Knowledge Check - Hastyana

1. Analyze - Problem Solving (Real case business solution)

a) Terdapat sebuah perusahaan yang memerlukan sistem manajemen inventaris kantor pada case penambahan baru, perbaikan dan pengurangan inventaris.

i. Goalsnya adalah manajemen inventaris pada perusahaan dapat di control dan dimonitoring.

ii. Bagaimana anda breakdown flow aplikasi tersebut? Jelaskan secara dekriptif dan jika dirasa perlu diperkenankan menambahkan flowchart

2. Describe about tech / framework / developer tools (paraphrase)

a) Deskripsikan apa itu microservice pada backend sebuah aplikasi, dan menurut anda apa perbedaan microservice dan monolith

b) Deskripsikan apa itu MVC (Model, View, Controller) dalam laravel menurut versi anda

3. Basic Programming (PHP / Javascript)

a) Buatkan sebuah fungsi untuk menampilkan data product berdasarkan merchant, contoh data

```php
<?php

$merchant = [
[
'id' => 1,
'name' => 'RM Madang Geden'
],
[
'id' => 2,
'name' => 'RM Pokwe'
]
];
```

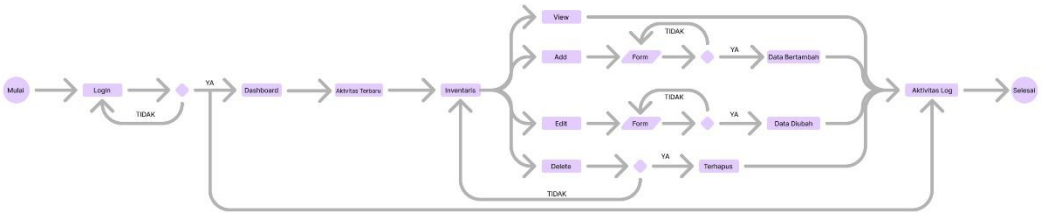
```php
$product = [
[
'category' => 'food',
'created_at' => '2023-10-30 13:39:49',
'name' => 'Baso Aci',
'merchant_id' => 1
],
```

```php
[
'category' => 'drink',
'created_at' => '2023-10-12 13:30:49',
'name' => 'Es Jeruk',
'merchant_id' => 2
],
[
'category' => 'desert',
'created_at' => '2023-11-30 13:39:49',
'name' => 'ice cream',
'merchant_id' => 1
],
[
'category' => 'food',
'created_at' => '2023-10-11 13:39:49',
'name' => 'Mie Ayam',
'merchant_id' => 1
],
[
'category' => 'drink',
'created_at' => '2023-05-30 13:39:49',
'name' => 'Teh',
'merchant_id' => 2
],
[
'category' => 'food',
'created_at' => '2023-01-02 13:39:49',
'name' => 'Nasi Goreng',
'merchant_id' => 2
],
];
```

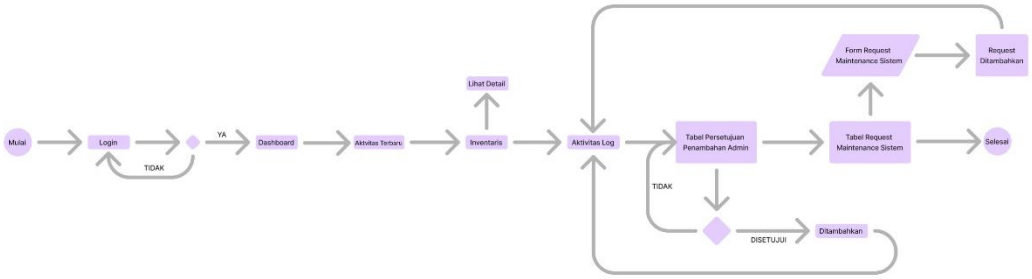
JAWABAN

1. Sistem Manajemen Inventaris Kantor

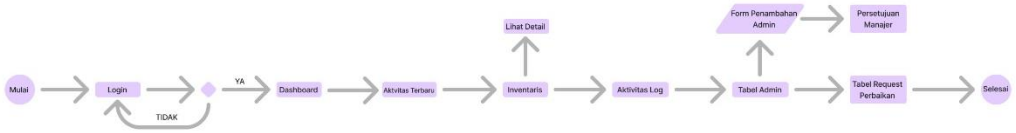
- Admin Staff User : input, edit dan delete data



- Manajer User : monitoring dan controlling



- IT Staff User : maintenance



Sistem Manajemen Inventaris Kantor ini dibuat untuk membantu menyimpan data inventaris kantor. Flowchart ini saya gambarkan untuk 3 role, yaitu Admin, IT Staff dan Manajer. Flowchart manajer dapat melihat aktivitas log semua yang mengakses system tersebut, lalu bias menyetujui pengajuan akun admin baru, dan manajer bisa membuat request untuk maintenance system. Flowchart IT Staff bisa menambahkan akun admin namun harus menunggu persetujuan manajer, bisa melihat aktivitas log dan bisa memproses request yang ada. Admin hanya bisa melihat, menambah, mengubah dan menghapus data inventaris.

2. A. Microservice Backend : dalam pembuatan suatu system atau aplikasi, aplikasi diklasifikasikan menjadi layanan yang lebih kecil, dengan hal ini developer dapat focus dan mudah mengerjakan layanan dalam lingkup yang kecil, ketika ada eror akan dengan mudah dideteksi dan ketika ada perubahan pun akan lebih mudah dikerjakan.

- Perbedaan Monolith dan Microservice : pengembangan aplikasi atau system menggunakan monolith dibangun sebagai unit tunggal yang saling terhubung sedangkan microservice dibangun dengan mengklasifikasi lingkup unit layanan menjadi lebih kecil.

B. MVC pada Laravel :

- Model : berisi fungsi fungsi untuk mengelola basis data sebuah aplikasi

- View : fungsi untuk mengatur tampilan user interface sebuah aplikasi (Front-end)

- Controller : fungsi untuk mengatur logika aplikasi dalam mengintegrasikan database dengan user interface (Back-end)

3. PHP Programming (Laravel)

merchant migrations

```php
<?php

use Illuminate\Database\Migrations\Migration;
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Support\Facades\Schema;

return new class extends Migration
{
    /**
     * Run the migrations.
     */
    public function up(): void
    {
        Schema::create('merchant', function (Blueprint $table) {
            $table->id();
            $table->string('name');
            $table->timestamps();
        });
    }

    /**
     * Reverse the migrations.
     */
    public function down(): void
    {
        Schema::dropIfExists('merchant');
    }
};
```

Product migrations

```php
<?php
```

```php
use Illuminate\Database\Migrations\Migration;
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Support\Facades\Schema;

return new class extends Migration
{
    /**
     * Run the migrations.
     */
    public function up(): void
    {
        Schema::create('product', function (Blueprint $table) {
            $table->id();
            $table->string('name');
            $table->string('category');
            $table->foreign('merchant_id')->references('id')->on('merchant');
            $table->timestamps();
        });
    }

    /**
     * Reverse the migrations.
     */
    public function down(): void
    {
        Schema::dropIfExists('project');
    }
};
```

DatabaseSeeder

```php
<?php

namespace Database\Seeders;

use App\Models\User;
use Illuminate\Database\Console\Seeds\WithoutModelEvents;
use Illuminate\Database\Seeder;
use Illuminate\Support\Facades\Hash;

class DatabaseSeeder extends Seeder
{
    /**
```

```
     * Run the database seeds.
     */
    public function run(): void
    {
        $merchant = [
            [
                'id'=>1,
                'name'=>'RM Madang Geden'
            ],
            [
               'id'=>2,
               'name'=>'RM Pokwe
            ],
        ];

        $product = [

            [
            'category' => 'food',
            'created_at' => '2023-10-30 13:39:49',
            'name' => 'Baso Aci',
            'merchant_id' => 1
            ],
            [
            'category' => 'drink',
            'created_at' => '2023-10-12 13:30:49',
            'name' => 'Es Jeruk',
            'merchant_id' => 2
            ],
            [
            'category' => 'desert',
            'created_at' => '2023-11-30 13:39:49',
            'name' => 'ice cream',
            'merchant_id' => 1
            ],
            [
            'category' => 'food',
            'created_at' => '2023-10-11 13:39:49',
            'name' => 'Mie Ayam',
            'merchant_id' => 1
            ],
            [
            'category' => 'drink',
            'created_at' => '2023-05-30 13:39:49',
            'name' => 'Teh',
```

```
            'merchant_id' => 2
            ],
            [
            'category' => 'food',
            'created_at' => '2023-01-02 13:39:49',
            'name' => 'Nasi Goreng',
            'merchant_id' => 2
            ],
        ];

        foreach ($merchant as $key => $value) {
            Merchant::create($value);
        }
        foreach ($product as $key => $value) {
            Product::create($value);
        }

    }
}
```

Merchant Model

```
<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Factories\HasFactory;
use Illuminate\Database\Eloquent\Model;

class Merchant extends Model
{
    use HasFactory;

    protected $table = 'merchant';
    protected $primaryKey = 'id';
    protected $fillable = ['id', 'name'];
    protected $dates = ['created_at, update_at'];

    public function product(){
        return $this->hasMany(Product::class, 'name');
    }

}
```

Product Model

```php
<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Factories\HasFactory;
use Illuminate\Database\Eloquent\Model;

class Portfolios extends Model
{
    use HasFactory;

    protected $table = 'portfolios';
    protected $primaryKey = 'id';
    protected $fillable = ['id', 'category', 'name', 'merchant_id',
'created_at'];
    protected $dates = ['update_at'];

    public function merchant(){
        return $this->belongsTo(Merchant::class, 'name');
    }
}
```

ViewController

```php
<?php

namespace App\Http\Controllers;

use Illuminate\Http\Request;
use Illuminate\Support\Facades\File;
use Illuminate\Support\Facades\Storage;
use App\Models\Product;
use App\Models\Merchant;

class ViewController extends Controller
{
    public function view () {
        $product = Product::all();
        $merchant = Merchant::all();
        return view('/', ['product' => $product, 'merchant' => $merchant]);
    }
}
```

web.php

```php
<?php

use Illuminate\Support\Facades\Route;

use App\Http\Controllers\ViewController;
/*
|--------------------------------------------------------------------------
| Web Routes
|--------------------------------------------------------------------------
|
| Here is where you can register web routes for your application. These
| routes are loaded by the RouteServiceProvider and all of them will
| be assigned to the "web" middleware group. Make something great!
|
*/

Route::get('/', [ViewController::class, 'view'])->name('view');
```

view.blade.php

```
<!DOCTYPE html>

<html>

<head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link href="{{ asset ('img/logos.png') }}" rel="icon">
    <link href="{{ asset ('img/logos.png') }}" rel="apple-touch-icon">
    <title>View</title>
    @vite(['resources/css/app.css', 'resources/css/admin.css'])
</head>

<body class="bg-white">
    <div class="flex h-screen bg-white" :class="{ 'overflow-hidden':
isSideMenuOpen }">

        {{ View::make('admin/sidebar') }}

        <div class="flex flex-col flex-1 w-full">
```

```
            {{ View::make('admin/topbar') }}

            <main class="h-full overflow-y-auto">
                <div class="container px-6 mx-auto grid">
                    <div class="w-full overflow-hidden rounded-lg shadow-xs">
                        <div class="w-full overflow-x-auto">
                            <table class="w-full whitespace-no-wrap">
                                <thead>
                                    <tr class="text-xs font-semibold tracking-
wide text-left text-black-1E1E1E uppercase border-b">
                                        <th class="px-4 py-3">No</th>
                                        <th class="px-4 py-3">ID Merchant</th>
                                        <th class="px-4 py-3">Nama Merchant</th>
                                    </tr>
                                </thead>
                                <tbody class="bg-white divide-y">

                                    @php $no=0; @endphp
                                    @foreach ($merchant as $row)
                                    @php $no++; @endphp

                                    <tr class="text-black-1E1E1E">
                                        <td class="px-4 py-3 text-sm">
                                            {{ $no }}
                                        </td>
                                        <td class="px-4 py-3 text-sm">
                                            {{ $row->id }}
                                        </td>
                                        <td class="px-4 py-3 text-sm">
                                            {{ $row->name }}
                                        </td>
                                    </tr>

                                    @endforeach

                                </tbody>
                            </table>
                        </div>
                    </div>
                    <div class="w-full overflow-hidden rounded-lg shadow-xs">
                        <div class="w-full overflow-x-auto">
                            <table class="w-full whitespace-no-wrap">
                                <thead>
```

```
                                    <tr class="text-xs font-semibold tracking-
wide text-left text-black-1E1E1E uppercase border-b">
                                        <th class="px-4 py-3">No</th>
                                        <th class="px-4 py-3">ID Product</th>
                                        <th class="px-4 py-3">ID Merchant</th>
                                        <th class="px-4 py-3">Nama Product</th>
                                        <th class="px-4 py-3">Category</th>
                                    </tr>
                                </thead>
                                <tbody class="bg-white divide-y">

                                    @php $no=0; @endphp
                                    @foreach ($merchant as $row)
                                    @php $no++; @endphp

                                    <tr class="text-black-1E1E1E">
                                        <td class="px-4 py-3 text-sm">
                                            {{ $no }}
                                        </td>
                                       <td class="px-4 py-3 text-sm">
                                            {{ $row->id }}
                                        </td>
                                        <td class="px-4 py-3 text-sm">
                                            {{ $row->name }}
                                        </td>
                                        <td class="px-4 py-3 text-sm">
                                            {{ $row->merchant_id }}
                                        </td>
                                        <td class="px-4 py-3 text-sm">
                                            {{ $row->category }}
                                        </td>
                                    </tr>

                                    @endforeach

                                </tbody>
                            </table>
                        </div>
                    </div>
                </div>
            </main>
        </div>
    </div>
</body>
```

```
</html>
```