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SOURCE CODE

```
#include<iostream>
#include<conio.h>
#include<stdlib.h>
#include<fstream>
#include<sstream>
#include<string>
using namespace std;

struct pahala{
       int nomor;
       string nama;
       int sedekah;
};

int sizee;
pahala phl[100];

fstream file_phl;

//FUNGSI IMPORT DATA DARI FILE KE PROGRAM
void import(){
    file_phl.open("posttest7_saban.txt", ios::in);
    string nomor, sedekah;

    while(!file_phl.eof()){
       getline(file_phl, nomor, ',');
         getline(file_phl, phl[sizee].nama, ',');
         getline(file_phl, sedekah, '\n');
```

```
        stringstream strnomor(nomor);
        stringstream strsedekah(sedekah);

        strnomor>>phl[sizee].nomor;
        strsedekah>>phl[sizee].sedekah;

        if(file_phl.eof()){
            break;
        }
        sizee++;
    }
    file_phl.close();
}

//FUNGSI UNTUK MENGECEK FILE EKSTERNAL
void file_check(){
       file_phl.open("posttest7_saban.txt", ios::in);

    if (!file_phl.is_open()){
        file_phl.open("posttest7_saban.txt", ios::out | ios::trunc);
        file_phl.close();
    }
    file_phl.close();
}

//FUNGSI MENGUPDATE ISI FILE SETELAH DIUBAH
void update_file(){
    file_phl.open("posttest7_saban.txt", ios::out);

    for (int x=0; x<sizee; x++){
```

```
        file_phl<<phl[x].nomor<<',';
        file_phl<<phl[x].nama<<',';
        file_phl<<phl[x].sedekah<<'\n';
    }
    file_phl.close();
}

//BUBBLE SORT
void bubble(pahala phl[], int size){
      int tipe;
      pahala swap;
      cout<<"================== MENU SORT ==================\n"
            <<"=============== TIPE PENGURUTAN ===============\n"
            <<"\n"
            <<"1. Ascending\n"
            <<"2. Descending"
            <<"\n"
            <<"Pilih : ";
      cin>>tipe;
      system("cls");
      switch(tipe){
            case 1:
                  for (int x=0; x<size-1; x++){
                        for(int y=0; y<size-1; y++){
                              if(phl[y].nama > phl[y+1].nama){
                                    swap = phl[y];
                                    phl[y] = phl[y+1];
                                    phl[y+1] = swap;
                              }
                        }
                  }
```

```
                        break;
                case 2:
                        for(int x=0; x<size-1; x++){
                                for(int y=0; y<size-1; y++){
                                        if(phl[y].nama < phl[y+1].nama){
                                                swap = phl[y];
                                                phl[y] = phl[y+1];
                                                phl[y+1] = swap;
                                        }
                                }
                        }
                        break;
                break;
        }
}
void swap(pahala *xp, pahala *yp){
        pahala temp = *xp;
        *xp = *yp;
        *yp = temp;
}

//SELECTION SORT
void selection(pahala phl[], int size){
        int min;
        int tipe;
        cout<<"================== MENU SORT ==================\n"
                <<"=============== TIPE PENGURUTAN ===============\n"
                <<"\n"
                <<"1. Ascending\n"
                <<"2. Descending"
                <<"\n"
```

```
		<<"Pilih : ";
	cin>>tipe;
	system("cls");
	for (int x=0; x<size-1; x++){
		min = x;
		for (int y=x+1; y<size; y++){
			switch (tipe){
				case 1:
					if (phl[y].sedekah < phl[min].sedekah){
						min = y;
					}
					break;
				case 2:
					if (phl[y].sedekah > phl[min].sedekah){
						min = y;
					}
					break;
			}
		}
		swap(&phl[x], &phl[min]);
	}
}

//QUICK SORT
int partition_ascen(pahala phl[], int low, int high){
	int pivot = phl[high].nomor;
	int x=(low - 1);
	for (int y=low; y<=high- 1; y++){
		if (phl[y].nomor <= pivot){
			x++;
			swap(&phl[x], &phl[y]);
```

```
            }
        }
        swap(&phl[x + 1], &phl[high]);
        return (x + 1);
}
int partition_descen (pahala phl[], int low, int high){
        int pivot = phl[high].nomor;
        int x=(low - 1);
        for (int y=low; y<=high- 1; y++){
            if (phl[y].nomor >= pivot){
                x++;
                swap(&phl[x], &phl[y]);
            }
        }
        swap(&phl[x + 1], &phl[high]);
        return (x + 1);
}
void quick_ascen(pahala phl[], int low, int high){
        if (low < high){
            int pi = partition_ascen(phl, low, high);
            quick_ascen(phl, low, pi-1);
            quick_ascen(phl, pi+1, high);
        }
}
void quick_descen(pahala phl[], int low, int high){
        if (low < high){
            int pi = partition_descen(phl, low, high);
            quick_descen(phl, low, pi-1);
            quick_descen(phl, pi+1, high);
        }
}
```

```
//FUNGSI MENAMBAHKAN DATA INPUTAN USER KE DALAM FILE
void create(){
	file_phl.open("posttest7_saban.txt", ios::app);

	int banyakdonate, banyakdata;
	cout<<"Masukkan berapa banyak jumlah donatur : ";
	cin>>banyakdonate;
	cout<<"\n";
	banyakdata = 0;
	for(int x=0; x<banyakdonate; x++){
		banyakdata = sizee + 1;
		cout<<"Nomor Donatur : "<<banyakdata<<endl;
		phl[sizee].nomor = banyakdata;
		cout<<"Nama : ";
		cin>>phl[sizee].nama;
		cout<<"Jumlah Sedekah : Rp.";
		cin>>phl[sizee].sedekah;
		cout<<"\n";
		file_phl<<phl[sizee].nomor<< ',';
	file_phl<<phl[sizee].nama<< ',';
	file_phl<<phl[sizee].sedekah<< '\n';
		sizee++;
	}
	cout<<"DATA BERHASIL DITAMBAHKAN\n";
	cout<<"\n";
	cout<<"TEKAN ENTER UNTUK KEMBALI KE MENU AWAL";
	getch();
	system("cls");
	file_phl.close();
}
```

```
//FUNGSI MELIHAT DATA
void read(){
	cout<<"\n";
	cout<<"DATA DONATUR\n";
	cout<<"\n";
	for(int indeks=0; indeks<sizee ; indeks++){
		cout<<"Nomor Donatur : "<<phl[indeks].nomor<<endl;
		cout<<"Nama : "<<phl[indeks].nama<<endl;
		cout<<"Jumlah Sedekah : Rp. "<<phl[indeks].sedekah<<endl;
		cout<<"\n";
	}
	cout<<"TEKAN ENTER UNTUK KEMBALI KE MENU AWAL";
	cout<<"\n";
	getch();
	system("cls");
}

//DRIVER SORTING
void sort_menu(){
	system("cls");
	int pilih, tipe;
	if (sizee==0){
		cout << "DATA KOSONG !!! ";
		getch();
		system("cls");
	}
	else if (sizee>0){
		cout<<"================== MENU SORT ==================\n"
			<<"==============  URUTKAN BERDASAR ==============\n"
			<<"\n"
```

```
        <<"1. Nomor Donatur\n"
        <<"2. Nama Donatur\n"
        <<"3. Jumlah Sedekah\n"
        <<"\n"
        <<"Masukkan pilihan: ";
cin>>pilih;
if (pilih==1){
        cout<<"================== MENU SORT ==================\n"
              <<"=============== TIPE PENGURUTAN ===============\n"
              <<"\n"
              <<"1. Ascending\n"
              <<"2. Descending"
              <<"\n"
              <<"Pilih : ";
        cin>>tipe;
        system("cls");
              switch (tipe){
                    case 1:
                          quick_ascen(phl, 0, sizee-1 );
                          read();
                          break;
                    case 2:
                          quick_descen(phl, 0, sizee-1 );
                          read();
                          break;
              }
}
else if (pilih==2){
        bubble(phl, sizee);
        read();
}
```

```
            else if (pilih==3){
                  selection(phl, sizee);
                  read();
            }
            else{
                  cout << "Pilihan tidak ada\n";
                  getch();
                  system("cls");
            }
      }
}

//FUNGSI SEARCH NAMA (BINARY SEARCH)
int binary_search(int pilih){
      cout<<endl;
    string num;
      int beg = 0;
      int end=sizee-1;
      int index= -1;
      cout<<"Nama yang dicari : ";
      cin>>num;
      switch (pilih){
            case 1:
                  for (int x=0; x<sizee-1; x++){
                        for(int y=0; y<sizee-1; y++){
                              if(phl[y].nama>phl[y+1].nama){
                                    pahala swap = phl[y];
                                    phl[y] = phl[y+1];
                                    phl[y+1] = swap;
                              }
                        }
```

```
                    }
                    while(beg<=end){
                           int mid=(end+beg)/2;
                           if(phl[mid].nama==num){
                                  index = mid +1;
                                  for (int x=0; x<sizee; x++){
                                         if(phl[mid].nama==phl[x].nama){
                                                cout<<"Nomor Donatur :
"<<phl[x].nomor<<endl;
                                                cout<<"Nama : "<<phl[x].nama<<endl;
                                                cout<<"Jumlah Sedekah : Rp.
"<<phl[x].sedekah<<endl;
                                                cout<<"\n";
                                         }
                                         getch();
                                  }
                                  break;
                           }
                           else{
                                  if(num>phl[mid].nama){
                                         beg= mid+1;
                                  }
                                  else{
                                         end=mid-1;
                                  }
                           }
                    }
                    break;
      }

      if(index==-1){
            cout << "\nData tidak ditemukan"; getch();
```

```
	}
	system("cls");
	return 0;
}

//FUNGSI SEARCH JUMLAH SEDEKAH (INTERPOLATION SEARCH)
int inter_search(int pilih){
	quick_ascen(phl,0,sizee-1);
    int awal = 0, posisi;
    int proses = 0;
    int akhir = sizee - 1;
    int key;
    cout<<"Masukkan Jumlah sedekah yang ingin dicari : ";
    cin>>key;
	switch (pilih){
		case 2:
			while (true){
				proses++;
				posisi = (awal + ((key - phl[awal].sedekah) * (akhir - 
awal)) / (phl[akhir].sedekah + phl[awal].sedekah));
				if(phl[posisi].sedekah == key){
					for (int x=0; x<sizee; x++){
						if (phl[posisi].sedekah==phl[x].sedekah){
							cout<<"Nomor Donatur : 
"<<phl[x].nomor<<endl;
							cout<<"Nama : "<<phl[x].nama<<endl;
							cout<<"Jumlah Sedekah : Rp. 
"<<phl[x].sedekah<<endl;
							cout<<"\n";
						}
						getch();
					}
```

```
                                    break;
                                }
                                if((phl[posisi].sedekah < key) && (phl[posisi].sedekah >=
phl[posisi].sedekah)){
                                    awal = posisi + 1;
                                    continue;
                                }
                                if((phl[posisi].sedekah > key) && (phl[posisi].sedekah <=
phl[posisi].sedekah)){
                                    akhir = posisi - 1;
                                    continue;
                                }
                                else{
                                    cout<<"Nilai yang anda cari tidak ada"<<endl;
                                    break;
                                }
                        }
                        break;
        }
        system("cls");
        return 0;
}

//FUNGSI DRIVER SEARCH
void search(){
        system("cls");
        int pilih;
                cout<<"================= MENU SEARCH =================\n"
                        <<"================ CARI BERDASAR ================\n"
                        <<"\n"
                        <<"1. Nama Donatur\n"
                        <<"2. Jumlah Sedekah\n"
```

```
                <<"\n"
                <<"Masukkan pilihan: ";
        cin>>pilih;
    switch (pilih)
    {
    case 1:
        binary_search(1);
        break;
    case 2:
        inter_search(2);
        break;
    default:
        cout<<"Inputan salah";
        getch();
        system("cls");
    }
}

//FUNGSI UNTUK MENGUBAH DATA
void update(){
    cout<<"DATA DONATUR\n";
    cout<<"\n";
    int nomor;
    for(int indeks=0; indeks<sizee ; indeks++){
        nomor = indeks + 1;
        cout<<"Nomor Donatur "<<nomor<<endl;
        cout<<"Nama : "<<phl[indeks].nama<<endl;
        cout<<"Jumlah Sedekah : Rp. "<<phl[indeks].sedekah<<endl;
        cout<<"\n";
    }
    int ubah;
```

```
	int indeks;
	cout<<"Masukkan Nomor Donatur yang ingin diubah : ";
	cin>>ubah;
	indeks = ubah - 1;
	cout<<"Nama : ";
	cin>>phl[indeks].nama;
	cout<<"Jumlah Sedekah : Rp. ";
	cin>>phl[indeks].sedekah;
	cout<<"\n";
	cout<<"Data Berhasil Diubah !!!"<<endl;
	cout<<"\n";
	cout<<"TEKAN ENTER UNTUK KEMBALI KE MENU AWAL";
	getch();
	system("cls");
}

//FUNGSI MENGHAPUS DATA
void deletee(){
	cout<<"DATA DONATUR\n";
	cout<<"\n";
	int nomor;
	for(int indeks=0; indeks<sizee ; indeks++){
		nomor = indeks + 1;
		cout<<"Nomor Donatur "<<nomor<<endl;
		cout<<"Nama : "<<phl[indeks].nama<<endl;
		cout<<"Jumlah Sedekah : Rp. "<<phl[indeks].sedekah<<endl;
		cout<<"\n";
	}

	int hapus, indeks;
	cout<<"Nomor Donatur yang ingin dihapus : ";
```

```
	cin>>hapus;
	indeks = hapus - 1;
	sizee--;
	for(int z=indeks; z<sizee; z++){
		phl[z].nama = phl[z+1].nama;
		phl[z].sedekah = phl[z+1].sedekah;
	}
	cout<<"DATA TELAH TERHAPUS\n";
	cout<<"\n";
	cout<<"TEKAN ENTER UNTUK KEMBALI KE MENU AWAL";
	getch();
	system("cls");
}

//FUNGSI MAIN
int main(){
	int pilih;
	start:
	file_check();
	cout<<"\n";
	cout<<"================== MENU UTAMA ==================\n"
		<<"==== PENDATAAN SEDEKAH WILAYAH POCHINKI ULU ====\n"
		<<"\n"
		<<"1. Masukkan Data Donatur\n"
		<<"2. Lihat Data Donatur\n"
		<<"3. Cari Data Donatur\n"
		<<"4. Ubah Data Donatur\n"
		<<"5. Hapus Data Donatur\n"
		<<"6. Hapus File\n"
		<<"7. Keluar\n"
		<<"\n"
```

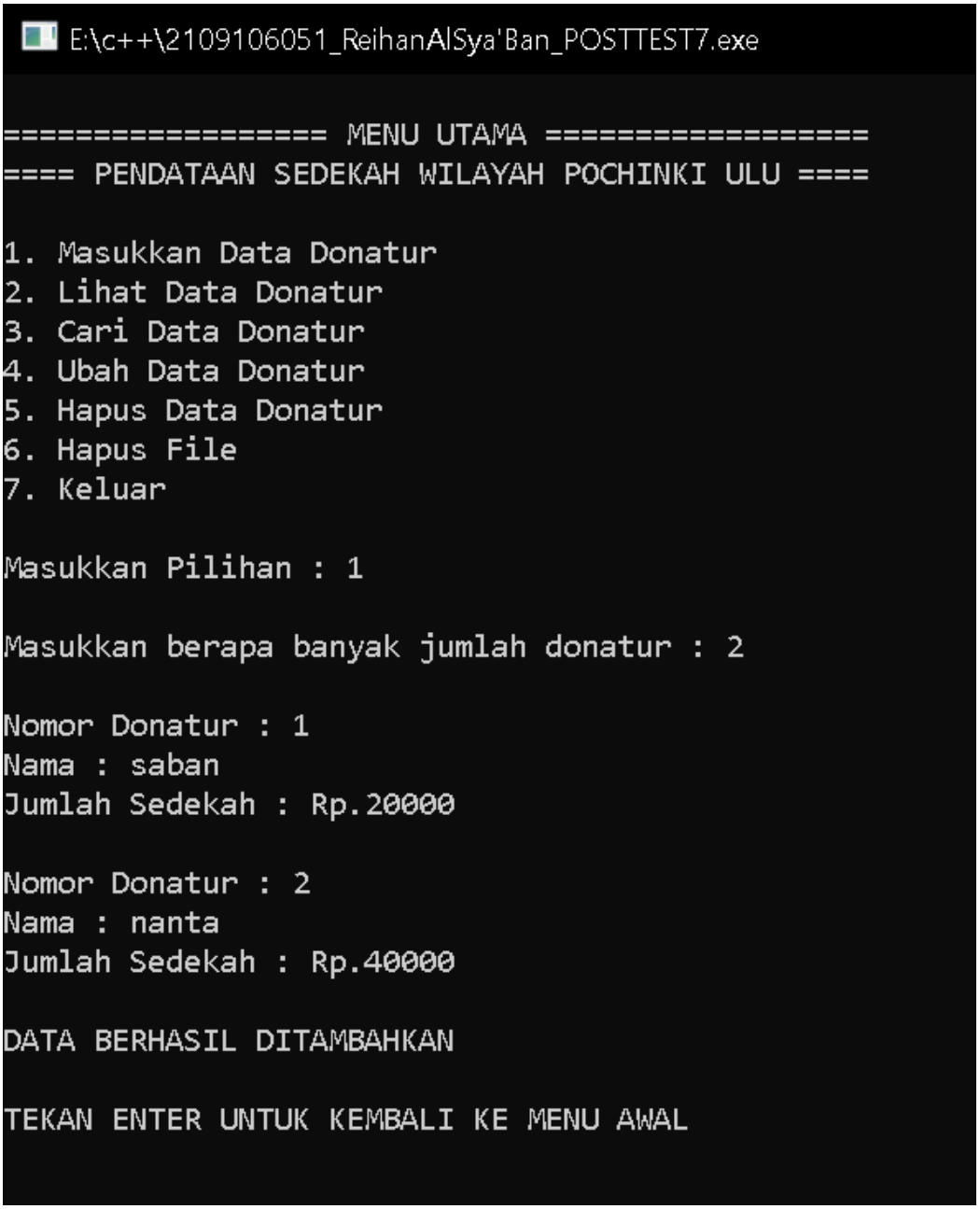
```
	<<"Masukkan Pilihan : ";
cin>>pilih;
cout<<"\n";
if(pilih == 1){
	create();
	goto start;
}
if(pilih == 2){
	if(sizee == 0){
		import();
		cout << "DATA KOSONG !!! ";
		getch();
		system("cls");
	}
	if(sizee > 0){
		sizee = 0;
		import();
		sort_menu();
	}
	goto start;
}
if(pilih == 3){
	search();
	goto start;
}
if(pilih == 4){
	if(sizee == 0){
		import();
	}
	if(sizee > 0){
		sizee = 0;
```

```
            import();
            update();
            update_file();
      }
      goto start;
}
if(pilih == 5){
      if(sizee == 0){
            import();
      }
      if(sizee > 0){
            sizee = 0;
            import();
            deletee();
            update_file();
      }
      goto start;
}
if(pilih == 6){
      remove("posttest7_saban.txt");
      system("cls");
      cout<<"DATA BERHASIL DIHAPUS\n";
      getch();
      system("cls");
      goto start;
}
if(pilih == 7){
      cout<<"TERIMA KASIH";
}
else{
      cout<<"PILIH SESUAI MENU !!!\n";
```

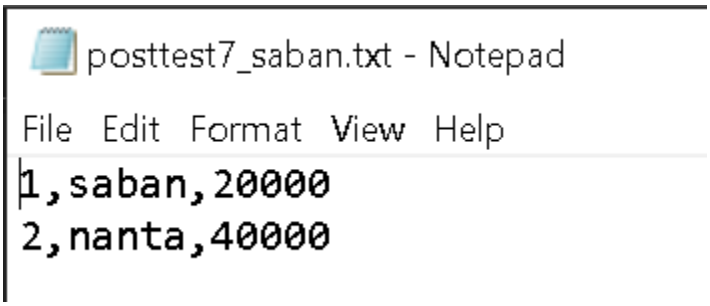
```
            goto start;
        }
    }
```

SCREENSHOOT

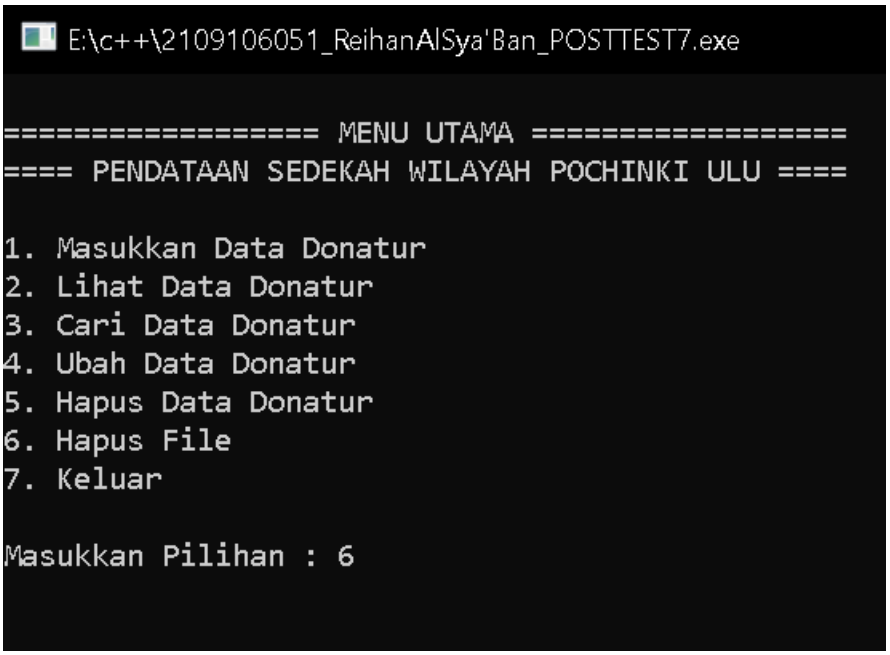
- Data yang ditambahkan

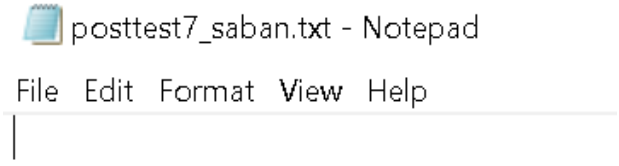


- File eksternal



- Fitur hapus file eksternal





N.B : SS-an fitur lainnya tidak saya masukkan karena sama saja seperti posttest sebelumnya, masih dapat digunakan, yang berbeda kali ini hanya penggunaan file eksternal, Terima kasih.