LAPORAN PRAKTIKUM
SESI 5
PRAKTIKUM COMP6362 – DATA STRUCTURES
KELAS BE20

Oleh :

2440008600 – Andru Baskara Putra

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BINA NUSANTARA UNIVERSITY

MALANG

A. Kode Program

Source Code

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <malloc.h>



struct queue{
    char customer[200];
    struct queue *portal;
}*front,*rear,*scan,*fronted;

struct data{
    char nama[200];
    int no;
}datas[200];

int i,dpn=0, bkg=0, a=0, queue=0;




void baru(){
    front=rear=NULL;
}

void tambah(char nama[]){
    if (rear==NULL)
    {
        rear=(struct queue *)malloc(1*sizeof(struct queue));
        rear->portal=NULL;
        strcpy(rear->customer,nama);
        front=rear;
    }else{
        scan=(struct queue *)malloc(1*sizeof(struct queue));
        rear->portal=scan;
        strcpy(scan->customer,nama);
        scan->portal=NULL;
        rear=scan;

    }
```

```
}

void hapus(){
    fronted=front;

    if (fronted==NULL)
    {
        printf("\n--------------------tidak ada !!!--------------------------
\n");
        return;
    }else{
        if (fronted->portal != NULL)
        {
            fronted=fronted->portal;
            printf("\n%s telah dilayani\n", front->customer);
            free(front);
            front=fronted;
        }else{
            printf("\n%s telah dilayani\n",front->customer);
            free(front);
            front=NULL;
            rear=NULL;
        }


    }

}

void tunjukdata(){
    if ((front != NULL) && (rear != NULL))
    {
        printf("----------------------depan : %s--------------------------
\n",front->customer);
        printf("----------------------belakang : %s-----------------------
\n",rear->customer);
    }else
    {
        printf("\n--------------tidak ada !!------------------- \n");
    }


}

void showlist(){
    int a=1;
    fronted=front;
```

```
    if ((fronted == NULL) && (rear == NULL))
    {
        printf("\nMasih Kosong \n");
        printf("+-----+------------------+\n");
        printf("| No. |  Customer Name   |\n");
        printf("+-----+------------------+\n" );
        printf("|                        |\n");
        printf("|                        |\n");
        printf("|                        |\n");

        return;
    }
    printf("+-----+------------------+\n" );
    printf("| No. |  Customer Name   |\n");
    printf("+-----+------------------+\n");
    while (fronted != rear)
    {
        if (fronted==front && fronted!=rear)
        {
            //printf("%d. %s\n",i++,fronted->customer);
            printf("| %d   |   %-12s   |<---depan\n",a++,fronted->customer);
        }else{
            printf("| %d   |   %-12s   |\n",a++,fronted->customer);
        }

        fronted=fronted->portal;
    }

    if (fronted == rear && fronted!=front)
    {

        //printf("%d. %s\n",i++,fronted->customer);
        printf("| %d   |   %-12s   |<---blkg\n",a++,fronted->customer);
    }

    if (fronted==rear && fronted==front)
    {
        printf("| %d   |   %-12s   |<---sama\n",a++,fronted->customer);
    }




}

void tambahArray(int opsi){
    queue++;
    printf("\n---%d---\n",queue);
```

```
    datas[bkg].no=queue;
    printf("Masukan nama pelanggan : ");
    scanf("%s",datas[bkg].nama);
    bkg++;

}

void tunjukDataArray(int opsi){
    printf("\nfront : %s\n",datas[dpn].nama);
    printf("rear : %s",datas[bkg-1].nama);
}

void hapusArray(){
    printf("\n%s telah dilayani\n",datas[dpn].nama);
    dpn++;
}

void displayArray(){
    if (dpn==bkg)
    {
        printf("\nMasih Kosong \n");
        printf("+-----+------------------+\n");
        printf("| No. |  Customer Name   |\n");
        printf("+-----+------------------+\n" );
        printf("|                        |\n");
        printf("|                        |\n");
        printf("|                        |\n");
        return;
    }else{
        printf("+-----+------------------+\n" );
        printf("| No. |  Customer Name   |\n");
        printf("+-----+------------------+\n");
        for (i=dpn; i<bkg; i++)
        {
            if (i==dpn&&i==bkg-1)
            {
                //printf("%d. %s <--
front & rear\n",datas[i].no,datas[i].nama);
                printf("| %d   |   %-12s   |<--
front & rear\n",datas[i].no,datas[i].nama);


            }else if(i==dpn){
                printf("| %d   |   %-12s   |<--
front\n",datas[i].no,datas[i].nama);

            }else if (i==bkg-1){
```

```
                printf("| %d    |   %-12s    |<--
rear\n",datas[i].no, datas[i].nama);

            }else{
                printf("| %d    |   %-12s    |\n",datas[i].no,datas[i].nama);

            }


        }

    }


}


void linkedlistIm(){
    int opsi;
    char name[200];

    baru();

    while (1)
    {
        showlist();
        printf("\n1. tambah antrian");
        printf("\n2. tunjukan antrian terdepan/belakang");
        printf("\n3. layani");
        printf("\n4. kill program");
        printf("\nEnter your choice ");
        printf("\n>>>");
        scanf("%d",&opsi);
        switch (opsi)
        {
        case 1:
            printf("Masukan nama pelanggan : ");
            scanf("%s",name);
            tambah(name);
            break;

        case 2:
            tunjukdata();
            break;

        case 3:
            hapus();
            break;
```

```
        case 4:
            exit(0);
        default:
            printf("\nopsi tidak valid !!!!!\n");
            break;
        }
    }
}


void arrayimp(){
    int opsi,max;
    a:
    printf("\nKapasitas maksimal [max=100]: ");
    scanf("%d",&max);
    if (max>100||max<1)
    {
        printf("\n Njir jgn besar2 atau kekecilan juga \n");
        goto a;

    }else{
        b:
        displayArray();
        printf("\n1. tambah antrian");
        printf("\n2. tunjukan antrian terdepan/belakang");
        printf("\n3. layani");
        printf("\n4. kill program");
        printf("\nEnter your choice ");
        printf("\n>>>");
        scanf("%d",&opsi);

        if (opsi<1||opsi>4)
        {
            printf("\n\n opsi tidak valid!!!\n");
            goto b;
        }else if (opsi==4)
        {
            exit(0);
        }else if (opsi==1&& a!=max)
        {
            tambahArray(opsi);
            a++;
            goto b;

        }else if (opsi==1 && a==max)
        {
            printf("\nMELEBIHI KAPASITAS MAKSIMAL!!!\n");
            goto b;
        }else if (opsi==2 && a!=0)
```

```
        {
            tunjukDataArray(opsi);
            goto b;
        }else if (opsi==2 && a==0)
        {
            printf("\nTIDAK ADA YANG BISA DITAMPILKAN\n");
            goto b;
        }else if (opsi==3 && a!=0)
        {
            hapusArray(opsi);
            a--;
            goto b;
        }else if (opsi==3 && a==0)
        {
            printf("\nTIDAK ADA YANG BISA DIHAPUS\n");
            goto b;
        }









    }
}

void installcustom(){
    printf("downloading package.....\n");
    printf("downloading package.....\n");
    printf("downloading package.....\n");
    printf("downloading package.....\n");
    printf("downloading package.....\n");
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g package.....\n");printf("installing package.....\n");printf(
"installing package.....\n");printf("installing package.....\n
");
    printf("package installed!\n");



}

int main(){
    int cho;
    printf("--Pilih aplikasi untuk diinstall--\n");
    printf("1. DevilQueue lister (berbasis linkedlist)\n");
    printf("2. Queue Master (berbasis array)\n");
    printf("install >> "); scanf("%d",&cho);
    if (cho==1)
    {
        installcustom();
        linkedlistIm();
    }else if (cho==2)
    {
        installcustom();
        arrayimp();
    }




}
```

B. Deskripsi Program

struct queue :
Berisikan data-data program dari queue implementasi linkedlist
struct data :
Berisikan data-data program dari queue implementasi array

void baru ;
Untuk memulai node secara linkedlist

void tambah :
Untuk menambah node secara linkedlist

void hapus :
Menghapus node secara linkedlist

void tunjukdata :
Menunjuk data front dan rear

void showlist :
Menampilkan data dari queue linkedlist

void tambahArray :
Menambah data secara array

void tunjukDataArray ;
menunjuk data front dan rear

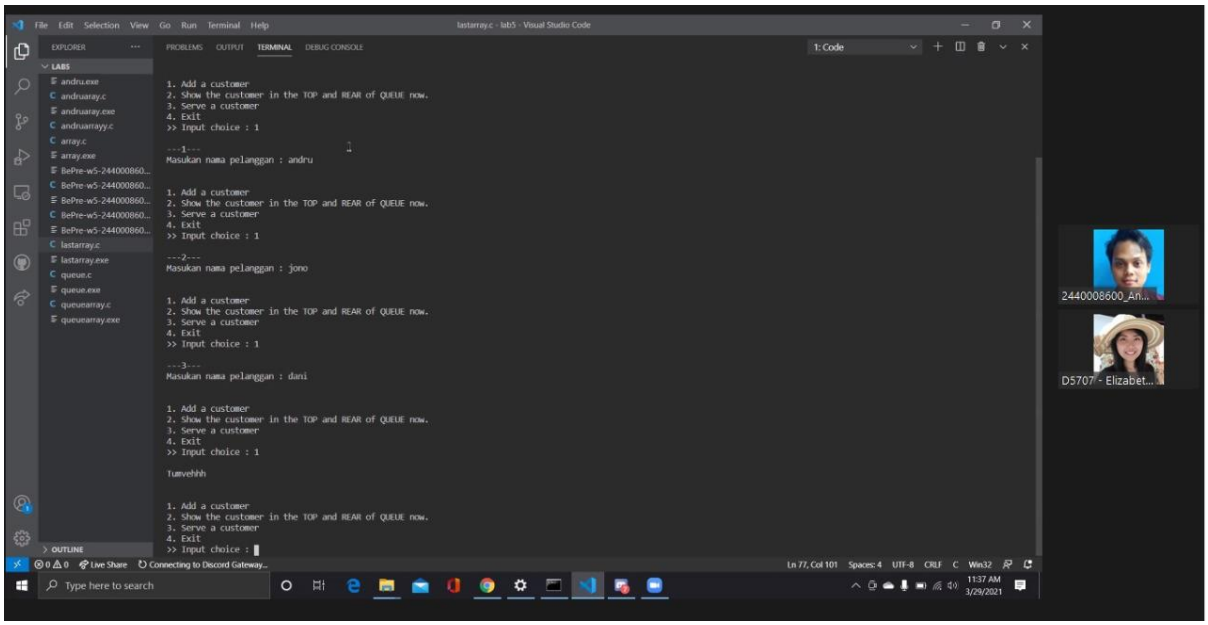
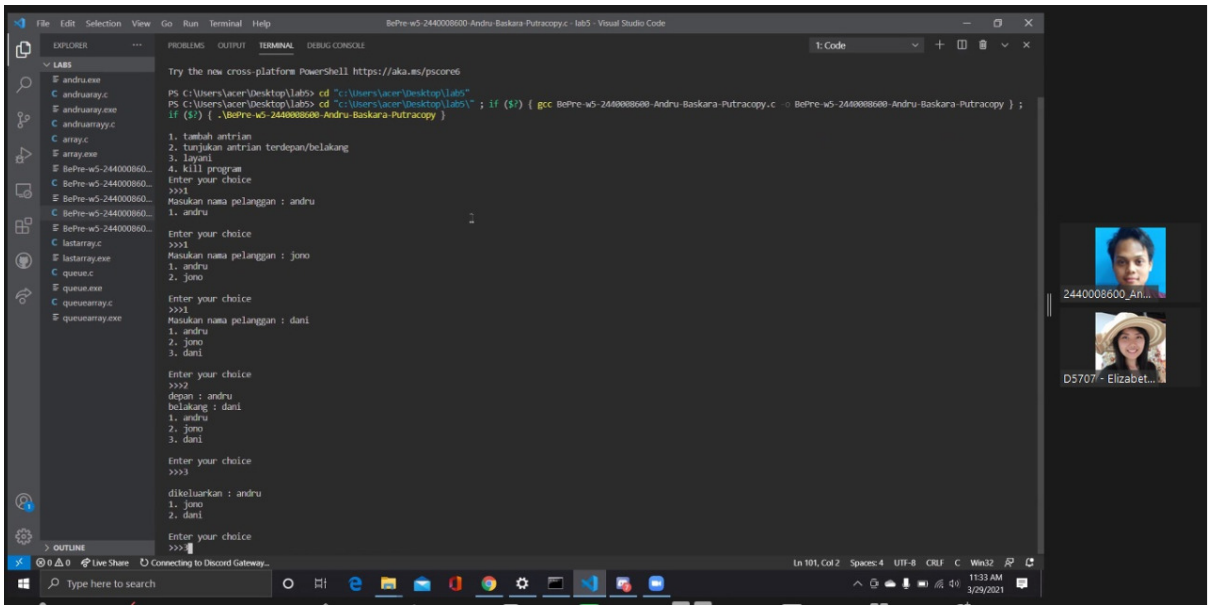
void hapusArray :
menghapus data secara array

void displayArray :
Menampilkan data queue array

void linkedlistIm ;
proses queue implementasi linkedlist

void arrayimp :
proses queue implementasi array

void installcustom :
hanya sebagai hiasan agar terkesan sedang mendownload aplikasi melalui terminal

main program :
User akan diberi 2 pilihan, yakni mendownload aplikasi queue berbasis linkedlist Ataupun array. Jika user memilih aplikasi berbasis linkedlist, maka program akan Menjalankan proses dengan memanggil fungsi linkedlistimp(). Jika user memilih array, Maka program akan menjalankan proses dengan memanggil fungsi arrayimp();

C. Bukti Presentasi