Komponen Scaffold

Praktikum Pemrograman Mobile - 10

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2023

Scaffold

Compose menyediakan tata letak yang mudah untuk menggabungkan Komponen Material ke dalam pola layar yang umum. Composable seperti Scaffold menyediakan slot untuk berbagai komponen dan elemen layar lainnya. Selain komponen konten (panel), scaffold juga menyediakan fitur seperti Top Bar, Drawer, Bottom Sheet, dan Floating Action Button.

Latihan

Bukalah file strings.xml pada folder res/values, kemudian tambahkan entry konstanta untuk label-label menu yang kita butuhkan, yaitu Home, Pengelolaan Sampah, dan Setting.

```
<string name="home">Home</string>
<string name="pengelolaan_sampah">Pengelolaan Sampah</string>
<string name="setting">Setting</string>
```

Sehingga, file strings.xml akan terlihat seperti berikut.

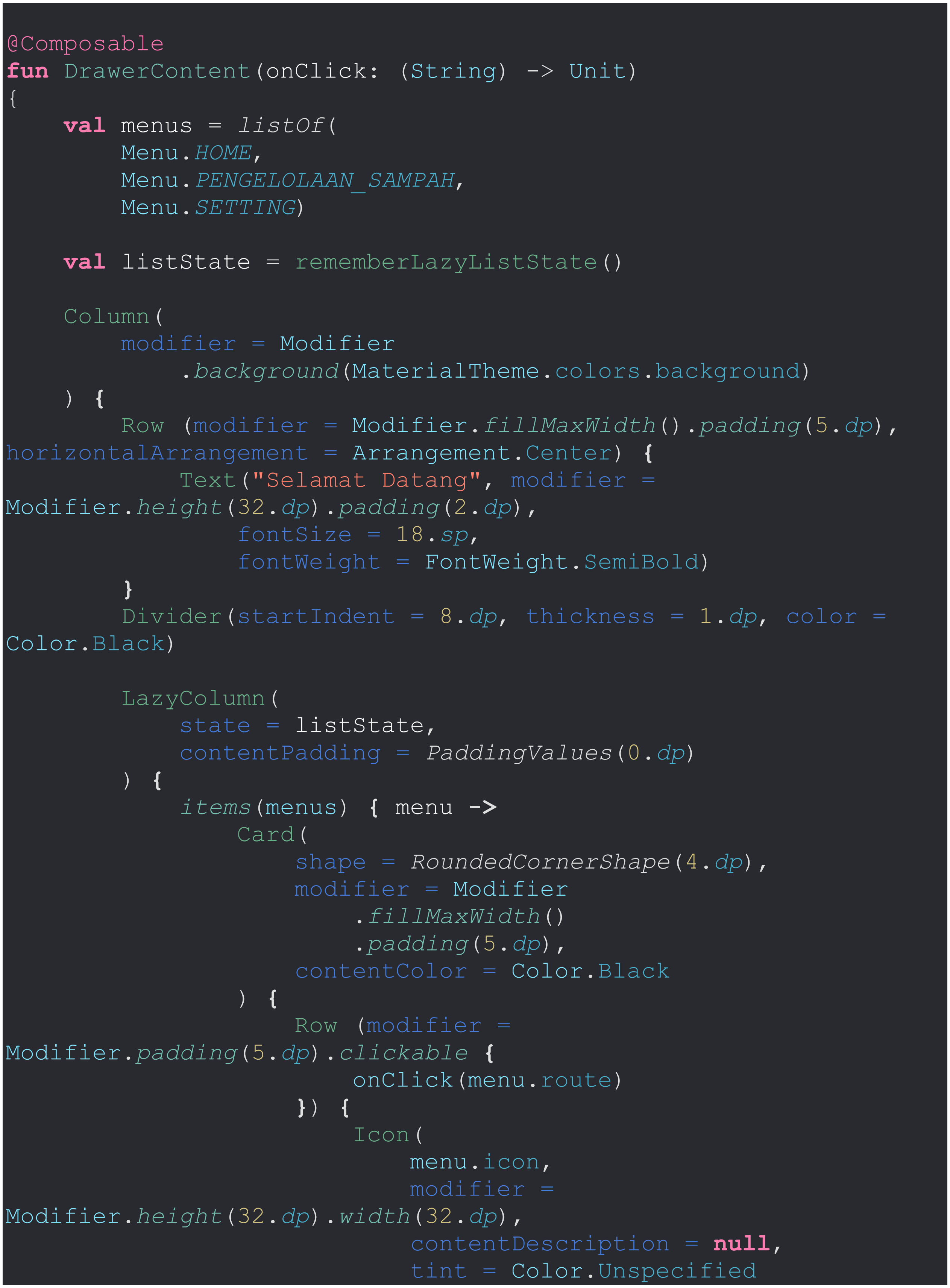
```
<resources>
    <string name="app_name">Functional Compose</string>
    <string name="home">Home</string>
    <string name="pengelolaan_sampah">Pengelolaan
Sampah</string>
    <string name="setting">Setting</string>
</resources>
```

Kemudian, buatlah kelas Menu di package screens untuk membuat struktur yang kita butuhkan dalam rangka membuat menu drawer dan bottom sheet. Berikut kode untuk kelas Menu.

```
package id.ac.unpas.functionalcompose.screens

import androidx.annotation.StringRes
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.Home
import androidx.compose.material.icons.filled.List
import androidx.compose.material.icons.filled.Settings
import androidx.compose.ui.graphics.vector.ImageVector
import id.ac.unpas.functionalcompose.R

enum class Menu (
    @StringRes val title: Int,
    val icon: ImageVector,
    val route: String
) {

    HOME(R.string.home,  Icons.Default.Home, "home"),
    PENGELOLAAN_SAMPAH(R.string.pengelolaan_sampah,
Icons.Default.List, "pengelolaan-sampah"),
    SETTING(R.string.setting, Icons.Default.Settings,
"setting");

    companion object {
        fun getTabFromResource(@StringRes resource: Int) : Menu
{
            return when (resource) {
                R.string.home -> HOME
                R.string.pengelolaan_sampah ->
PENGELOLAAN_SAMPAH
                else -> SETTING
            }
        }
    }
}
```

Lalu, buat file DrawerContent.kt untuk membuat fungsi composable DrawerContent sebagai berikut.

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.background
import androidx.compose.foundation.clickable
import androidx.compose.foundation.layout.Arrangement
import androidx.compose.foundation.layout.Column
import androidx.compose.foundation.layout.PaddingValues
import androidx.compose.foundation.layout.Row
import androidx.compose.foundation.layout.fillMaxWidth
import androidx.compose.foundation.layout.height
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.layout.width
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.items
import androidx.compose.foundation.lazy.rememberLazyListState
import androidx.compose.foundation.shape.RoundedCornerShape
import androidx.compose.material.Card
import androidx.compose.material.Divider
import androidx.compose.material.Icon
import androidx.compose.material.MaterialTheme
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Modifier
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
```



```
@Composable
fun DrawerContent(onClick: (String) -> Unit)
{
    val menus = listOf(
        Menu.HOME,
        Menu.PENGELOLAAN_SAMPAH,
        Menu.SETTING)

    val listState = rememberLazyListState()

    Column(
        modifier = Modifier
            .background(MaterialTheme.colors.background)
    ) {
        Row (modifier = Modifier.fillMaxWidth().padding(5.dp),
horizontalArrangement = Arrangement.Center) {
            Text("Selamat Datang", modifier =
Modifier.height(32.dp).padding(2.dp),
                fontSize = 18.sp,
                fontWeight = FontWeight.SemiBold)
        }
        Divider(startIndent = 8.dp, thickness = 1.dp, color =
Color.Black)

        LazyColumn(
            state = listState,
            contentPadding = PaddingValues(0.dp)
        ) {
            items(menus) { menu ->
                Card(
                    shape = RoundedCornerShape(4.dp),
                    modifier = Modifier
                        .fillMaxWidth()
                        .padding(5.dp),
                    contentColor = Color.Black
                ) {
                    Row (modifier =
Modifier.padding(5.dp).clickable {
                        onClick(menu.route)
                    }) {
                        Icon(
                            menu.icon,
                            modifier =
Modifier.height(32.dp).width(32.dp),
                            contentDescription = null,
                            tint = Color.Unspecified
                        )

                        Text(
                            stringResource(id = menu.title),
                            modifier =
Modifier.height(32.dp).padding(2.dp),
                            fontSize = 18.sp,
                            fontWeight = FontWeight.SemiBold)
                    }
                }


            }
        }
    }
}
```

Kemudian, buat kelas BottomNavigationComposable.kt untuk membuat fungsi BottomNavigationComposable sebagai berikut.

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.layout.height
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.layout.width
import androidx.compose.material.BottomNavigation
import androidx.compose.material.BottomNavigationItem
import androidx.compose.material.Icon
import androidx.compose.material.LocalContentColor
import androidx.compose.runtime.Composable
import androidx.compose.ui.Modifier
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.unit.dp

@Composable
fun BottomNavigationComposable(title : String, onClick: (Menu) -
> Unit)
{
    val tabs = Menu.values()

    BottomNavigation(
        elevation = 15.dp
    ) {
        tabs.forEach { tab ->
            BottomNavigationItem(
                selected = tab.name == title,
                onClick = {
                    onClick(tab)
                },
                icon = {
                    Icon(
                        tab.icon,
                        modifier =
Modifier.height(32.dp).width(32.dp),
                        contentDescription = null,
                        tint = Color.White
                    )
                },

                selectedContentColor =
LocalContentColor.current,
                unselectedContentColor =
LocalContentColor.current,
                modifier = Modifier.padding(8.dp)
            )
        }
    }
}
```

Buatlah file untuk halaman Home dan Setting dengan nama HomeScreen.kt dan SettingScreen.kt dengan kode berikut.

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.layout.Column
import androidx.compose.material.Text
import androidx.compose.runtime.Composable

@Composable
fun HomeScreen() {
    Column {
        Text(text = "Home")
    }
}
```

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.layout.Column
import androidx.compose.material.Text
import androidx.compose.runtime.Composable

@Composable
fun SettingScreen() {
    Column {
        Text(text = "Setting")
    }
}
```

Bukalah file PengelolaanSampahScreen, tambahkan parameter snackbarHostState

```
snackbarHostState: SnackbarHostState
```

Kemudian, ubah observer toast menjadi menggunakan snackbarHostState sebagai berikut

```
viewModel.toast.observe(LocalLifecycleOwner.current) {
    scope.launch {
        snackbarHostState.showSnackbar(it, actionLabel =
"Tutup", duration = SnackbarDuration.Long)
    }
}
```

Sehingga file PengelolaanSampahScreen.kt akan terlihat seperti berikut.

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.clickable
import androidx.compose.foundation.layout.Column
import androidx.compose.foundation.layout.Row
import androidx.compose.foundation.layout.fillMaxWidth
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.items
import androidx.compose.material.Button
import androidx.compose.material.Divider
import androidx.compose.material.SnackbarDuration
import androidx.compose.material.SnackbarHostState
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.runtime.LaunchedEffect
import androidx.compose.runtime.getValue
import androidx.compose.runtime.livedata.observeAsState
import androidx.compose.runtime.rememberCoroutineScope
import androidx.compose.ui.Modifier
import androidx.compose.ui.platform.LocalContext
import androidx.compose.ui.platform.LocalLifecycleOwner
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.hilt.navigation.compose.hiltViewModel
import androidx.navigation.NavHostController
import id.ac.unpas.functionalcompose.model.SetoranSampah
import kotlinx.coroutines.launch

@Composable
fun PengelolaanSampahScreen(navController : NavHostController,
snackbarHostState: SnackbarHostState, modifier: Modifier =
Modifier) {
    val viewModel = hiltViewModel<PengelolaanSampahViewModel>()
    val scope = rememberCoroutineScope()
    val context = LocalContext.current

    val items: List<SetoranSampah> by
viewModel.list.observeAsState(initial = listOf())

    Column(modifier = modifier.fillMaxWidth()) {
        Button(onClick = {
            navController.navigate("tambah-pencatatan-sampah")
        }) {
            Text(text = "Tambah")
        }
        LazyColumn(modifier = Modifier.fillMaxWidth()) {
            items(items = items, itemContent = { item ->

                Row(modifier = Modifier
                    .padding(15.dp)
                    .fillMaxWidth().clickable {
                        navController.navigate("edit-
pengelolaan-sampah/${item.id}")
                    }) {
                    Column(modifier = Modifier.weight(3f)) {
                        Text(text = "Tanggal", fontSize = 14.sp)
                        Text(text = item.tanggal, fontSize =
16.sp, fontWeight = FontWeight.Bold)
                    }

                    Column(modifier = Modifier.weight(3f)) {
                        Text(text = "Nama", fontSize = 14.sp)
                        Text(text = item.nama, fontSize = 16.sp,
fontWeight = FontWeight.Bold)
                    }

                    Column(modifier = Modifier.weight(3f)) {
                        Text(text = "Berat", fontSize = 14.sp)
                        Text(text = "${item.berat} Kg", fontSize
= 16.sp, fontWeight = FontWeight.Bold)
                    }
                }
                Divider(modifier = Modifier.fillMaxWidth())

            })
        }
    }

    LaunchedEffect(scope) {
        viewModel.loadItems()
    }

    viewModel.success.observe(LocalLifecycleOwner.current) {
        if (it) {
            scope.launch {
                viewModel.loadItems()
            }
        }
    }

    viewModel.toast.observe(LocalLifecycleOwner.current) {
        scope.launch {
            snackbarHostState.showSnackbar(it, actionLabel =
"Tutup", duration = SnackbarDuration.Long)
        }
    }
}
```

Kemudian, bukalah file MainScreen.kt, tambahkan parameter berikut untuk komponen Scaffold

```
drawerContent = {
    DrawerContent { route ->
        navController.navigate(route)
        scope.launch {
            scaffoldState.drawerState.close()
        }
    }
},
bottomBar = {
    BottomNavigationComposable(title.value, onClick = { tab ->
        navController.navigate(tab.route)
    })
},
```

Tambahkan route untuk Home dan Setting

```
composable("home") {
    HomeScreen()
}
```

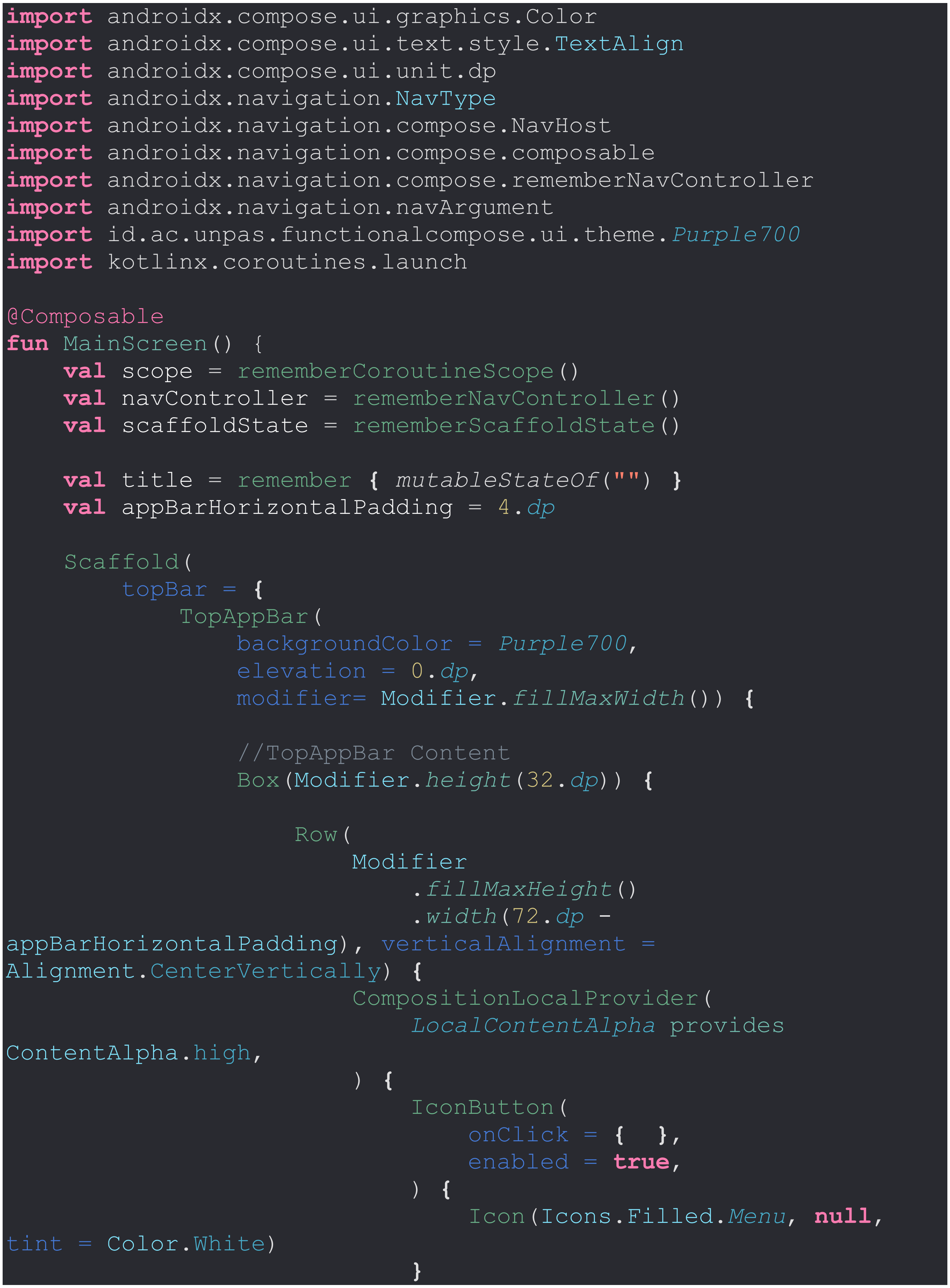
```
composable("setting") {
    SettingScreen()
}
```

Kemudian, ubah pemanggilan fungsi PengelolaanSampahScreen menjadi seperti berikut

```
composable("pengelolaan-sampah") {
    title.value = "Pengelolaan Sampah"
    PengelolaanSampahScreen(navController = navController,
snackbarHostState = scaffoldState.snackbarHostState, modifier =
Modifier.padding(innerPadding))
}
```

Sehingga, file MainScreen.kt akan terlihat seperti berikut.

```
package id.ac.unpas.functionalcompose.screens

import androidx.compose.foundation.layout.Box
import androidx.compose.foundation.layout.Column
import androidx.compose.foundation.layout.Row
import androidx.compose.foundation.layout.fillMaxHeight
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.foundation.layout.fillMaxWidth
import androidx.compose.foundation.layout.height
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.layout.width
import androidx.compose.material.ContentAlpha
import androidx.compose.material.Icon
import androidx.compose.material.IconButton
import androidx.compose.material.LocalContentAlpha
import androidx.compose.material.MaterialTheme
import androidx.compose.material.ProvideTextStyle
import androidx.compose.material.Scaffold
import androidx.compose.material.Snackbar
import androidx.compose.material.SnackbarHost
import androidx.compose.material.Text
import androidx.compose.material.TopAppBar
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.Menu
import androidx.compose.material.rememberScaffoldState
import androidx.compose.runtime.Composable
import androidx.compose.runtime.CompositionLocalProvider
import androidx.compose.runtime.mutableStateOf
import androidx.compose.runtime.remember
import androidx.compose.runtime.rememberCoroutineScope
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
```



```
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.text.style.TextAlign
import androidx.compose.ui.unit.dp
import androidx.navigation.NavType
import androidx.navigation.compose.NavHost
import androidx.navigation.compose.composable
import androidx.navigation.compose.rememberNavController
import androidx.navigation.navArgument
import id.ac.unpas.functionalcompose.ui.theme.Purple700
import kotlinx.coroutines.launch

@Composable
fun MainScreen() {
    val scope = rememberCoroutineScope()
    val navController = rememberNavController()
    val scaffoldState = rememberScaffoldState()

    val title = remember { mutableStateOf("") }
    val appBarHorizontalPadding = 4.dp

    Scaffold(
        topBar = {
            TopAppBar(
                backgroundColor = Purple700,
                elevation = 0.dp,
                modifier= Modifier.fillMaxWidth()) {

                //TopAppBar Content
                Box(Modifier.height(32.dp)) {

                    Row(
                        Modifier
                            .fillMaxHeight()
                            .width(72.dp -
appBarHorizontalPadding), verticalAlignment =
Alignment.CenterVertically) {
                        CompositionLocalProvider(
                            LocalContentAlpha provides
ContentAlpha.high,
                        ) {
                            IconButton(
                                onClick = {  },
                                enabled = true,
                            ) {
                                Icon(Icons.Filled.Menu, null,
tint = Color.White)
                            }
                        }
                    }


                    //Title
                    Row(Modifier.fillMaxSize(),
                        verticalAlignment =
Alignment.CenterVertically) {

                        ProvideTextStyle(value =
MaterialTheme.typography.h6) {
                            CompositionLocalProvider(
                                LocalContentAlpha provides
ContentAlpha.high,
                            ){
                                Text(
                                    modifier =
Modifier.fillMaxWidth(),
                                    textAlign =
TextAlign.Center,
                                    color = Color.White,
                                    maxLines = 1,
                                    text = title.value
                                )
                            }
                        }
                    }
                }
            }
        },
        scaffoldState = scaffoldState,
        snackbarHost = {
            // reuse default SnackbarHost to have default
animation and timing handling
            SnackbarHost(it) { data ->
                // custom snackbar with the custom colors
                Snackbar(
                    actionColor = Color.Green,
                    contentColor = Color.White,
                    snackbarData = data
                )
            }
        },
        drawerContent = {
            DrawerContent { route ->
                navController.navigate(route)
                scope.launch {
                    scaffoldState.drawerState.close()
                }
            }
        },
        bottomBar = {
            BottomNavigationComposable(title.value, onClick =
{ tab ->
                navController.navigate(tab.route)
            })
        },
    )
    { innerPadding ->
        Column(
            modifier = Modifier.fillMaxSize(),
            horizontalAlignment = Alignment.CenterHorizontally
        ) {
            NavHost(navController = navController,
startDestination = "pengelolaan-sampah") {
                composable("home") {
                    HomeScreen()
                }
                composable("setting") {
                    SettingScreen()
                }
                composable("pengelolaan-sampah") {
                    title.value = "Pengelolaan Sampah"
                    PengelolaanSampahScreen(navController =
navController, snackbarHostState =
scaffoldState.snackbarHostState, modifier =
Modifier.padding(innerPadding))
                }

                composable("tambah-pengelolaan-sampah") {
                    title.value = "Tambah Pengelolaan Sampah"
                    FormPencatatanSampahScreen(navController =
navController, modifier = Modifier.padding(innerPadding))
                }

                composable("edit-pengelolaan-sampah/{id}",
listOf(
                    navArgument("id") {
                        type = NavType.StringType
                    }
                )) { backStackEntry ->
                    title.value = "Edit Pengelolaan Sampah"
                    val id =
backStackEntry.arguments?.getString("id")
                            ?: return@composable

                    FormPencatatanSampahScreen(navController =
navController, id = id, modifier =
Modifier.padding(innerPadding))
                }

            }
        }
    }
}
```

Jalankan aplikasi kemudian amati hasilnya.