| **Soal Praktikum**<br>*Practicum Case*<br><br>COMP6362<br>Data Structures | BINUS MALANG<br>Institute of<br>Creative Technology |
|---|---|
| **Teknik Informatika**<br>*Computer Science* | CS-COMP6362-Var02.3 |
| **Periode Berlaku Mulai** Semester Genap 2019/2020<br>***Valid on*** *Even Semester Year* 2019/2020 | **Revisi 00**<br>*Revision 00* |

**Learning Outcomes**
- Explain the concept of data structure and its usage in application
- Demonstrate how to create any learned data structure

**Topic**
- Session 04 - Stack

**Sub Topics**
- Stack Implementation Using Array of Struct
- Stack Implementation Using Linked List

**Soal**
*Case*

      Mr. Tony is a manager from a Telkom Information Center. One day, Mr. Tony wants to change the old information system of his information center into a new system. So he asks you as a skillful programmer to make a program using a linked list concept. Here are the descriptions of the program:
- The program consists of 3 menus:
  1. Information List
  2. Add (PUSH) New Information
  3. Delete (POP) Recently Added Information
  4. Exit

- If user chooses **Information List**, then show **the information list** that contains **No**, **Name**, **Type**, **Address**, and **Phone** of people or company or society.

- If user chooses **Add (PUSH) New Information**, then:
  - Ask user to input **the name of person** or **company** or **society** that he/she wants to add to the list. Its length must be **between 3 and 20 characters**.
  - Ask user to input **the type of new name**. **The type of new entry name** must be **between "person"**, **"company"**, or **"society"**.
  - Ask user to input **Address**. **Its address** must be **between 6 and 20 length**.
  - Ask user to input **Phone** . **Its phone** must be **between 9 and 12 length**.
  - If data has been successfully added, show the message **"--- Add New Information Success ---"**

- If user chooses **Delete (POP) Recently Added Information**, then:
  - If there is any data in the application, the application will delete the first data in the list and show the message "The recently added information is being delete.".
  - If there is no data in the application, then application will show the message "There are no information available.".

- If user chooses **Exit**, then:
  - Delete all data in the linked list.
  - Program ends.

**Please run the EXE file to see the sample program.**

**Print Screen of Main Menu**

```
INFORMATION ADMINISTRATOR
=========================
1. Information List
2. Add <PUSH> New Information
3. Delete <POP> Lastest Information
4. Exit

>> Input your choice :
```

**Print Screen of Item List Menu (Menu '1') with no data**

```
                   --- INFORMATION LIST ---
------+----------------------+----------+--------------------+-----------------
: No. : name                 : type     : address            :      phone      :
------+----------------------+----------+--------------------+-----------------
------+----------------------+----------+--------------------+-----------------
```

**Print Screen of Item List Menu (Menu '1') with any data**

```
                   --- INFORMATION LIST ---
------+----------------------+----------+--------------------+-----------------
: No. : name                 : type     : address            :      phone      :
------+----------------------+----------+--------------------+-----------------
:   1.: AXA                   : company  : Malang             : 0341 432109     :
:   2.: The Djamoeren         : society  : Jl. Apel 27, Malang: 0876543219      :
------+----------------------+----------+--------------------+-----------------
```

**Print Screen of Add (PUSH) New Information Menu (Menu '2')**

```
Input Name of person/company/society [3..20]: The Djamoeren

Input The Type of New Entry Name [person/company/society]: society

Input Address of New Entry Name [6...20]: Jl. Apel 27, Malang

Input Phone of New Entry Name [9..12]: 0876543219



--- Add New Information Success ---
```

```
Input Name of person/company/society [3..20]: AXA

Input The Type of New Entry Name [person/company/society]: company

Input Address of New Entry Name [6...20]: Malang

Input Phone of New Entry Name [9..12]: 0341 432109



--- Add New Information Success ---
```

**Print Screen of Item List Menu (Menu '3')**

```
The information about AXA (company) is being delete.
```

```
The information about The Djamoeren (society) is being delete.
```

**Print Screen of Item List Menu (Menu '3') and there are no item available.**

```
There are no information available.
```