PRAKTIKUM
PENGEMBANGAN APLIKASI BERGERAK

MODUL 7
Case Based Learning 1
(ToDo List App)

Sistem Informasi
Telkom University
Surabaya

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PROGRAM STUDI S1 SISTEM INFORMASI
FAKULTAS REKAYASA INDUSTRI
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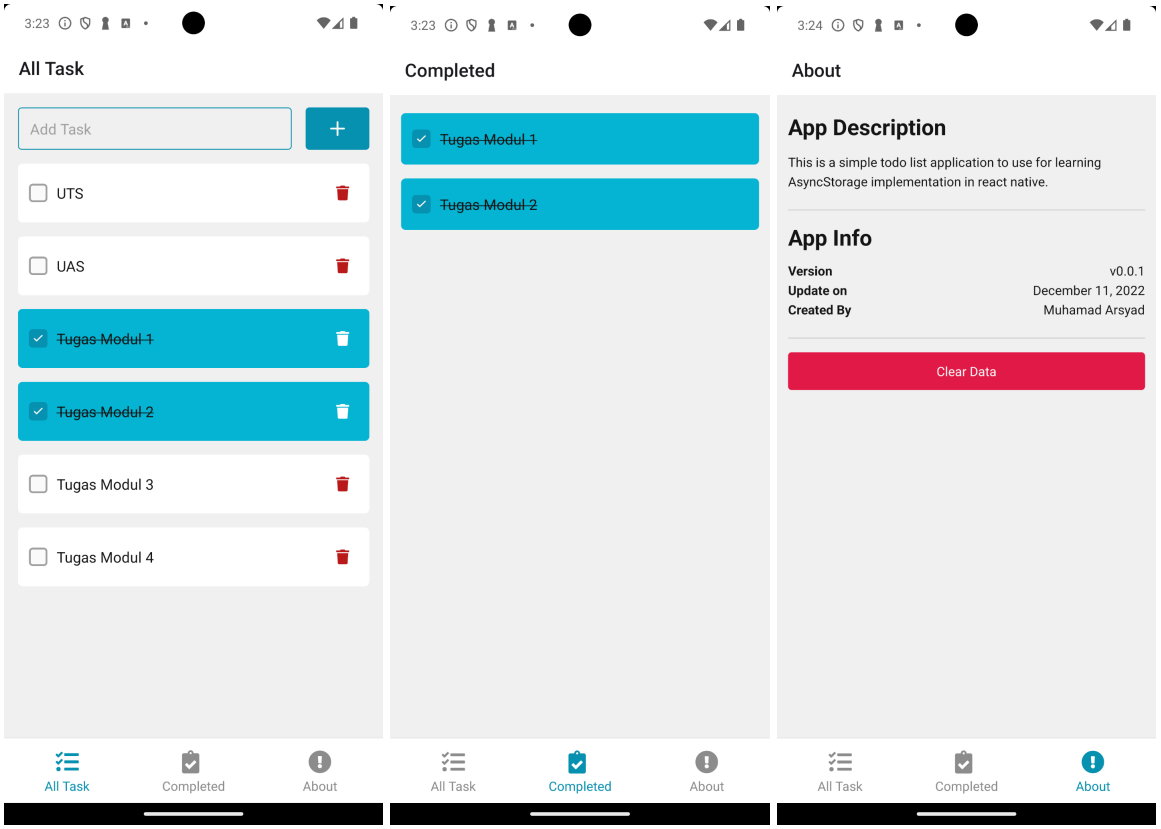
DAFTAR ISI

Modul 7
Case Based Learning 1 (ToDo List App)

Pada praktikum kali ini kita akan melanjutkan belajar dengan menggunakan studi kasus membuat aplikasi *ToDo List* sederhana. Praktikum ini dilakukan diharapkan mahasiswa mampu menerapkan aplikasi *mobile* berbasis *React Native* menggunakan ***AsyncStorage*** berdasarkan studi kasus CRUD (*Create, Read, Upload, Delete*) yang telah disampaikan.



1. Membuat Project React Native (Expo)

- Buat sebuah project **React Native** via **Expo** bernama **TodoList** dengan menjalankan command:

```
npx create-expo-app TodoList --template blank
```

- Masuk ke folder project **TodoList** yang sudah terbuat dengan menjalankan command:

```
cd TodoList
```

2. Instalasi dan Setup

- Install package-package yang diperlukan:

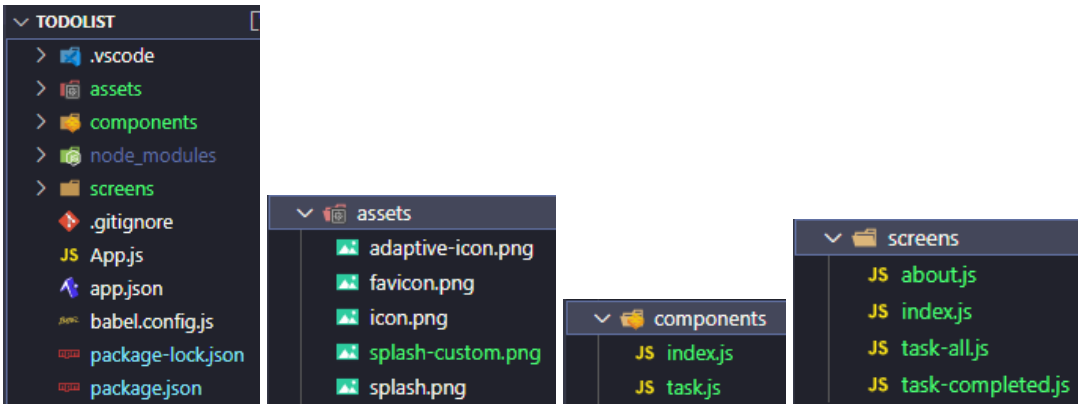
```
○ npm install @react-navigation/native@6.1.9 --legacy-peer-deps
○ npm install @react-navigation/native-stack@6.9.17 --legacy-peer-deps
○ npm install react-native-screens react-native-safe-area-context
○ npm install @react-navigation/bottom-tabs@6.5.11 --legacy-peer-deps
○ npm install @react-native-async-storage/async-storage@^2.2.0 --legacy-peer-deps
○ npm install @gluestack-ui/themed-native-base react-native-svg@13.4.0
  --legacy-peer-deps
○ npm install --save-dev babel-preset-expo --legacy-peer-deps
○ npm install native-base --legacy-peer-deps
○ npm install react-dom@19.1.0 --legacy-peer-deps
```

setelah install packagenya selanjutnya terapkan *babel.config.js*:

```
module.exports = function (api) {
    api.cache(true);
    return {
        presets: ['babel-preset-expo'],
    };
};
```

3.Persiapan Struktur Project

- Sesuaikan struktur project yang ada seperti di bawah ini dengan cara menambahkan folder-folder dan file-file yang dibutuhkan. Download file assets pada link ini:



4. Membuat Splash Screen

- Buka file *app.json* lalu terapkan kode JSON seperti di bawah ini untuk *property* ***splash***:

```
"splash": {
  "image": "./assets/splash-custom.png",
  "resizeMode": "contain",
  "backgroundColor": "#ffffff"
},
```

5. Komponen Task

- Terapkan pada file ***/components/task.js*** kode program *React Native* di bawah ini:

```
import { Text, HStack, IconButton, Icon, Box, Checkbox, Pressable }
from "native-base";
import { FontAwesome5 } from "@expo/vector-icons";

const TaskList = (props) => {
  const { data, onChecked, onDeleted, deletedIcon, onItemPress } =
props;
 return (
    <Pressable onPress={onItemPress}>
      <Box
        px={3}
        py={4}
        bg={data.isCompleted ? "primary.500" : "#fff"}
        my="7.5px"
        borderRadius="5"
      >
        <HStack w="100%" justifyContent="space-between"
alignItems="center">
          <Checkbox
            isChecked={data.isCompleted}
            onChange={onChecked}
            accessibilityLabel="This is a dummy checkbox"
            value={data.title}
            aria-label="This is a dummy checkbox"
          />
<Text
            width="100%"
            fontSize={16}
```

```
            flexShrink={1}
            textAlign="left"
            mx="10px"
            strikeThrough={data.isCompleted}
          >
            {data.title}
          </Text>
          {deletedIcon && (
            <IconButton
              size="sm"
              colorScheme="trueGray"
              icon={
                <Icon
                  as={FontAwesome5}
                  name="trash"
                  size="sm"
                  color={data.isCompleted ? "#fff" : "red.700"}
                />
              }
              onPress={onDeleted}
            />
          )}
        </HStack>
      </Box>
    </Pressable>
  );
};

export default TaskList;
```

6. Komponen Index

- Terapkan pada file ***/components/index.js*** kode program *React Native* di bawah ini:

```
import TaskList from "./task";

export { TaskList };
```

7. Komponen About

- Terapkan pada file ***/screens/about.js*** kode program *React Native* di bawah ini:

```
import React, { useState } from "react";
import {
    Box,
    Button,
    Divider,
    Heading,
    HStack,
    ScrollView,
    Text,
    VStack,
    Center,
} from "native-base";
import { Modal, TouchableOpacity, StyleSheet, View } from
"react-native";
import AsyncStorage from
"@react-native-async-storage/async-storage";

const AboutScreen = () => {
    const [isClearDataOpen, setIsClearDataOpen] = useState(false);

    const handleClearData = async () => {
        try {
            await AsyncStorage.clear();
            setIsClearDataOpen(false);
        } catch (e) {
            console.log("Error clearing data in about.js");
            console.error(e);
        }
    };

    const AlertClearData = () => {
        return (
            <Modal
                transparent={true}
                visible={isClearDataOpen}
                onRequestClose={() => setIsClearDataOpen(false)}
                animationType="fade"
            >
                <View style={styles.modalOverlay}>
                    <View style={styles.modalContent}>
                        <Text style={styles.modalTitle}>Clear
```

```
Data</Text>
                        <Text style={styles.modalBody}>
                            This action will delete all todo list
data. Data that has been
                            deleted cannot be restored!
                        </Text>
                        <View style={styles.modalFooter}>
                            <TouchableOpacity
                                style={[styles.button,
styles.cancelButton]}
                                onPress={() =>
setIsClearDataOpen(false)}
                            >
                                <Text
style={styles.cancelText}>Cancel</Text>
                            </TouchableOpacity>
                            <TouchableOpacity
                                style={[styles.button,
styles.deleteButton]}
                                onPress={handleClearData}
                            >
                                <Text
style={styles.deleteText}>Delete</Text>
                            </TouchableOpacity>
                        </View>
                    </View>
                </View>
            </Modal>
        );
    };
    return (
        <Box flex={1}>
            <AlertClearData />
            <ScrollView px={3} py={5}>
                <Box>
                    <Heading>App Description</Heading>
                    <Text mt={3}>
                        This is a simple todo list application to
use for learning
                        AsyncStorage implementation in react
native.
```

```
                    </Text>
                </Box>
                <Divider mt="20px" mb="15px" />
                <Box>
                    <Heading mb="10px">App Info</Heading>
                    <VStack>
                        <HStack justifyContent={"space-between"}>
                            <Text
fontWeight={"bold"}>Version</Text>
                            <Text>v0.0.1</Text>
                        </HStack>
                        <HStack justifyContent={"space-between"}>
                            <Text fontWeight={"bold"}>Update
on</Text>
                            <Text>December 11, 2022</Text>
                        </HStack>
                        <HStack justifyContent={"space-between"}>
                            <Text fontWeight={"bold"}>Created
By</Text>
                            <Text>Muhamad Arsyad</Text>
                        </HStack>
                    </VStack>
                </Box>
                <Divider mt="20px" mb="15px" />
                <Box>
                    <Button
                        colorScheme="danger"
                        onPress={() => setIsClearDataOpen(true)}
                        mb={5}
                    >
                        Clear Data
                    </Button>
                </Box>
            </ScrollView>
        </Box>
    );
};

const styles = StyleSheet.create({
    modalOverlay: {
        flex: 1,
```

```
        backgroundColor: 'rgba(0, 0, 0, 0.5)',
        justifyContent: 'center',
        alignItems: 'center',
    },
    modalContent: {
        backgroundColor: 'white',
        borderRadius: 8,
        padding: 20,
        width: '85%',
        maxWidth: 400,
    },
    modalTitle: {
        fontSize: 18,
        fontWeight: 'bold',
        marginBottom: 12,
        color: '#1f2937',
    },
    modalBody: {
        fontSize: 14,
        color: '#4b5563',
        marginBottom: 20,
        lineHeight: 20,
    },
    modalFooter: {
        flexDirection: 'row',
        justifyContent: 'flex-end',
        gap: 10,
    },
    button: {
        paddingVertical: 8,
        paddingHorizontal: 16,
        borderRadius: 4,
        minWidth: 70,
        alignItems: 'center',
    },
    cancelButton: {
        backgroundColor: '#f3f4f6',
    },
    deleteButton: {
        backgroundColor: '#dc2626',
    },
```

```
    cancelText: {
        color: '#6b7280',
        fontWeight: '500',
    },
    deleteText: {
        color: '#fff',
        fontWeight: '500',
    },
});

export default AboutScreen;
```

8. Komponen Task All

- Terapkan pada file ***/screens/task-all.js*** kode program *React Native* di bawah ini:

```
import React, { useState, useEffect } from "react";
import {
  Box,
  HStack,
  IconButton,
  Icon,
  Center,
  Toast,
  ScrollView,
  Spinner,
} from "native-base";
import { TextInput, StyleSheet } from "react-native";
import { Feather } from "@expo/vector-icons";
import AsyncStorage from "@react-native-async-storage/async-storage";
import { TaskList } from "../components";

const TaskScreen = () => {
  const [list, setList] = useState([]);
  const [inputValue, setInputValue] = useState("");
  const [isLoading, setIsLoading] = useState(true);

  const toastID = "toast-add-task";
```

```
  const handleAddTask = (data) => {
    if (data === "") {
      if (!Toast.isActive(toastID)) {
        Toast.show({
          id: toastID,
          title: "Masukan nama task",
        });
      }
return;
    }

    setList((prevList) => [...prevList, { title: data, isCompleted:
false }]);
    setInputValue("");

    try {
      AsyncStorage.setItem(
        "@task-list",
        JSON.stringify([...list, { title: data, isCompleted: false
}])
      );
    } catch (e) {
      console.log("Error add task: in task-all.js");
      console.error(e.message);
    }
};

  const handleDeleteTask = (index) => {
    const deletedList = list.filter((_, listIndex) => listIndex !==
index);
    setList(deletedList);

    try {
      AsyncStorage.setItem("@task-list",
JSON.stringify(deletedList));
    } catch (e) {
      console.log("Error delete task: in task-all.js");
      console.error(e.message);
    }
  };
```

```
  const handleStatusChange = (index) => {
    setList((prevList) => {
      const newList = [...prevList];
      newList[index].isCompleted = !newList[index].isCompleted;
      return newList;
    });

    try {
      AsyncStorage.setItem("@task-list", JSON.stringify(list));
    } catch (e) {
      console.log("Error update status task: in task-all.js");
      console.error(e.message);
    }
  };
const getTaskList = async () => {
    try {
      const value = await AsyncStorage.getItem("@task-list");
      if (value !== null) {
        console.log(value);
        setList(JSON.parse(value));
      } else {
        console.log("No Tasks");
      }
    } catch (e) {
      console.log("Error get task: in task-all.js");
      console.error(e);
    } finally {
      setIsLoading(false);
    }
  };

  useEffect(() => {
    getTaskList();
  }, []);

  return (
    <Box flex={1}>
      <Box mt="15px" mx="15px" mb="7.5px">
        <HStack space="15px">
          <TextInput
```

```
            style={styles.input}
            onChangeText={(char) => setInputValue(char)}
            value={inputValue}
            placeholder="Add Task"
            placeholderTextColor="#9ca3af"
          />
          <IconButton
            flex={1}
            borderRadius="sm"
            variant="solid"
            icon={
              <Icon as={Feather} name="plus" size="lg"
color="warmGray.50" />
            }
            onPress={() => {
              handleAddTask(inputValue);
            }}
          />
        </HStack>
      </Box>
      {isLoading ? (
        <Center flex={1}>
          <Spinner size="lg" />
        </Center>
      ) : (
        <ScrollView>
          <Box mb="15px" mx="15px">
            {list.map((item, index) => (
              <Box key={item.title + index.toString()}>
                <TaskList
                  data={item}
 index={index}
                  deletedIcon={true}
                  onItemPress={() => handleStatusChange(index)}
                  onChecked={() => handleStatusChange(index)}
                  onDeleted={() => handleDeleteTask(index)}
                />
              </Box>
            ))}
          </Box>
        </ScrollView>
```

```
      )}
    </Box>
  );
};

const styles = StyleSheet.create({
  input: {
    flex: 6,
    height: 48,
    borderWidth: 1,
    borderColor: "#0891b2",
    borderRadius: 4,
    paddingHorizontal: 15,
    fontSize: 16,
    backgroundColor: "#fff",
  },
});

export default TaskScreen;
```

9. Komponen Task Completed

- Terapkan pada file ***/screens/task-completed.js*** kode program *React Native* di bawah ini:

```
import React, { useState, useEffect } from "react";
import { Center, Text, Box, ScrollView, Icon, Spinner } from
"native-base";
import { AntDesign } from "@expo/vector-icons";
import AsyncStorage from
"@react-native-async-storage/async-storage";
import { TaskList } from "../components";

const TaskCompletedScreen = () => {
  const [completedListLength, setCompletedListLength] =
useState(0);
  const [allList, setAllList] = useState([]);
  const [isLoading, setIsLoading] = useState(true);
const handleStatusChange = (index) => {
```

```
    const newList = [...allList];
    newList[index].isCompleted = !newList[index].isCompleted;
    setAllList(newList);
    try {
      AsyncStorage.setItem("@task-list", JSON.stringify(newList));
    } catch (e) {
      console.log("Error update status task: in
task-completed.js");
      console.error(e.message);
    } finally {
      setCompletedListLength(newList.filter((item) =>
item.isCompleted).length);
    }
  };

  const getTaskList = async () => {
    try {
      const value = await AsyncStorage.getItem("@task-list");
      if (value !== null) {
        const allData = JSON.parse(value);
        const completedData = allData.filter((item) =>
item.isCompleted).length;
        setAllList(allData);
        setCompletedListLength(completedData);
      } else {
        console.log("No tasks");
      }
    } catch (e) {
      console.log("Error get task: in task-completed.js");
      console.error(e);
    } finally {
      setIsLoading(false);
}
  };

  useEffect(() => {
    getTaskList();
  }, []);

  return (
    <Box mx={3} mt={3} flex={1}>
```

```
      {isLoading ? (
        <Center flex={1}>
          <Spinner size="lg" />
        </Center>
      ) : completedListLength === 0 ? (
        <Center flex={1}>
          <Icon as={AntDesign} name="frown" size={82}
color="primary.600" mb={2} />
          <Text fontSize={16} bold={true}>
            No completed listings yet
          </Text>
          <Text fontSize={16}>Hurry up your list!</Text>
        </Center>
      ) : (
        <ScrollView>
          {allList.map((item, index) => {
            if (item.isCompleted) {
              return (
                <Box key={item.title + index.toString()}>
                  <TaskList
                    data={item}
                    onChecked={() => handleStatusChange(index)}
                    onItemPress={() => handleStatusChange(index)}
                  />
                </Box>
              );
            }
            return null;
          })}
</ScrollView>
      )}
    </Box>
  );
};

export default TaskCompletedScreen;
```

10. Komponen Index

- Terapkan pada file ***/screens/index.js*** kode program *React Native* di bawah ini:

```
import AboutScreen from "./about";
import TaskScreen from "./task-all";
import TaskCompletedScreen from "./task-completed";

export { AboutScreen, TaskCompletedScreen, TaskScreen };
```

11. Komponen App.js

- Terapkan pada file ***App.js*** kode program *React Native* di bawah ini:

```
import { NativeBaseProvider, Icon, Text } from "native-base";
import { NavigationContainer } from "@react-navigation/native";
import { createBottomTabNavigator } from
"@react-navigation/bottom-tabs";
import { FontAwesome5, MaterialIcons } from "@expo/vector-icons";
import { SafeAreaProvider, useSafeAreaInsets } from
"react-native-safe-area-context";
import { AboutScreen, TaskCompletedScreen, TaskScreen } from
"./screens";
const Tab = createBottomTabNavigator();

const AppContent = () => {
  const insets = useSafeAreaInsets();

  return (
    <NativeBaseProvider>
      <NavigationContainer>
        <Tab.Navigator
          screenOptions={({ route }) => ({
            tabBarIcon: ({ focused, color, size }) => {
              let iconName;
              let IconComponent = FontAwesome5;

              if (route.name === "All Task") {
                iconName = "tasks";
                IconComponent = FontAwesome5;
              } else if (route.name === "Completed") {
                iconName = "check-circle";
                IconComponent = MaterialIcons;
```

```
            } else if (route.name === "About") {
              iconName = "info-circle";
              IconComponent = FontAwesome5;
            }

            return (
              <Icon
                as={IconComponent}
                name={iconName}
                size={6}
                color={focused ? "#0891b2" : color}
              />
            );
          },
          tabBarIconStyle: { marginTop: 5 },
          tabBarLabel: ({ children, color, focused }) => {
            return (
              <Text color={focused ? "#0891b2" : color} mb={1}
fontSize={9} fontWeight={focused ? "600" : "400"}
numberOfLines={1}>
                {children}
              </Text>
            );
          },
          tabBarStyle: {
            height: 58 + insets.bottom,
            paddingBottom: Math.max(insets.bottom, 8),
            borderTopWidth: 0,
            elevation: 8,
            shadowColor: "#000",
            shadowOffset: { width: 0, height: -2 },
            shadowOpacity: 0.1,
            shadowRadius: 3,
            paddingTop: 5,
          },
          tabBarActiveTintColor: "#0891b2",
          tabBarInactiveTintColor: "#6b7280",
        })}
      >
        <Tab.Screen
          name="All Task"
```

```
          component={TaskScreen}
          options={{
            headerStyle: {
              backgroundColor: "#0891b2",
            },
            headerTintColor: "#fff",
            headerTitleStyle: {
              fontWeight: "bold",
            },
          }}
        />
        <Tab.Screen
          name="Completed"
          component={TaskCompletedScreen}
          options={{
            headerStyle: {
              backgroundColor: "#0891b2",
            },
            headerTintColor: "#fff",
            headerTitleStyle: {
              fontWeight: "bold",
            },
          }}
        />
        <Tab.Screen
          name="About"
          component={AboutScreen}
          options={{
            headerStyle: {
              backgroundColor: "#0891b2",
            },
            headerTintColor: "#fff",
            headerTitleStyle: {
              fontWeight: "bold",
            },
          }}
        />
      </Tab.Navigator>
    </NavigationContainer>
  </NativeBaseProvider>
);
```

```
};

const App = () => {
  return (
    <SafeAreaProvider>
      <AppContent />
    </SafeAreaProvider>
  );
};

export default App;
```

12. Tugas

1. Praktekkan seluruh poin praktikum yang ada di atas.
2. Dokumentasikan hasil praktikum tersebut **(screenshot kode program, output pada browser, penjelasan kode program yang ditulis)** dalam bentuk Laporan Praktikum.
3. Letakkan source code hasil praktikum ke **Github**. Sertakan info **link repository** source code nya pada Laporan Praktikum.
4. Kumpulkan Laporan Praktikum **(.pdf)** via E-Learning paling lambat sebelum jadwal praktikum minggu depan.