

CYCLE SORT

1. Isi dari file pada folder lib

- a. images/unpri.png
- b. cyclesortpage.dart



CycleSortPage.dart

```
import 'package:cycle_sort/main.dart';
import 'package:flutter/material.dart';

class CycleSortPg extends StatefulWidget {
  const CycleSortPg({super.key});

  @override
  State<CycleSortPg> createState() => _CycleSortPgState();
}

class _CycleSortPgState extends State<CycleSortPg> {
  final formKey = GlobalKey<FormState>();
  final tecSblmUrut = TextEditingController();
  final tecStlhUrut = TextEditingController();
  final tecData = TextEditingController();
  List<int> list = [];
  List<String> steps = [];

  void addStep(String step) {
    setState(() {
      steps.add(step);
    });
  }

  void clearSteps() {
    setState(() {
      steps.clear();
    });
  }

  List<int> cycleSort(List<int> dataList) {
    int n = dataList.length;

    for (int cycleStart = 0; cycleStart < n - 1; cycleStart++) {
      int item = dataList[cycleStart];
      int pos = cycleStart;

      // Mencari dimana kita menaruh element seharusnya
      for (int i = cycleStart + 1; i < n; i++) {
        if (dataList[i] < item) {
          pos++;
        }
      }

      // Cek apabila elemennya sudah sesuai dengan posisi yang kita mau
```

NIM : 223303030213
Nama : Yahya Septian Siregar

```
        if (pos == cycleStart) {
            continue;
        }

        // letakkan element di tempat yang betul jika ada angka yang sama
        // semisal ada 2 angka 5 disebuah data [ 2, 3, 5, 5,] maka angka
        // diletakkan di kanannya
        while (item == dataList[pos]) {
            pos++;
        }

        //pertukaran dan peletakan nilai
        int temp = dataList[pos];
        dataList[pos] = item;
        item = temp;

        // Rotate the rest of the cycle
        while (pos != cycleStart) {
            pos = cycleStart;
            for (int i = cycleStart + 1; i < n; i++) {
                if (dataList[i] < item) {
                    pos++;
                }
            }
        }

        // mengecek lagi apa ada yang sama atau tidak, jika ada maka
        // diletakkan di kanan
        while (item == dataList[pos]) {
            pos++;
        }

        // peletakan dan pertukaran nilai lagi
        int temp = dataList[pos];
        dataList[pos] = item;
        item = temp;

        addStep(dataList.map((e) => e.toString()).join(', '));
    }
}

return List.from(dataList);
}

@override
Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
            title: const Text('Cycle Sort'),
            automaticallyImplyLeading: true,
            backgroundColor: const Color(0xFFFF4CE14),
            leading: IconButton(
                icon: Icon(Icons.arrow_back_ios),
                onPressed: () {
                    Navigator.push(
                        context, MaterialPageRoute(builder: (context) =>
MyApp()));
                },
            ),
        ),
        body: SingleChildScrollView(
```

NIM : 223303030213
Nama : Yahya Septian Siregar

```
child: Container(  
  child: Form(  
    key: formKey,  
    child: Column(  
      children: [  
        Center(  
          child: Padding(  
            padding: const EdgeInsets.only(top: 15),  
            child: Container(  
              width: 370,  
              child: TextFormField(  
                controller: tecData,  
                validator: (value) => value == null ||  
value.isEmpty  
                ? 'Data masih kosong'  
                : null,  
                keyboardType: TextInputType.number,  
                decoration: InputDecoration(  
                  labelText: 'Klik Untuk Memasukkan Angkamu',  
                  labelStyle: TextStyle(color:  
Color(0xFF495E57)),  
                  hintText: 'Masukan Angka Satu Persatu',  
                  focusedBorder: OutlineInputBorder(  
                    borderRadius: BorderRadius.circular(20),  
                    borderSide: BorderSide(color:  
Color(0xFFFF4CE14)),  
                  ),  
                  enabledBorder: OutlineInputBorder(  
                    borderRadius: BorderRadius.circular(20),  
                    borderSide: BorderSide(color:  
Color(0xFF495E57)),  
                ),  
              ),  
            ),  
          ),  
        ),  
      ],  
    ),  
  ),  
  child: Padding(  
    padding: const EdgeInsets.all(12.0),  
    child: Container(  
      padding: EdgeInsets.all(12),  
      width: double.infinity,  
      height: 100,  
      decoration: BoxDecoration(  
        borderRadius: BorderRadius.circular(10),  
        color: Color(0xFF495E57),  
      ),  
      child: Text(  
        'Data : ${list}',  
        style: TextStyle(color: Colors.white70, fontSize:  
18),  
      ),  
    ),  
  ),  
  child: Container(  
    child: ButtonBar(  
      alignment: MainAxisAlignment.spaceEvenly,  
      children: [  
        FilledButton(  
          onPressed: () {  
            setState(() {
```

NIM : 223303030213
Nama : Yahya Septian Siregar

```
        if (tecData.text.length != 0) {
            int data =
int.parse(tecData.text.toString());
            list.add(data);
            tecData.text = '';
        } else {

ScaffoldMessenger.of(context).showSnackBar(
            SnackBar(
                content: Text('Kolom Masih
Kosong')));
        }
    });
},
child: Text(
    'Input',
    style: TextStyle(fontSize: 14),
),
style: ElevatedButton.styleFrom(
    backgroundColor: Color(0xFFFF4CE14),
    fixedSize: Size(150, 40),
    shape: RoundedRectangleBorder(
        borderRadius: BorderRadius.circular(30)),
),
),
ElevatedButton(
    onPressed: () {
        setState(() {
            list.clear();
            tecSblmUrut.text = '';
            tecStlhUrut.text = '';
            clearSteps();
            ScaffoldMessenger.of(context).showSnackBar(
                SnackBar(content: Text('Data Telah
Dihapus')));
        });
    },
    child: Text(
        'Hapus',
        style: TextStyle(fontSize: 14),
    ),
    style: ElevatedButton.styleFrom(
        backgroundColor: Color(0xFF495E57),
        fixedSize: Size(150, 40),
        shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(30)),
    ),
),
],
),
),
Container(
    child: FilledButton(
        onPressed: () {
            setState(() {
                String dataNotSort = '';
                String dataSort = '';
                list.forEach((elementNotSort) {
                    dataNotSort = dataNotSort + '
${elementNotSort} ';
```

NIM : 223303030213
Nama : Yahya Septian Siregar

```
});  
tecSblmUrut.text = dataNotSort;  
addStep(list.map((e) => e.toString()).join(',  
'));  
  
list = cycleSort(list);  
  
dataSort = '';  
list.forEach((elementSort) {  
    dataSort = dataSort + ' ${elementSort} '  
});  
tecStlhUrut.text = dataSort;  
});  
},  
child: Text('Urutkan'),  
style: ElevatedButton.styleFrom(  
    backgroundColor: Color(0xFFB7A70F),  
    fixedSize: Size(355, 40),  
    shape: RoundedRectangleBorder(  
        borderRadius: BorderRadius.circular(18)),  
    ),  
),  
),  
Padding(  
    padding: const EdgeInsets.all(12.0),  
    child: Column(  
        children: [  
            TextField(  
                maxLines: 2,  
                readOnly: true,  
                controller: tecSblmUrut,  
                decoration: InputDecoration(  
                    labelText: 'Data sebelum pengurutan',  
                    border: OutlineInputBorder(  
                        borderRadius:  
BorderRadius.circular(20))),  
                ),  
            SizedBox(  
                height: 10,  
            ),  
            TextField(  
                maxLines: 2,  
                readOnly: true,  
                controller: tecStlhUrut,  
                decoration: InputDecoration(  
                    labelText: 'Data Setelah pengurutan',  
                    border: OutlineInputBorder(  
                        borderRadius:  
BorderRadius.circular(20))),  
                ),  
            SizedBox(  
                height: 10,  
            ),  
            Text(  
                'Langkah - Langkah Pengurutan',  
                style: TextStyle(  
                    fontSize: 18,  
                    fontWeight: FontWeight.bold,  
                    color: Color(0xFF495E56)),  
            ),
```

Nama : Yahya Septian Siregar

c. main.dart



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```
child: Center(
  child: Column(
    children: [
      SizedBox(
        height: 120,
      ),
      Text(
        'Cycle Sort',
        style: TextStyle(
          fontSize: 50,
          fontWeight: FontWeight.bold,
          color: Color(0xFF495E57)),
      ),
      SizedBox(
        height: 8,
      ),
      Text(
        'Selamat Datang di Aplikasi Mobile dengan Program
Cycle Sort',
        style: TextStyle(fontSize: 18, color:
Color(0xFF495E56)),
        textAlign: TextAlign.center,
      ),
      SizedBox(
        height: 20,
      ),
      Container(
        height: 200,
        child: Image.asset('lib/images/unpri.png'),
      ),
      SizedBox(
        height: 15,
      ),
      Container(
        height: 50,
        width: 150,
        child: ElevatedButton(
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(builder: (context) =>
CycleSortPg()));
          },
          style: ElevatedButton.styleFrom(
            backgroundColor: Color(0xFFFF4CE14),
            shape: RoundedRectangleBorder(
              borderRadius: BorderRadius.circular(40),
            ),
            padding:
              EdgeInsets.symmetric(vertical: 15,
horizontal: 20),
          ),
          child: Text(
            'Mulai',
            style: TextStyle(
              color: Color(0xFF495E57),
              fontSize: 18,
            ),
          ),
        ),
      ),
    ],
  ),
),
```

Nama : Yahya Septian Siregar

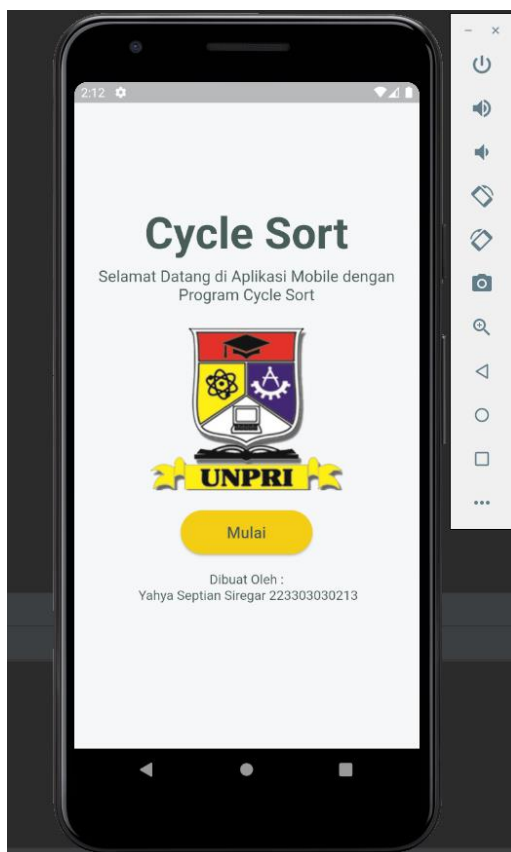
```

    ),
    const SizedBox(
      height: 20,
    ),
    Container(
      child: Text(
        'Dibuat Oleh : \n Yahya Septian Siregar
223303030213',
        style: TextStyle(fontSize: 15, color:
Color(0xFF495E57)),
        textAlign: TextAlign.center,
      ),
    ),
  ),
],
),
),
),
);
}
}

```

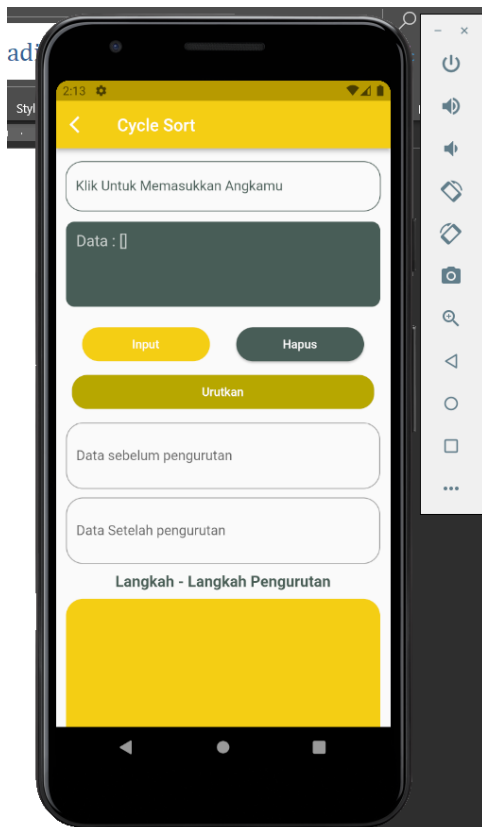
2. Ouput dari aplikasi

a. Gambar 1(Start App)

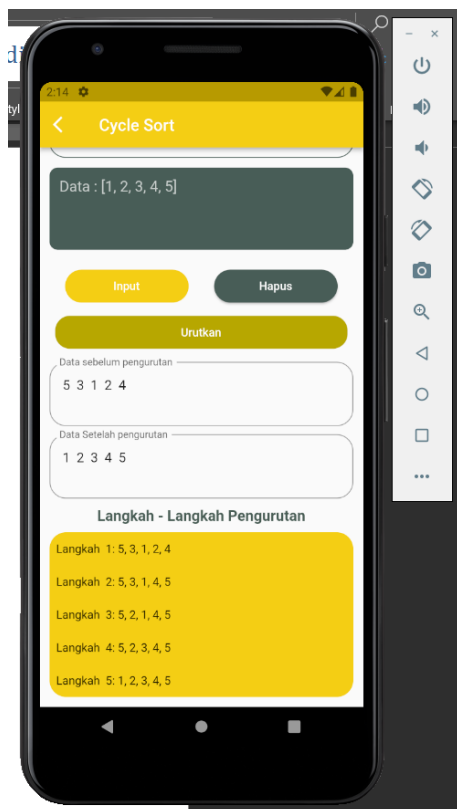


NIM : 223303030213
Nama : Yahya Septian Siregar

b. Gambar 2 (design kosong)



c. Gambar 3 (berisi contoh)



NIM : 223303030213

Nama : Yahya Septian Siregar

3. Link channel Youtube berisi penjelasan dan penggunaan aplikasi

Link : <https://youtu.be/0cjgbg5rwOY>

Catatan:

- *Mohon masing-masing peserta ujian mengikuti template ini.*
- *Jika anda tidak mengikuti format template ini, maka akan menyulitkan proses penilaian dan akan mengurangi penilaian anda.*