LAPORAN PRAKTIKUM

POSTTEST 3

ALGORITMA PEMROGRAMAN LANJUT

Disusun oleh:

Nama (2409106XXX)

Kelas (C2 ‘24)

PROGRAM STUDI INFORMATIKA

UNIVERSITAS MULAWARMAN

SAMARINDA

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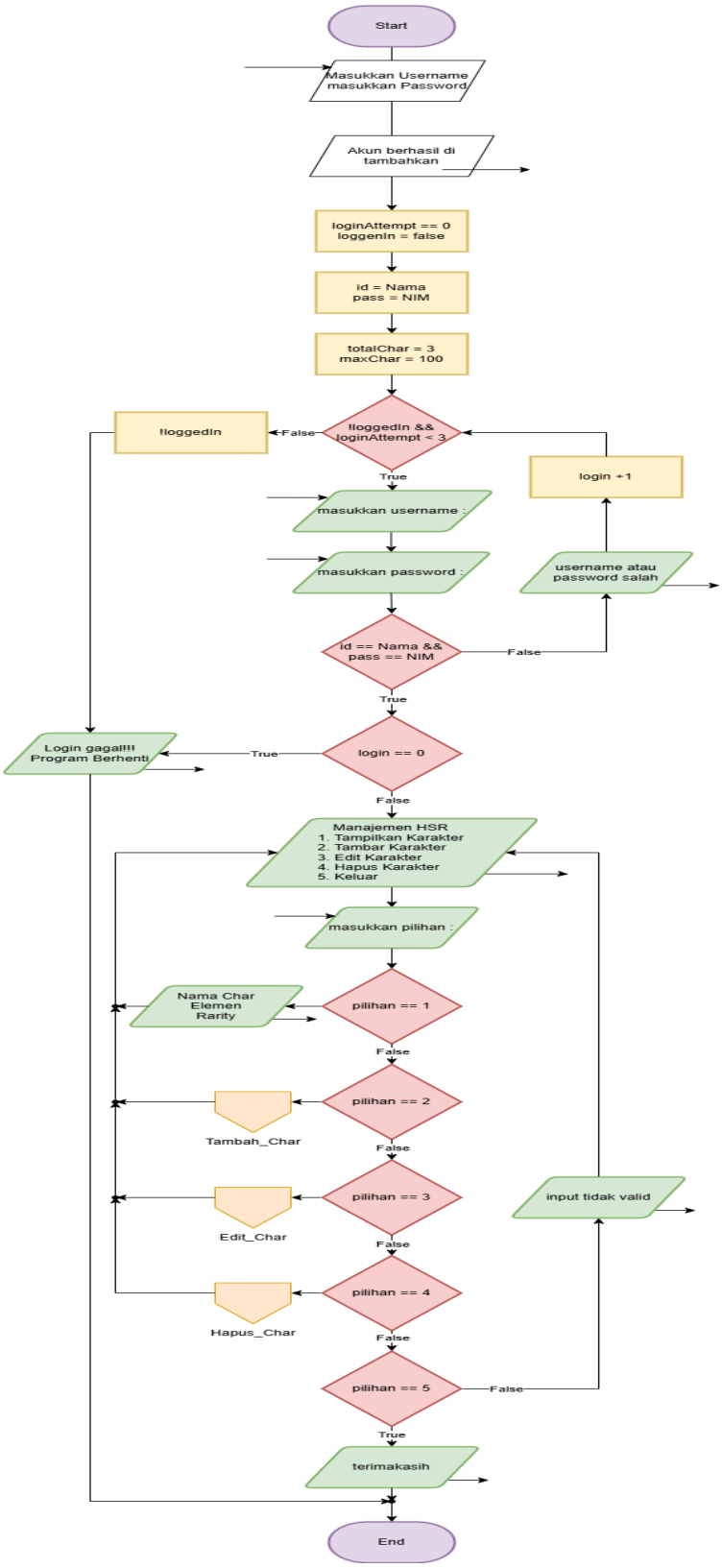
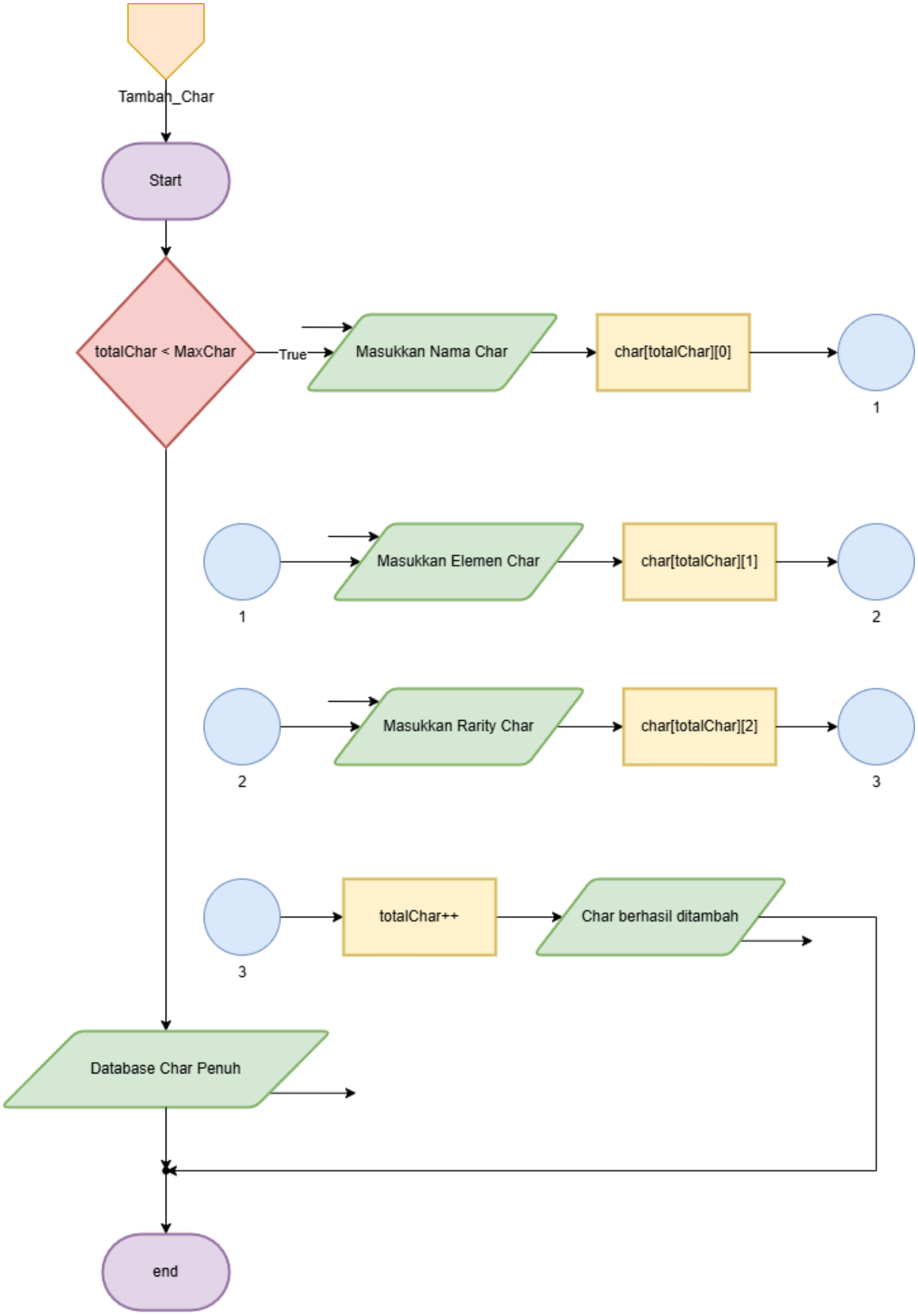
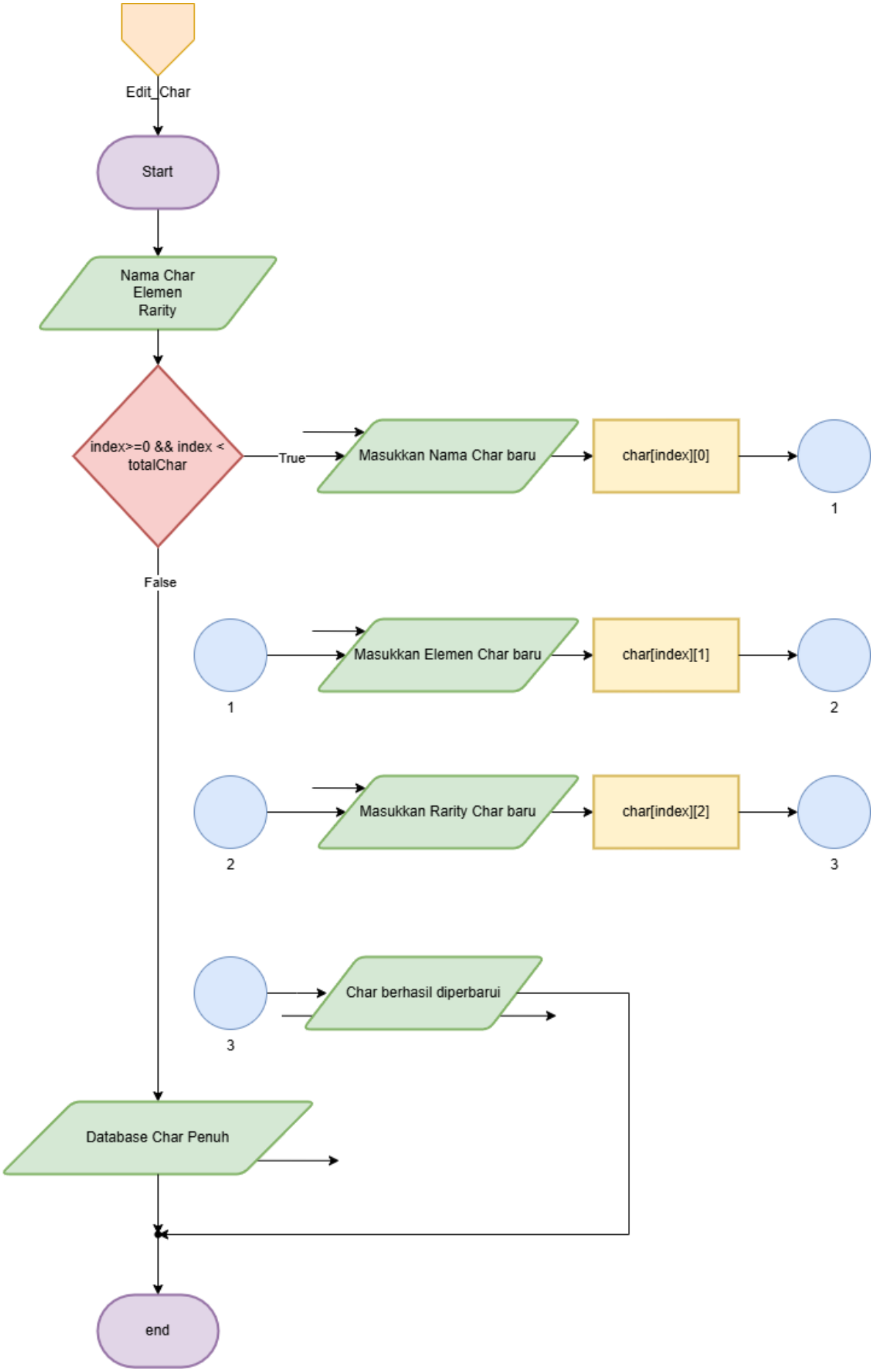
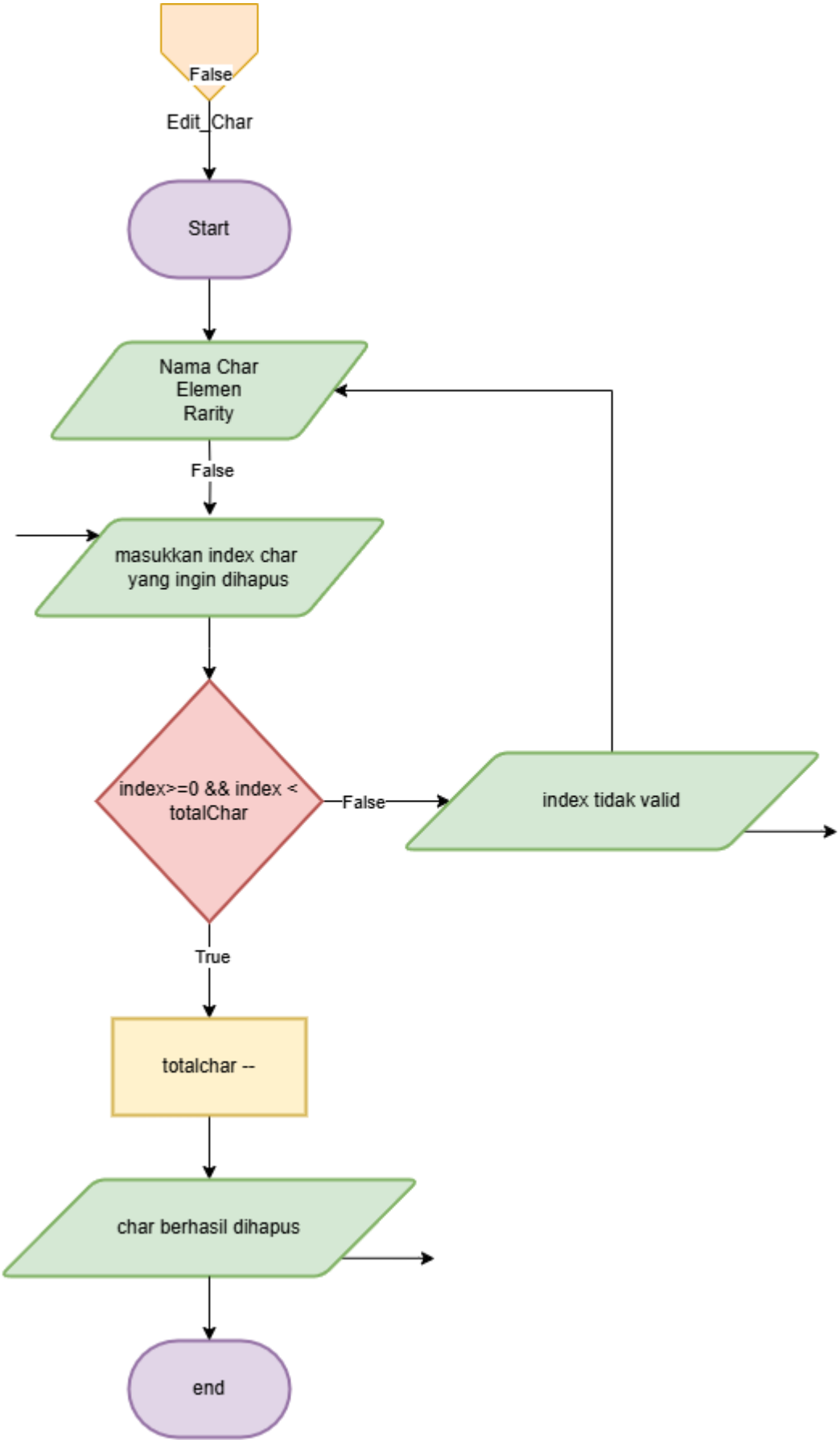
1. Flowchart


Start
Masukkan Username
masukkan Password
Akun berhasil di tambahkan
loginAttempt == 0
loggenIn = false
id = Nama
pass = NIM
totalChar = 3
maxChar = 100
!loggedIn && loginAttempt < 3
False
!loggedIn
True
login +1
masukkan username :
masukkan password :
username atau password salah
id == Nama && pass == NIM
False
True
Login gagal!!!
Program Berhenti
True
login == 0
False
Manajemen HSR
1. Tampilkan Karakter
2. Tambar Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
masukkan pilihan :
Nama Char
Elemen
Rarity
pilihan == 1
False
pilihan == 2
Tambah_Char
False
pilihan == 3
Edit_Char
input tidak valid
False
pilihan == 4
Hapus_Char
False
pilihan == 5
False
True
terimakasih
End


Tambah_Char
Start
totalChar < MaxChar
True
Masukkan Nama Char
char[totalChar][0]
1
1
Masukkan Elemen Char
char[totalChar][1]
2
2
Masukkan Rarity Char
char[totalChar][2]
3
3
totalChar++
Char berhasil ditambah
Database Char Penuh
end


Edit_Char
Start
Nama Char
Elemen
Rarity
index>=0 && index < totalChar
True
Masukkan Nama Char baru
char[index][0]
1
False
1
Masukkan Elemen Char baru
char[index][1]
2
2
Masukkan Rarity Char baru
char[index][2]
3
3
Char berhasil diperbarui
Database Char Penuh
end


False
Edit_Char
Start
Nama Char
Elemen
Rarity
False
masukkan index char
yang ingin dihapus
index>=0 && index <
totalChar
False
index tidak valid
True
totalchar --
char berhasil dihapus
end

2. Analisis Program

2.1 Deskripsi Singkat Program

- **Multiuser (Register & Login):**
  - Pengguna dapat membuat akun dengan nama dan NIM.
  - Login memiliki batas 3 kali percobaan, jika gagal, program berhenti.
- **CRUD (Create, Read, Update, Delete) Karakter:**
  - Tambah karakter dengan nama, elemen, dan path.
  - Tampilkan daftar karakter dalam format tabel rapi.
  - Edit karakter berdasarkan nama.
  - Hapus karakter berdasarkan nama.
- **Program berulang hingga user memilih keluar.**
- **Menggunakan nested struct:**
  - Struct Pengguna menyimpan data user (nama & NIM).
  - Struct Karakter menyimpan data karakter (nama, elemen, path).

3. Source Code

A. Program Register Dan Login

```
int main() {
    // Data awal karakter
    characters[0] = {"Silver Wolf", "Quantum", 5};
    characters[1] = {"Kafka", "Lightning", 5};
    characters[2] = {"Dan Heng", "Wind", 4};

    // Registrasi Akun
    cout << "===== Registrasi Akun =====\n";
    if (totalUsers < MAX_USERS) {
        cout << "Masukkan Username: ";
        getline(cin, users[totalUsers].username);
        cout << "Masukkan Password: ";
        getline(cin, users[totalUsers].password);
        totalUsers++;
        cout << "Akun berhasil didaftarkan!\n";
    }

    int loginAttempts;
    bool loggedIn;
    User currentUser;

    while (true) {
        loginAttempts = 0;
        loggedIn = false;

        while (!loggedIn && loginAttempts < 3) {
            cout << "\n===== Login =====\n";
            cout << "Masukkan Username: ";
            getline(cin, currentUser.username);
            cout << "Masukkan Password: ";
            getline(cin, currentUser.password);

            bool validUser = false;
            for (int i = 0; i < totalUsers; i++) {
                if (users[i].username == currentUser.username &&
users[i].password == currentUser.password) {
                    validUser = true;
                    break;
                }
            }

            if (validUser) {
                loggedIn = true;
                cout << "Berhasil login!\n";
```

```
            } else {
                cout << "Login gagal le coba lagi.\n";
                loginAttempts++;
            }
        }

        if (!loggedIn) {
            cout << "Anda telah gagal login 3 kali, makanya masukin yang
bener!.\n";
            return 0;
        }
```

B. Program Menu

```
int pilihan;
        do {
            cout << "\n===== Sistem Manajemen Karakter Honkai: Star Rail
=====\n";
            cout << "1. Tampilkan Karakter\n";
            cout << "2. Tambah Karakter\n";
            cout << "3. Edit Karakter\n";
            cout << "4. Hapus Karakter\n";
            cout << "5. Keluar\n";
            cout << "Pilihan: ";
            cin >> pilihan;
            cin.ignore();
```

C. Program Tampilkan Karakter

```
if (pilihan == 1) {
                cout << "\nDaftar Karakter:\n";
                cout << left << setw(8) << "Indeks" << setw(20) << "Nama" <<
setw(15) << "Elemen" << setw(10) << "Rarity" << endl;
                cout << "-------------------------------------------------
-----\n";
                for (int i = 0; i < totalCharacters; i++) {
                    cout << left << setw(8) << (i + 1) << setw(20) <<
characters[i].name << setw(15) << characters[i].element << setw(10) <<
characters[i].rarity << endl;
```

D. Program Taambah Karakter

```
else if (pilihan == 2) {
                if (totalCharacters < MAX_CHARACTERS) {
                    cout << "Masukkan Nama Karakter: ";
                    getline(cin, characters[totalCharacters].name);
                    cout << "Masukkan Elemen Karakter: ";
                    getline(cin, characters[totalCharacters].element);
                    cout << "Masukkan Rarity Karakter: ";
                    cin >> characters[totalCharacters].rarity;
                    cin.ignore();
                    totalCharacters++;
                    cout << "Karakter berhasil ditambahkan!\n";
                } else {
                    cout << "Database sudah penuh le kebanyakan karakter
kering juga material kalian nanti.\n";
                }
            }
```

E. Program Edit Karakter

```
else if (pilihan == 3) {
                cout << "\nDaftar Karakter:\n";
                cout << left << setw(8) << "Indeks" << setw(20) << "Nama" <<
setw(15) << "Elemen" << setw(10) << "Rarity" << endl;
                cout << "----------------------------------------------------
-----\n";
                for (int i = 0; i < totalCharacters; i++) {
                    cout << left << setw(8) << (i + 1) << setw(20) <<
characters[i].name << setw(15) << characters[i].element << setw(10) <<
characters[i].rarity << endl;
                }
                int index;
                cout << "Masukkan indeks karakter yang ingin diedit (1 - "
<< totalCharacters << "): ";
                cin >> index;
                cin.ignore();
                index--;
                if (index >= 0 && index < totalCharacters) {
                    cout << "Masukkan Nama Baru: ";
                    getline(cin, characters[index].name);
                    cout << "Masukkan Elemen Baru: ";
                    getline(cin, characters[index].element);
                    cout << "Masukkan Rarity Baru: ";
                    cin >> characters[index].rarity;
                    cin.ignore();
                    cout << "Karakter berhasil diperbarui!\n";
                } else {
```

```
                    cout << "pilih yang bener ya sayang!\n";
                }
            }
```

F. Program Hapus Karakter

```
else if (pilihan == 4) {
                cout << "\nDaftar Karakter:\n";
                cout << left << setw(8) << "Indeks" << setw(20) << "Nama" <<
setw(15) << "Elemen" << setw(10) << "Rarity" << endl;
                cout << "----------------------------------------------------
-----\n";
                for (int i = 0; i < totalCharacters; i++) {
                    cout << left << setw(8) << (i + 1) << setw(20) <<
characters[i].name << setw(15) << characters[i].element << setw(10) <<
characters[i].rarity << endl;
                }
                int index;
                cout << "Masukkan indeks karakter yang ingin dihapus (1 - "
<< totalCharacters << "): ";
                cin >> index;
                index--;
                if (index >= 0 && index < totalCharacters) {
                    for (int i = index; i < totalCharacters - 1; i++) {
                        characters[i] = characters[i + 1];
                    }
                    totalCharacters--;
                    cout << "Karakter berhasil dihapus!\n";
                } else {
                    cout << "pilih yang bener!\n";
                }
            }
```

G. Program Keluar

```
else if (pilihan == 5) {
                cout << "Terima kasih sudah mau melihat program ini, nextim
kita buat program Wuthering Waves kalo di bolehkan Bang Ade!\n";
                return 0;
            }
```

4. Uji coba dan Hasil Output

4.2 Hasil Output

```
PS C:\Users\melch\OneDrive\Documents\APL> cd "c:\Users\melch\OneDrive\Documents\APL\" ; if ($?) { g++ 2409106117
-MelchizedekJuliroSalomoSimangunsong-PT-3.cpp -o 2409106117-MelchizedekJuliroSalomoSimangunsong-PT-3 } ; if ($?)
 { .\2409106117-MelchizedekJuliroSalomoSimangunsong-PT-3 }
===== Registrasi Akun =====
Masukkan Username: Melchi
Masukkan Password: 117
Akun berhasil didaftarkan!

===== Login =====
Masukkan Username: Melchi
Masukkan Password: 117
Berhasil login!

===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 1

Daftar Karakter:
Indeks  Nama                Elemen          Rarity
-------------------------------------------------------
1       Silver Wolf         Quantum         5
2       Kafka               Lightning       5
3       Dan Heng            Wind            4

===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan:
```

```
===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 2
Masukkan Nama Karakter: Yan Qing
Masukkan Elemen Karakter: Ice
Masukkan Rarity Karakter: 5
Karakter berhasil ditambahkan!

===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 3

Daftar Karakter:
Indeks  Nama                Elemen         Rarity
-----------------------------------------------------
1       Silver Wolf         Quantum        5
2       Kafka               Lightning      5
3       Dan Heng            Wind           4
4       Yan Qing            Ice            5
Masukkan indeks karakter yang ingin diedit (1 - 4): 4
Masukkan Nama Baru: Bailu
Masukkan Elemen Baru: Lighning
Masukkan Rarity Baru: 5
Karakter berhasil diperbarui!
```

```
===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 4

Daftar Karakter:
Indeks  Nama                Elemen         Rarity
-----------------------------------------------------
1       Silver Wolf         Quantum        5
2       Kafka               Lightning      5
3       Dan Heng            Wind           4
4       Bailu               Lighning       5
Masukkan indeks karakter yang ingin dihapus (1 - 4): 4
Karakter berhasil dihapus!
```

```
===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 1

Daftar Karakter:
Indeks  Nama                Elemen         Rarity
-----------------------------------------------------
1       Silver Wolf         Quantum        5
2       Kafka               Lightning      5
3       Dan Heng            Wind           4
```

```
===== Sistem Manajemen Karakter Honkai: Star Rail =====
1. Tampilkan Karakter
2. Tambah Karakter
3. Edit Karakter
4. Hapus Karakter
5. Keluar
Pilihan: 5
Terima kasih sudah mau melihat program ini, nextim kita buat program Wuthering Waves kalo di bolehkan Bang Ade!
PS C:\Users\melch\OneDrive\Documents\APL>
```

5. Langkah-Langkah Git pada VSCode

```
PS C:\Users\melch\OneDrive\Documents\Praktikum-APL> git add .
warning: in the working copy of 'Post-Test/Post-Test-2/2409106117-MelchizedekJuliroSalomoSimangunsong-PT-2.drawio', LF will be r
eplaced by CRLF the next time Git touches it
warning: in the working copy of 'Post-Test/Post-Test-3/2409106117-MelchizedekJuliroSalomoSimangunsong-PT-3.drawio', LF will be r
eplaced by CRLF the next time Git touches it
PS C:\Users\melch\OneDrive\Documents\Praktikum-APL> git commit -m "syafiq ganteng"
[master 68f1b29] syafiq ganteng
 4 files changed, 1107 insertions(+), 67 deletions(-)
 create mode 100644 Post-Test/Post-Test-2/2409106117-MelchizedekJuliroSalomoSimangunsong-PT-2.exe
 create mode 100644 Post-Test/Post-Test-3/2409106117-MelchizedekJuliroSalomoSimangunsong-PT-3.cpp
 create mode 100644 Post-Test/Post-Test-3/2409106117-MelchizedekJuliroSalomoSimangunsong-PT-3.drawio
PS C:\Users\melch\OneDrive\Documents\Praktikum-APL> git push origin master
Enumerating objects: 13, done.
Counting objects: 100% (13/13), done.
Delta compression using up to 12 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (9/9), 30.09 KiB | 2.51 MiB/s, done.
Total 9 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/Melchi050706/Praktikum-APL.git
   bf8bec8..68f1b29  master -> master
PS C:\Users\melch\OneDrive\Documents\Praktikum-APL>
```

1. Git add & commit

Melakukan git add untuk menambahkan file yang akan kita commit, dan melakukan git commit untuk membuat checkpoint

2.Git Push

Melakukan git push untuk mengupload semua yang ada pada repository kita