


Practicum Final Exam – Example Case		
<b>Subject</b> COMP6048 – Data Structures COMP6048001 – Data Structures COMP6048016 – Data Structures COMP6048049 – Data Structures		
<b>Class</b> : -	<b>Start Date</b> : -	
<b>Lecture</b> : -	<b>Start Time</b> : -	
	<b>End Date</b> : -	
	<b>End Time</b> : -	

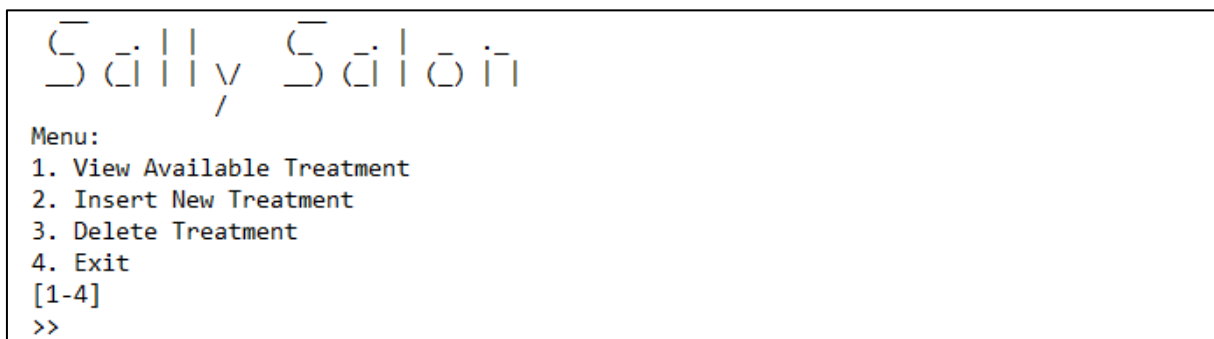
## Soal

### Case

## Sally Salon

**Sally Salon** is an application used to manage customer data using old technology. Recently, the owner of Sally Salon, Ms. Suki, decides to hire you to help her build a faster, more reliable application using **AVL Tree** as its algorithm. You are to create an application based on the following requirements.

- At the start of the program, there will be **4 menus**, which consists of:
  - View Available Treatment**
  - Insert New Treatment**
  - Delete Treatment**
  - Exit**

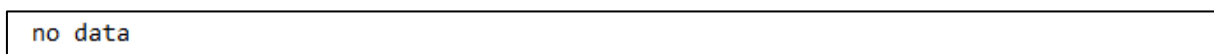


```

Sally Salon
Menu:
1. View Available Treatment
2. Insert New Treatment
3. Delete Treatment
4. Exit
[1-4]
>>
  
```

*Figure 1. Main Menu*

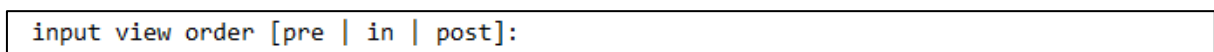
- If user choose **menu 1** (“**View Available Treatment**”), the program will:
  - Check data from AVL Tree. If there are **no data**, **display** following message.



```
no data
```

*Figure 2. No Data Message*

- Otherwise:
  - Prompt user to input **view order**. Validate the input must be **between** “**pre**”, “**in**”, and “**post**” (case sensitive).



```
input view order [pre | in | post]:
```

*Figure 3. View Input Prompt*

- If view order is “pre”, display all data in **pre-order** format.

```
=====
||      Treatment      ||      Category      ||      Price      ||      Home Service      ||
=====
|| Sally Manicure Plus || Nail Care          || 50000           || Available               ||
|| Sally Hair Wash     || Hair Care          || 50000           || Unavailable             ||
|| Sally Blow Dry      || Hair Care          || 50000           || Available               ||
|| Sally Haircut       || Hair Care          || 250000          || Available               ||
|| Sally Nail Extension || Nail Care          || 50000           || Available               ||
|| Sally Oil Massage   || Body Care          || 100000          || Available               ||
=====
Press enter to continue..
```

*Figure 4. View Data in Pre-Order Format*

- If view order is “in”, display all data in **in-order** format.

```
=====
||      Treatment      ||      Category      ||      Price      ||      Home Service      ||
=====
|| Sally Blow Dry      || Hair Care          || 50000           || Available               ||
|| Sally Hair Wash     || Hair Care          || 50000           || Unavailable             ||
|| Sally Haircut       || Hair Care          || 250000          || Available               ||
|| Sally Manicure Plus || Nail Care          || 50000           || Available               ||
|| Sally Nail Extension || Nail Care          || 50000           || Available               ||
|| Sally Oil Massage   || Body Care          || 100000          || Available               ||
=====
Press enter to continue..
```

*Figure 5. View Data in In-Order Format*

- If view order is “post”, display all data in **post-order** format.

```
=====
||      Treatment      ||      Category      ||      Price      ||      Home Service      ||
=====
|| Sally Blow Dry      || Hair Care          || 50000           || Available               ||
|| Sally Haircut       || Hair Care          || 250000          || Available               ||
|| Sally Hair Wash     || Hair Care          || 50000           || Unavailable             ||
|| Sally Oil Massage   || Body Care          || 100000          || Available               ||
|| Sally Nail Extension || Nail Care          || 50000           || Available               ||
|| Sally Manicure Plus || Nail Care          || 50000           || Available               ||
=====
Press enter to continue..
```

*Figure 6. View Data in Post-Order Format*

- If user choose **menu 2** (“**Insert New Treatment**”), the program will:
  - Prompt user to input **treatment name**. Validate the input based on the following conditions:
    - Input must **starts with “Sally”**.
    - Input must be **between 5 and 20 characters (inclusive)**.
    - Input must contains **2 words** at minimum.
  - Prompt user to input **treatment price**. Validate the input must be **between 50000 and 1000000**.
  - Prompt user to input **treatment category**. Validate the input must be **between “Hair Care”, “Nail Care”, and “Body Care” (case sensitive)**.
  - Prompt user to input **treatment availability**. Validate the input must be **between “Available” and “Unavailable” (case sensitive)**.
  - Finally, **push** all data unto the **AVL Tree** with **treatment name** as its **key**.

```

INSERT NEW TREATMENT
input new treatment name: Haircut
input new treatment name: Sally Haircut
input treatment price [50000 - 1000000]: Rp25000
input treatment price [50000 - 1000000]: Rp250000
input treatment category [Hair Care | Nail Care | Body Care]: hair care
input treatment category [Hair Care | Nail Care | Body Care]: Hair Care
input treatment availability for home service [Available | Unavailable]: avail
input treatment availability for home service [Available | Unavailable]: Available

[New Treatment is successfully inserted]
Press enter to continue..

```

*Figure 7. Insert Treatment Data Input*

- If user choose **menu 3** (“**Delete Treatment**”), the program will :
  - Check data from **AVL Tree**. If there are **no data**, **display** following message.

```
no data
```

*Figure 8. No Data Message*

- Otherwise:
  - **Display** all data in **in-order** format.
  - Prompt user to input **treatment name**.

```

DELETE TREATMENT
input treatment name to be deleted:

```

*Figure 9. Delete Input*

- Check data from **AVL Tree** based on input. If data **not exists**, **display** following message.

```
DELETE TREATMENT
input treatment name to be deleted: A

Data not found
Press enter to continue..
```

*Figure 10. Searched Data Not Exists*

- Otherwise, **remove** corresponding data from **AVL Tree** and **display** following message.

```
DELETE TREATMENT
input treatment name to be deleted: Sally Haircut

[Delete successfully]
Press enter to continue..
```

*Figure 11. Successfully Delete Data Message*

- If user choose **menu 4** (“Exit”), the program will **close**.