Jobsheet 9

Subject	Data Structure and Algorithm
Lecturer	Imam Fahrur Rozi ST. MT.
Type	Assignment
Semester	Semester 2
Time	@April 13, 2023
Files & Media	

Assignment

1. code

```
package Asg;

public class Asg1
{
    int size, top;
    char[] data;

    Asg1(int size)
    {
        this.size = size;
        data = new char[size];
        top = -1;
    }

    boolean isFull()
    {
        return top == size - 1;
    }

    void push(char dt)
    {
        if (!isFull())
        {
            top++;
            data[top] = dt;
        }
        else System.out.println("Stack is already Full!");
    }

    void print()
    {
        System.out.println("Result: ");
        for (int i = top; i >= 0; i--) System.out.print(data[i]);
    }
}
```

```
package Asg;

import java.util.Scanner;
import java.util.Stack;

public class Asg1Main
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        System.out.print("Insert Sentence: ");
        String sent = sc.nextLine();

        Asg1 stacks = new Asg1(sent.length());
```

```
        for (int i = 0; i < sent.length(); i++) stacks.push(sent.charAt(i));
        stacks.print();
    }
}
```

```
/home/elmira/.jdks/openjdk-20/bin/java -java
Insert Sentence: Politeknik Negeri Malang
Result:
gnalaM iregeN kinketiloP
Process finished with exit code 0
```

2. Code

```
package Asg;

public class Asg2
{
    int ID, quantity;
    String date;
    double price;

    Asg2 (int ID, int quantity, String date, double price)
    {
        this.ID = ID;
        this.quantity = quantity;
        this.date = date;
        this.price = price;
    }
}
```

```
package Asg;

public class Asg2System
{
    int size, top;
    Asg2[] data;

    Asg2System(int size)
    {
        this.size = size;
        data = new Asg2[size];
        top = -1;
    }

    boolean isFull()
    {
        return top == size - 1;
    }

    void push(Asg2 dt)
    {
        if (!isFull())
        {
            top++;
            data[top] = dt;
        }
        else System.out.println("Stack is already Full!");
    }

    void print(int limit)
    {
        System.out.printf("last %d data: \n", limit);
        for (int i = top; i >= (size - limit); i--)
        {
            System.out.println(data[i].ID + " " + data[i].date + " " + data[i].quantity + " " + data[i].price);
        }
    }
}
```

```
package Asg;

public class Asg2Main
{
    public static void main(String[] args)
    {
        Asg2System system = new Asg2System(8);

        int[] ID = {1, 2, 3, 4, 5, 6, 7, 8};
        String[] date = {"1 January 2069", "10 January 2069", "27 January 2069", "2 February 2069", "7 February 2069", "10 February 2069",
        int[] quantity = {5, 8, 2, 1, 7, 2, 3, 4};
        double[] price = {100_000, 150_000, 87_000, 120_000, 56_000, 45_000, 120_000, 69_000};

        for (int i = 0; i < system.size; i++)
            System.out.println(ID[i] + " " + date[i] + " " + quantity[i] + " " + price[i]);

        System.out.println();

        for (int i = 0; i < system.size; i++)
        {
            Asg2 receipts = new Asg2(ID[i], quantity[i], date[i], price[i]);
            system.push(receipts);
        }

        int voucherReceipts = 5;
        system.print(voucherReceipts);
    }
}
```