


Practicum Case	
COMP6268 Algorithm and Programming	
Computer Science	E1-COMP6268-FS01
<i>Valid on Even Semester Year 2019/2020</i>	Revision 00

Learning Outcomes

- Explain algorithms in problem solving
- Construct a program using C programming language

Topic

- Session 09 – Function

Sub Topics

- Modular Programming
- Function
- Identifier Scoping
- Passing Parameter
- Various Function Defined in string.h and ctype.h Header
- Program Example Using String Function for Validation

Soal

Case

Bluejack Soy Factory is a factory that sells soy based product. You, as a programmer of the factory, are assigned to create a program that **display, add new, and update product**. All products are stored in **array**. Here are the descriptions of the program:

- At the beginning, the program will store 5 products data into array such as:

Product ID	Product Name	Quantity	Price
PR001	Soy Sauce	7	21000
PR002	Tofu	25	3000
PR003	Tempe	30	2500
PR004	Soy Milk	16	6500
PR005	Soy Yogurt	10	18000

- Program consists of 4 menus:
 - View Catalog**
 - Add New product**
 - Update Product**
 - Exit**
- If user chooses **View Catalog** (menu '1'), then:
 - Display **Product ID, Product Name, Quantity, and Price** for each product.
- If user chooses **Add New Product** (menu '2'), then:
 - The program will ask user to input **Product ID**. Validate:
 - **Product ID** must be **5 characters**.
 - **Product ID** must be **started with 'PR' and followed by 3 digits of number**.

For example:

<p style="text-align: center;">PRXXX Where, XXX = [0-9] [0-9] [0-9]</p>

- **Product ID** must be **different** from the **existing Product ID** on the list.
 - The program will ask user to input **Product Name**. Validate:
 - **Product Name length** must be **between 5 and 30 characters**.
 - **Product Name** must **not contain number**.

- The program will ask user to input **Quantity**. Validate the **Quantity must be between 1 and 100**.
- The program will ask user to input **Price**. Validate the **Price must be between 1000 and 100000**.
- If user chooses **Update Product** (menu '3'), then:
 - The program will ask user to input **Product ID**. Validate:
 - **Product ID must be 5 characters.**
 - **Product ID must be started with 'PR' and followed by 3 digits of number.**For example:

PRXXX
Where, **XXX** = [0-9] [0-9] [0-9]

 - **Product ID must be different from the existing Product ID on the list.**
 - The program will ask user to input **new Product Name**. Validate:
 - **New Product Name length must be between 5 and 30 characters.**
 - **New Product Name must not contains number.**
 - The program will ask user to input **new Quantity**. Validate the **new Quantity must be between 1 and 100**.
 - The program will ask user to input **new Price**. Validate the **new Price must be between 1000 and 100000**.
 - The program will **update** the product with the **new product data**, then **back to main menu**.
- If user chooses **Exit** (menu '4'), then the program will be closed.

Print Screen of Initial Screen

```
Bluejack Soy Factory
Product Catalog
=====
Menu
1. View catalog
2. Add new product
3. Update product
4. Exit
Input :
```

Print Screen of View Catalog (Menu '1')

```
=====
| Product ID | Product Name | Quantity | Price |
=====
| PR001      | Soy Sauce   | 7        | 21000 |
| PR002      | Tofu        | 25       | 3000  |
| PR003      | Tempe       | 30       | 2500  |
| PR004      | Soy Milk    | 16       | 6500  |
| PR005      | Soy Yogurt  | 10       | 18000 |
=====
```

Press enter to back. . .

Print Screen of Add New Product (Menu '2')

```
=====
| Product ID | Product Name | Quantity | Price |
=====
| PR001      | Soy Sauce   | 7        | 21000 |
| PR002      | Tofu        | 25       | 3000  |
| PR003      | Tempe       | 30       | 2500  |
| PR004      | Soy Milk    | 16       | 6500  |
| PR005      | Soy Yogurt  | 10       | 18000 |
=====

Input product id [PRXXX] : PR001
Product id PR001 already exists ?
Input product id [PRXXX] : PR123
Input product name [5..30] : asdf
Product name length must be between 5 and 30 characters
Input product name [5..30] : asdf1
Product name must be alphabetical ?
Input product name [5..30] : New Product
Input product Quantity [1..100] : 101
Product Quantity must be between 1 and 100 pcs
Input product Quantity [1..100] : 99
input prdouct price [1000..100000]: 999
Product price must be between Rp 1000 and Rp 100000
input prdouct price [1000..100000]: 15000
```

Print Screen of Product List after Added New Product

Product ID	Product Name	Quantity	Price
PR001	Soy Sauce	7	21000
PR002	Tofu	25	3000
PR003	Tempe	30	2500
PR004	Soy Milk	16	6500
PR005	Soy Yogurt	10	18000
PR123	New Product	99	15000

Press enter to back. . .

Print Screen of Update Product (Menu '3')

```
=====
| Product ID | Product Name | Quantity | Price |
=====
| PR001      | Soy Sauce   | 7        | 21000 |
| PR002      | Tofu        | 25       | 3000  |
| PR003      | Tempe       | 30       | 2500  |
| PR004      | Soy Milk    | 16       | 6500  |
| PR005      | Soy Yogurt  | 10       | 18000 |
=====
Input product id [PRXXX]      : PR000
Product id not found !

Input product id [PRXXX]      : PR001
Input product name [5..30]    : Product 1
Product name must be alphabetical !
Input product name [5..30]    : Product A
Input product Quantity [1..100] : 101
Product Quantity must be between 1 and 100 pcs
Input product Quantity [1..100] : 99
input prdouct price [1000..100000]: 101000
Product price must be between Rp 1000 and Rp 100000
input prdouct price [1000..100000]: 99000
```

Print Screen of Product List after Product Updated

```
=====
| Product ID | Product Name | Quantity | Price |
=====
| PR001      | Product A    | 99       | 99000 |
| PR002      | Tofu         | 25       | 3000  |
| PR003      | Tempe        | 30       | 2500  |
| PR004      | Soy Milk     | 16       | 6500  |
| PR005      | Soy Yogurt   | 10       | 18000 |
=====
Press enter to back. . .
```