Practicum Case	
COMP6178 | COMP6178003 Introduction to Programming	
Computer Science	**C1-COMP6178-SH01-10**
Valid on *Even Semester Year 2019/2020*	**Revision 00**

Learning Outcomes
- LO1 – Explain the kind of the algorithm in problem solving
- LO2 – Explain the usefulness of java syntax and OOPs
- LO3 – Explain the algorithm using java syntax
- LO4 – Explain the best algorithm in problem solving

Topic
- Session 10 – Sorting

Sub Topics
- Bubble Sort
- Insertion Sort
- Merge Sort
- Selection Sort
- Sorting Definition

Soal
Case

Patient's Data

Patient's Data is a program to input and view the patient's data in a hospital. As a programmer, you are asked to the program that consists of **3 menus**:

1. **Input New Data**
2. **View Patient's Data**
3. **Exit**

```
               Patient's Data
               ++++++++++++++
1. Input new Data
2. View Patient's Data
3. Exit
Choose :
```

- If user chooses **menu 1** (**input new data**), then:
  - The program will ask user to input:
    - **Name** must be **between 3 and 20 characters**.
    - **Age** must be **between 10 and 100** and must be **numeric**.
    - **Address** must be **between 5 and 30 characters**.
  - If the user has inputted the data correctly, the program will show "**Data has been successfully inserted!**".

```
Input name [3..20]: jo
Input name [3..20]: jonathan
Input age [10..100]: ten
Input must be numeric!

Input age [10..100]: 10
Input address [5..30]: Central City
Data has been successfully inserted!
```

- If user chooses **menu 2** (**view patient's data**), then:
  - The program will show **no**, **name**, **age**, and **address** of the patient and show the **5 sub menus**:
    1. **Sort Data by Name Ascending**
    2. **Sort Data by Name Descending**
    3. **Sort Data by Age Ascending**
    4. **Sort Data by Age Descending**
    5. **Back**

```
No. | Name                | Age   | Address
============================================================
1   | jonathan            | 10    | Central City
2   | shirley             | 27    | North Park
3   | eugenie             | 40    | Green Street

1. Sort data by Name Ascending
2. Sort data by Name Descending
3. Sort data by Age Ascending
4. Sort data by Age Descending
5. Back
Choose :
```

    - If user chooses **sub menu 1** (**sort data by name ascending**), the data will be **sorted by name ascending**.

```
No. | Name                | Age   | Address
============================================================
1   | eugenie             | 40    | Green Street
2   | jonathan            | 10    | Central City
3   | shirley             | 27    | North Park

1. Sort data by Name Ascending
2. Sort data by Name Descending
3. Sort data by Age Ascending
4. Sort data by Age Descending
5. Back
Choose :
```

    - If user chooses **sub menu 2** (**sort data by name descending**), the data will be **sorted by name descending**.

```
No. | Name                | Age   | Address
============================================================
1   | jonathan            | 10    | Central City
2   | shirley             | 27    | North Park
3   | eugenie             | 40    | Green Street

1. Sort data by Name Ascending
2. Sort data by Name Descending
3. Sort data by Age Ascending
4. Sort data by Age Descending
5. Back
Choose :
```

- If user chooses **sub menu 3** (**sort data by age ascending**), the data will be **sorted by age ascending**.

```
No. | Name                | Age   | Address
============================================================
1   | jonathan            | 10    | Central City
2   | shirley             | 27    | North Park
3   | eugenie             | 40    | Green Street

1. Sort data by Name Ascending
2. Sort data by Name Descending
3. Sort data by Age Ascending
4. Sort data by Age Descending
5. Back
Choose :
```

- If user chooses **sub menu 4** (**sort data by age descending**), the data will be **sorted by age descending**.

```
No. | Name                | Age   | Address
============================================================
1   | eugenie             | 40    | Green Street
2   | shirley             | 27    | North Park
3   | jonathan            | 10    | Central City

1. Sort data by Name Ascending
2. Sort data by Name Descending
3. Sort data by Age Ascending
4. Sort data by Age Descending
5. Back
Choose :
```

- If user chooses **sub menu 5** (**Back**), the program will be **back to main menu**.

➢ If there is **no data**, the program will show "**No Data!**"

```
No data!
```

- If user chooses **menu 3** (**Exit**), the program will be closed.

Please run the EXE file to see the sample program.