id' => 'id']);
    }
}
```

CRUD Generator

Model Generator	›
CRUD Generator	›
Controller Generator	›
Form Generator	›
Module Generator	›
Extension Generator	›

CRUD Generator

This generator generates a controller and views that implement CRUD (Create, Read, Update, model.

Model Class

app\models\Movie

Search Model Class

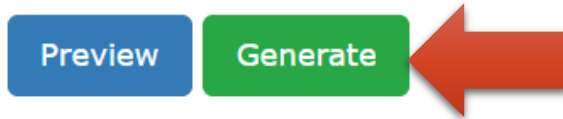app\models\MovieSearch

Controller Class

app\controllers\MovieController

Code Template

default (C:\xampp\htdocs\movieapp\vendor\yiisoft\yii2-gii\src\generators\crud\defa...

Preview

CRUD Generator

Preview | Generate

Click on the above `Generate` button to generate the files selected below:

Type to filter

☑ Create | ☑ Unchanged | ☑ Overwrite

Code File ☑	Action ☑
controllers\MovieController.php	unchanged
models\MovieSearch.php	create ☑
views\movie_form.php	create ☑
views\movie_search.php	create ☑
views\movie\create.php	create ☑
views\movie\index.php	unchanged
views\movie\update.php	create ☑
views\movie\view.php	unchanged

CRUD Generator

Preview

The code has been generated successfully.

```
Generating code using template "C:\xampp\htdocs\movieapp\vendor\yiisoft\yii2-gii\src\generators\crud/default"...
skipped controllers\MovieController.php
generated models\MovieSearch.php
generated views\movie\_form.php
generated views\movie\_search.php
generated views\movie\create.php
skipped views\movie\index.php
generated views\movie\update.php
skipped views\movie\view.php
done!
```

Cek Hasilnya

- @app/models/MovieSearch.php
- @app/views/movie/index.php
- @app/views/movie/view.php
- @app/views/movie/create.php
- @app/views/movie/update.php
- @app/views/movie/_form.php
- @app/views/movie/_search.php
- @app/controllers/MovieController.php

Ujicoba Hasil CRUD Generator

http://go-cinema.test/movie/index

Ujicoba Hasil CRUD Generator

Generate Tabel Lainnya

- Schedule

- Booking

- User
  - Khusus tabel user, nama modelnya diganti dengan customer

Model Generator

This generator generates an ActiveRecord class for the specified database table.

Table Name

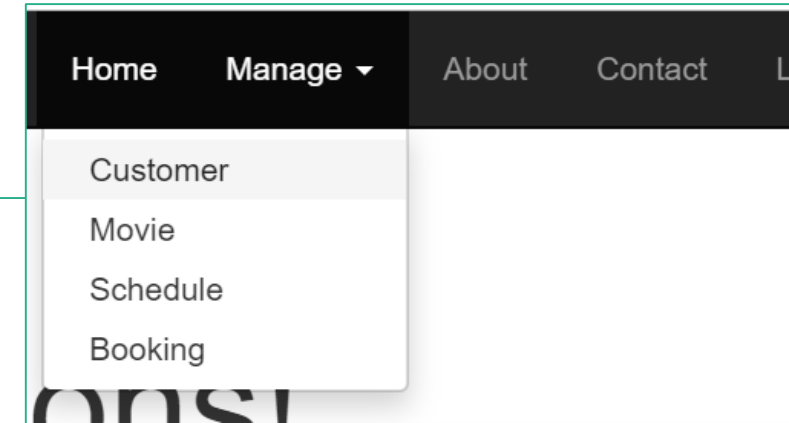```
user
```

Model Class Name

```
Customer
```

Modifikasi Code Hasil Generator

Modifikasi View: Menambahkan Menu

- @app\view\layouts\main.php
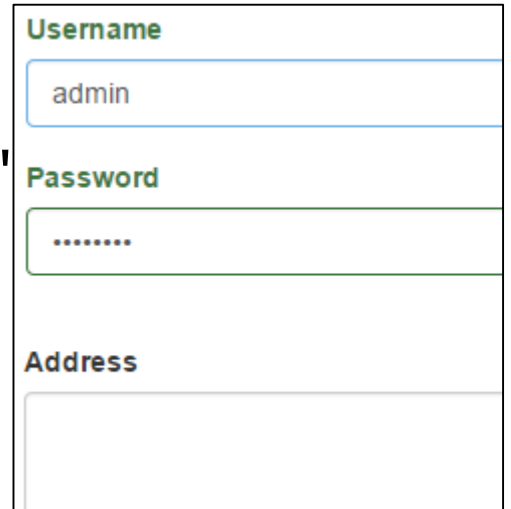
```php
echo Nav::widget([
        'options' => ['class' => 'navbar-nav navbar-right'],
        'items' => [
            ['label' => 'Home', 'url' => ['/site/index']],
            ['label' => 'Manage', 'items'=> [
                ['label' => 'Customer', 'url' => ['/customer/index']],
                ['label' => 'Movie', 'url' => ['/movie/index']],
                ['label' => 'Schedule', 'url' => ['/movie/index']],
                ['label' => 'Booking', 'url' => ['/movie/index']],
            ]],
```
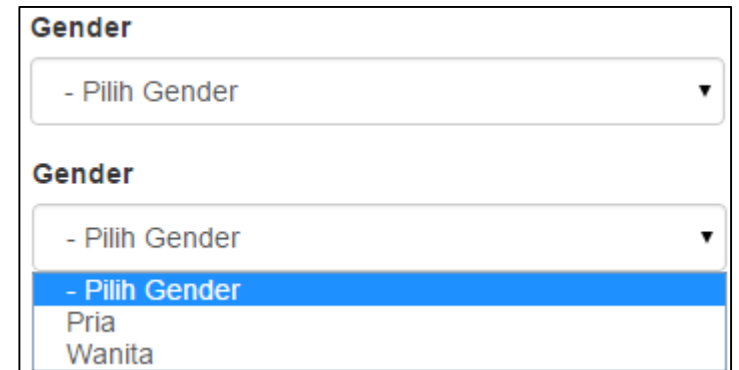
Modifikasi View: Form

File @app\views\movie_form.php

- **textInput**
  <?= $form->field($model, 'username')->textInput(['autofocus'

- **passwordInput**
  <?= $form->field($model, 'password')->passwordInput() ?>

- **textarea**
  <?= $form->field($model, 'body')->textarea(['rows' => 3]) ?>

- **dropDownList**
  <?= $form->field($model, 'gender')->dropDownList([
        '1' => 'Pria', '0' => 'Wanita',
  ], ['prompt' => '- Pilih Gender']) ?>

Modifikasi View: Form

- radioList

```
<?= $form->field($model, 'gender')->radioList([
    '1' => 'Pria', '0' => 'Wanita',
]) ?>
```

- listBox -> multiple

```
<?= $form->field($model, 'hoby')->listBox([
    1=>'Jalan2', 2 => 'Makan2', 3=>'Joging'
],['multiple'=>true]) ?>
```

- checkBoxList -> multiple

```
<?= $form->field($model, 'hoby')->checkBoxList([
    1=>'Jalan2', 2 => 'Makan2', 3=>'Joging'
],['multiple'=>true]) ?>
```
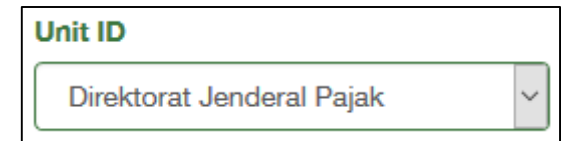
Modifikasi View: Form

- dropDownList dari Tabel

```php
<?php
use \yii\helpers\ArrayHelper;
use \app\models\Unit;
$units = ArrayHelper::map(Unit::find()->all(),"id","name");
echo $form->field($model, 'unit_id')->dropDownList($units);
?>
```
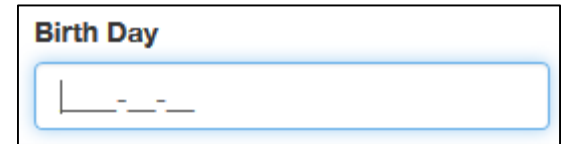
Unit ID

Direktorat Jenderal Pajak

Modifikasi View: Form

- Masking input via widget

```php
<?php
use \yii\widgets\MaskedInput;
echo $form->field($model, 'birth_day')->widget(
    MaskedInput::classname(),[
        'mask'=>'9999-99-99',
        'clientOptions' => ['placeholder' => 'yyyy-mm-dd'],
    ]
);
?>
```

- a: karakter alpha (A-Z, a-z)
- 9: karakter numeric (0-9)
- *: karakter alphanumeric (A-Z, a-z, 0-9)
- https://github.com/RobinHerbots/jquery.inputmask

Birth Day

Modifikasi View: Form

- Mengatur posisi field

```
<div class="row">
    <div class="col-md-3">
    <?= $form->field($model, 'born')->textInput();
    </div>
    <div class="col-md-3">
    <?php
    use \yii\widgets\MaskedInput;
    echo $form->field($model, 'birth_day')->widget
        MaskedInput::classname(),['mask'=>'9999-99-99']
    );
    ?>
    </div>
</div>
```

Modifikasi View: GridView

File @app\views\movie\index.php

```php
<?= GridView::widget([
    'dataProvider' => $dataProvider,
    'filterModel' => $searchModel,
    'columns' => [
        ['class' => 'yii\grid\SerialColumn'],
        'title',
        'genre',
        ['class' => 'yii\grid\ActionColumn'],
    ],
]); ?>
```

Go Cinema

Beranda / Movies

Movies

Create Movie

Menampilkan **1-20** dari **21** item.

#	Title	Genre	
1	The Lord of the Rings: The Return of the King	2003	👁 ✏ 🗑
2	The Pianist	2002	👁 ✏ 🗑
3	Gladiator	2000	👁 ✏ 🗑
4	The Green Mile	1999	👁 ✏ 🗑
5	Saving Private Ryan	1998	👁 ✏ 🗑
6	Good Will Hunting	1997	👁 ✏ 🗑
7	Titanic	1997	👁 ✏ 🗑

Modifikasi View: GridView

- Menampilkan format tanggal
  ```
  [
      'attribute'=>'birth_day',
      'format'=>['date','php:d F Y'],
      // http://php.net/manual/en/function.date.php
  ],
  ```
- Menampilkan data menggunakan closure
  ```
  [
      'attribute'=>'gender',
      'value'=>function($data){
          return $data->gender==1?"Pria":"Wanita";
      }
  ],
  ```

Modifikasi View: GridView

- Menampilkan data berelasi menggunakan closure

```
[
    'attribute'=>'unit_id',
    'header'=>'Unit',
    'value'=>function($data){
        $unit = \app\models\Unit::findOne(['id'=>$data->unit_id]);
        return $unit->name;
    }
],
```

Unit

Direktorat Jenderal
Pajak

Modifikasi View: GridView

- Menampilkan link download menggunakan \yii\helpers\Html

```
[
    "attribute" => "certificate",
    "format" => "html",
    "value" => function($data){
        return Html::a("Unduh","uploads/" . $data->certificate);
    }
]
```

Modifikasi View: GridView

- Modifikasi Action Column

```
[
    "class"    => "\yii\grid\ActionColumn",
    "header"   => "Aksi", // set judul kolom
    "template"  => "{view} {update} {delete}", // set tombol yang muncul
    "options"   => [
        "width" => "80px", // set lebar kolom
    ]
]
```

Modifikasi View: Gridview

- Modifikasi filter menjadi dropdown
  ```
  [
      "attribute" => "gender",
      "filter"    => [1=>"Pria", 0=>"Wanita"],
  ]
  ```

- Menonaktifkan filter
  ```
  [
      "attribute" => "birth_day",
      "filter"    => false,
  ]
  ```

Modifikasi View: DetailView

- Hampir sama dengan Gridview

Modifikasi Controller: Flash Message

- Tambahkan set flash message pada pemrosesan data
  - Yii::$app->session->setFlash('success', 'pesan berhasil disimpan');
  - Yii::$app->session->setFlash('error', 'pesan gagal disimpan');

    ```
    if($model->save()) { // jika berhasil disimpan
        // set flash success
    }
    else{
        // set flash error
    }
    ```

Modifikasi Controller: Flash Message

```php
/*
if ($model->load(Yii::$app->request->post()) && $model->save()) {
    return $this->redirect(['view', 'id' => $model->id]);
}
*/
if ($model->load(Yii::$app->request->post())) {
    if ($model->save()){
        Yii::$app->session->setFlash('success', 'berhasil disimpan!');
        return $this->redirect(['view', 'id' => $model->id]);
    }
    else{
        Yii::$app->session->setFlash('error', 'gagal disimpan!');
    }
}
```

Modifikasi Controller:
Change Initial Sort & Perpage Gridview

```php
public function actionIndex()
{
    $searchModel = new MovieSearch();
    $dataProvider = $searchModel->search(Yii::$app->request->queryParams);
    /* change default sort */
    $dataProvider->sort->defaultOrder = [
        'title' => SORT_ASC
    ];
    // change perpage
    $dataProvider->pagination->pageSize = 10;
    return $this->render('index', [
        'searchModel' => $searchModel,
        'dataProvider' => $dataProvider,
    ]);
}
```

Modifikasi Controller:
Change Initial Sort & Perpage Gridview

Menampilkan **1-5** dari **21** item.

#	Title ↓ᴬ�zᴢ	Genre	
1	Apocalypse Now	1979	👁 ✏ 🗑
2	Avengers: Endgame	2019	👁 ✏ 🗑
3	Braveheart	1995	👁 ✏ 🗑
4	Fargo	1996	👁 ✏ 🗑
5	Forrest Gump	1994	👁 ✏ 🗑

« 1 2 3 4 5 »

Modifikasi Model: Behavior

- Timestamp = otomatis menginput waktu insert dan update data. field: created_at dan updated_at (timestamp / int)
- Blameable = otomatis menginput user id yang menginsert dan mengupdate data. field: created_by dan updated_by (int)

```
public function behaviors()
{
    return [
        \yii\behaviors\TimestampBehavior::className(),
        \yii\behaviors\BlameableBehavior::className()
    ];
}
```

Form Validasi

Jenis Validasi Yang Disupport Yii

- ❖ boolean: yii\validators\BooleanValidator
- ❖ captcha: yii\captcha\CaptchaValidator
- ❖ compare: yii\validators\CompareValidator
- ❖ date: yii\validators\DateValidator
- ❖ datetime: yii\validators\DateValidator
- ❖ time: yii\validators\DateValidator
- ❖ default: yii\validators\DefaultValueValidator
- ❖ double: yii\validators\NumberValidator
- ❖ each: yii\validators\EachValidator
- ❖ email: yii\validators\EmailValidator
- ❖ exist: yii\validators\ExistValidator
- ❖ file: yii\validators\FileValidator
- ❖ filter: yii\validators\FilterValidator

- ❖ image: yii\validators\ImageValidator
- ❖ in: yii\validators\RangeValidator
- ❖ integer: yii\validators\NumberValidator
- ❖ match: yii\validators\RegularExpressionValidator
- ❖ required: yii\validators\RequiredValidator
- ❖ safe: yii\validators\SafeValidator
- ❖ string: yii\validators\StringValidator
- ❖ trim: yii\validators\FilterValidator
- ❖ unique: yii\validators\UniqueValidator
- ❖ url: yii\validators\UrlValidator
- ❖ ip: yii\validators\IpValidator

https://www.yiiframework.com/doc/guide/2.0/en/tutorial-core-validators

Validasi input melalui method rule di Model

```
public function rules()
{
    return [
        // kode validasi disini
    ];
}
```

Validasi Required & Safe

- required: field tidak boleh kosong

```
[['title'], 'required'],
```

- safe: field tidak divalidasi

```
[['genre'], 'safe'],
```

Validasi String

- field harus teks
```
[['title'], 'string'],
```

- field maximal 50 char
```
[['director'], 'string', 'max' => 50],
```

- field min 5 char
```
[['director'], 'string', 'min' => 5],
```

- field min 5 char & max 50 char
```
[['director'], 'string', 'length' => [5,50]],
```

Validasi Integer & Double

```
// check field integer
[['quota'], 'integer'],

// check age = 17+
[['age'], 'integer', 'min' => 17],

// checks field = double (desimal)
[['salary', 'price'], 'double'],
```

Validasi Boolean & Unik

- Boolean: field harus diantara 1 atau 0 (true atau false)

```
[['status', 'gender'], 'boolean'],
```

- Unique: field harus unik

```
[['username'], 'unique'],
```

Validasi Compare

```
// validasi "password" sama dengan "password_repeat"
['password', 'compare'],

// sama dengan sebelumnya
['password', 'compare', 'compareAttribute' => 'password_repeat'],

// validasi umur harus 17+
['age', 'compare', 'compareValue' => 17, 'operator' => '>=', 'type' => 'number'],
```

Validasi Date, Time, DateTime

```
[['birthday'], 'date'],
[['start_film'], 'datetime'],
[['work_start'], 'time'],
```

Validasi Email, URL & IP

- email: field harus berformat email abc@def.ghi

```
[['email_address'], 'email'],
```

- URL: field harus berformat URL valid http://example.com

```
[['homepage'], 'url'],
```

- ip: field harus berformat IP 127.0.0.1

```
[['ip_address'], 'ip'],
```

Validasi IN (Range)

```
// checks if "level" is 1, 2 or 3
['level', 'in', 'range' => [1, 2, 3]],

['user_level', 'in', 'range' => ['mimin', 'momod']],
```

Validasi File & Image

```
// checks if "primaryImage" is an uploaded image file in PNG, JPG or GIF format.
// the file size must be less than 1MB
['cover', 'file', 'extensions' => ['png', 'jpg', 'gif'], 'maxSize' => 1024*1024],

// checks if "primaryImage" is a valid image with proper size
['primaryImage', 'image', 'extensions' => 'png, jpg',
'minWidth' => 100, 'maxWidth' => 1000,
'minHeight' => 100, 'maxHeight' => 1000,
],
```

Kustomisasi Validasi

```php
// Kustomisasi pesan error
[["username"],"unique", "message"=>"Pilih username lain gan!",

// Kustomisasi validasi
[["nip"],function($attribute, $params){
    $length = strlen($this->$attribute);
    if(!in_array($length,[9,18])){
        $this->addError($attribute,"NIP tidak valid");
        return false;
    }
}
```

https://pavithratech.wordpress.com/2018/02/21/yii2-custom-validation/
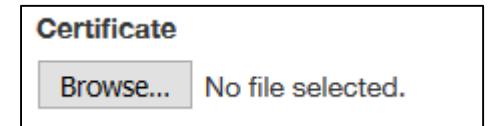
Upload File

Modifikasi View: Form

- fileInput

<?= $form->field($model, 'certificate')->fileInput() ?>

Pada form, tambahkan opsi enctype multipart/form-data

```
<?php $form = ActiveForm::begin([
    'options' => ['enctype'=>'multipart/form-data']
]); ?>
```

Modifikasi Controller: File Upload

https://github.com/yiisoft/yii2/blob/master/docs/guide/input-file-upload.md

```php
<?php
use \yii\web\UploadedFile;
$file = UploadedFile::getInstance($model, "certificate");
if($file){
    $file->saveAs("uploads/" . $file->baseName . "." . $file->extension);
}
```

Menggunakan Extension

Apa itu Extension?

- Extension = Library tambahan diluar core Yii, bentuknya bisa widgets, helpers, module, maupun library PHP biasa
- Contoh: Yii2 Widget buatan Krajee

Yii2 Widget (Krajee Extension)

- Definisi: Kumpulan widget-widget penting untuk mempercantik user interface, yaitu: datepicker, timepicker, select2, depdrop, dll

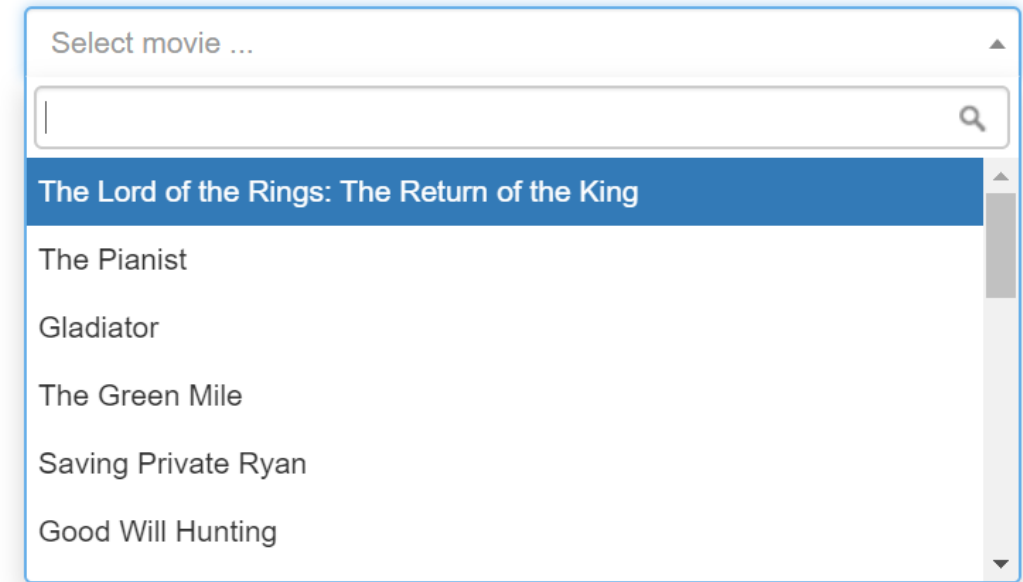- URL: https://github.com/kartik-v/yii2-widgets

composer require kartik-v/yii2-widgets "*"

Yii2 Widget: Select2

```php
<?php
use yii\helpers\ArrayHelper;
use app\models\Movie;
use kartik\widgets\Select2;
$movies=ArrayHelper::map(
    Movie::find()->all(),"id","title"
);
echo Select2::widget([
    'name' => 'movie',
    'value' => '',
    'data' => $movies,
    'options' => ['placeholder' => 'Select movie ...']
])
```

Select movie ...

🔍

The Lord of the Rings: The Return of the King

The Pianist

Gladiator

The Green Mile

Saving Private Ryan

Good Will Hunting

Yii2 Widget: SwitchInput

```php
<?php
use \kartik\widgets\SwitchInput;
echo $form->field($model, 'gender')->widget(
    SwitchInput::classname(), [
        "pluginsOptions" => [
            "onText" => "Pria",
            "offText" => "Wanita",
        ],
    ]
);
```
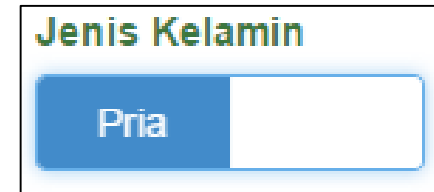
Yii2 Widget: DatePicker

```php
<?php
use \kartik\widgets\DatePicker;
echo $form->field($model, 'birth_day')->widget(
    DatePicker::classname(), [
        "options" => ["placeholder" => "Pilih tanggal .."],
        "language" => "id",
        "pluginsOptions" => [
            "format" => "yyyy-mm-dd",
            "autoclose" => true,
            "todayHighlight" => true,
            "todayBtn" => true,
        ],
    ]
);
```
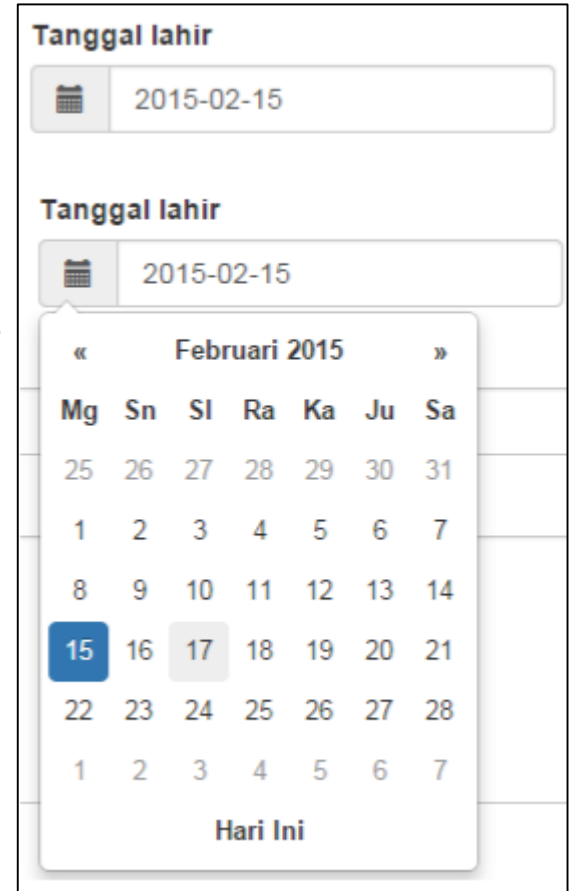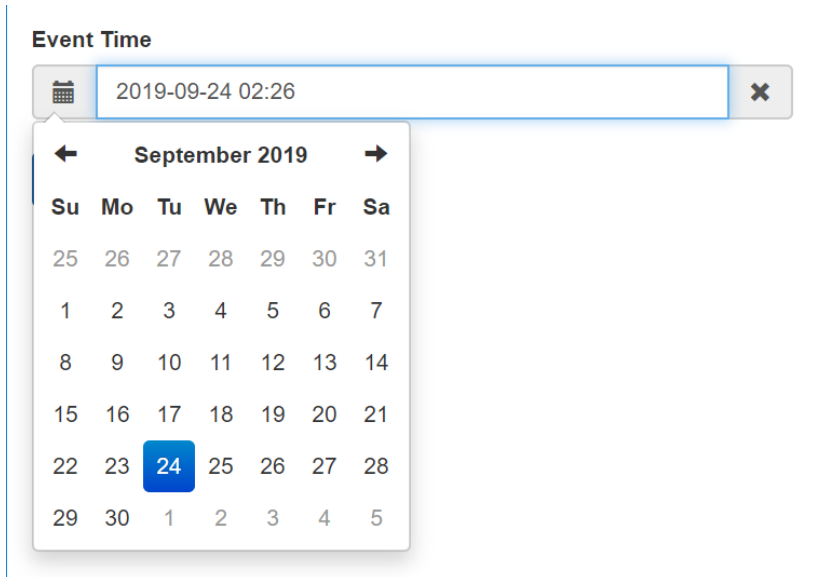
Yii2 Widget: DatePicker

```php
use kartik\widgets\DateTimePicker;
$form = ActiveForm::begin();
echo "<br>";
echo '<label class="control-label">Event Time</label>';
echo DateTimePicker::widget([
    'name' => 'event_time',
    'value' => date('Y-m-d H:i'),
    'type' => DateTimePicker::TYPE_COMPONENT_PREPEND,
    'layout' => '{picker}{input}{remove}',
    'removeButton' => ['position' => 'append'],
    'pluginOptions' => [
        'autoclose' => true,
        'format' => 'yyyy-mm-dd hh:ii'
    ]
]);
```

Event Time

2019-09-24 02:26

September 2019

Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

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