**DAFTAR ISI**

HALAMAN SAMPUL i

HALAMAN JUDUL ii

HALAMAN PERSETUJUAN iii

HALAMAN PENGESAHAN iv

HALAMAN PERNYATAAN v

*ABSTRACT........................* vi

KATA PENGANTAR........................................................................................viii

DAFTAR ISI............. x

DAFTAR TABEL xiii

DAFTAR GAMBAR xv

BAB I PENDAHULUAN 1

* 1. Latar Belakang 1
  2. Identifikasi Masalah 6
  3. Rumusan Masalah 6
  4. Tujuan Penelitian 6
  5. Manfaat Penelitian 7

BAB II LANDASAN TEORI 8

* 1. Tinjauan Studi 8
  2. Tinjauan Pustaka 10
     1. Penjualan 10
     2. Atribut 11
     3. Prediksi 12
     4. Data Mining 13
     5. K-Nearest Neighbor 16
     6. Penerapan Algoritma K-Nearest Neighbor 17
     7. UML 21
        1. Use Case Diagram 21
        2. Class Diagram 23
        3. Activiti Diagram 24
        4. Sequence Diagram 25
     8. Implementasi Sistem 27
     9. Teknik Pengujuan Sistem 29
        1. White Box Testing 29
        2. Black Box Testing 32
        3. Perangkat Lunak Pendukung.................................................33
  3. Kerangka Pemikiran...................................................................................34

BAB III OBJEK DAN METODE PENELITIAN...............................................35

* 1. Objek Penelitian.........................................................................................35
  2. Metode Penelitian......................................................................................35
     1. Sumber Data.....................................................................................35
     2. Cara Pengambilan Data....................................................................36
  3. Tahap Analisis...........................................................................................36
  4. Tahap Desain.............................................................................................39
  5. Tahap Konstruksi Sistem...........................................................................40
  6. Tahap Pengujian Sistem............................................................................40
  7. Tahap Impelementasi Sistem.....................................................................41
  8. Tahap Pemeliharaan Sistem.......................................................................42

BAB IV ANALISA DAN PERANCANGAN SISTEM.....................................43

* 1. Analisa Sistem............................................................................................43
  2. Desain Sistem Secara Umum.....................................................................44
     1. Model Use Case................................................................................44
        1. Skenario Use Case Input Pengguna.................................45
        2. Skenario Use Case Inptu Penjualan Pulsa........................45
        3. Skenario Use Case Inptu Prediksi....................................46
        4. Skenario Use Case Login.................................................46
        5. Skenario Use Case Tampil Penjualan Pulsa....................47
        6. Skenario Use Case Tampil Pengguna..............................47
        7. Skenario Use Case Tampil Hasil Prediksi.......................48
     2. Aktiviti Diagram................................................................................48
  3. Desain Output Secara Umum......................................................................52
  4. Desain Input Secara Umum........................................................................53
  5. Desain File Secara Umum..........................................................................54
  6. Desain Sistem Sequence Diagram..............................................................54
     1. Squence Diagram Melihat Data Sparepart........................................54
     2. Squence Diagram Melakukan Proses Mining...................................55
     3. Squence Diagram Melihat Aturan.....................................................55
  7. Desain Sistem Secara Terinci.....................................................................56
     1. Desain *Entry* Data Pengguna.............................................................56
     2. Desain *Entry* Data Penjulan Pulsa.....................................................57
     3. Desain *Entry* Data Prediksi...............................................................58
  8. Desain Database Terinci ............................................................................59
  9. Desain Relasi Basis Data............................................................................62
  10. Desain Halam Awal Aplikasi.....................................................................63

BAB V HASIL PENELITIAN DAN PEMBAHASAN......................................64

* 1. Hasil Penelitian...........................................................................................64
     1. Gambaran Umum Lokasi Peneitian..................................................64
     2. Struktur Organisasi...........................................................................66
  2. Manual Pengerjaan Algoritma K-Nearest Neighbor..................................67
     1. Hasil Pengujian Sistem.....................................................................69
  3. Deskripsi Kebutuhan Hardware/Software..................................................75
  4. Langkah-Langkah Menjalankan Sistem.....................................................76

BAB VI KESIMPULAN DAN SARAN.............................................................86

* 1. Kesimpulan.................................................................................................86
  2. Saran...........................................................................................................86

DAFTAR PUSTAKA

LAMPIRAN

**DAFTAR TABEL**

Tabel 1.1 Data Penjualan Vocher Pulsa.................................................................3

Tabel 2.1 Atribut...................................................................................................11

Tabel 2.2 Data Training........................................................................................19

Tabel 2.3 Menghitung Kedekatan.........................................................................20

Tabel 2.4 Urutan Rangking Jarak..........................................................................21

Tabel 2.5 Kategori antar jarak...............................................................................21

Tabel 2.6 Simbol-Simbol *Class* Diagram..............................................................25

Tabel 2.7 Simbol-Simbol *Actifity* Diagram...........................................................26

Tabel 2.8 Perangkat Luna Pendukung...................................................................27

Tabel 4.1 Skenario Proses Input Pengguna...........................................................45

Tabel 4.2 Skenario Input Penjualan Pulsa.............................................................46

Tabel 4.3 Skenario Data Prediksi..........................................................................46

Tabe 4.4Skenario Login.......................................................................................47

Tabel 4.5 Skenario Tampil Penjualan Pulsa..........................................................47

Tabel 4.6 Skenario Tampil Pengguna...................................................................48

Tabel 4.7 Skenario Tampil Hasil Prediksi.............................................................48

Tabel 4.8 Desain Output Secara Umum................................................................53

Tabel 4.9 Desain Input Secara Umum...................................................................53

Tabel 4.10 Desain Input Secara Umum.................................................................54

Tabel 4.9Desain Input Secara Umum..................................................................53

Tabel 4.10Desain Input Secara Umum.................................................................54

Tabel 4.10Tabel Penggunna..................................................................................59

Tabel 4.11Tabel Penjualan Pulsa..........................................................................59

Tabel 4.12Tabel Hasil Prediksi.............................................................................60

Tabel 4.13Tabel Kuadrat Selisih...........................................................................60

Tabel 4.14Tabel Jarak K.......................................................................................60

Tabel 4.15Tabel Data\_Prediksi\_pulsa...................................................................61

Tabel 5.1Data Training..........................................................................................67

Tabel 5.2Data Testing............................................................................................67

Tabel 5.3 Peringkat Jarak Terkecil.........................................................................68

Tabel 5.4 Kelas berdasar nilai K............................................................................69

Tabel 5.5 Tabel Pengujian *Black Box* Aplikasi......................................................73

**DAFTAR GAMBAR**

Gambar 1.1 Grafik Data Penjualan Pulsa di Bulan Maret.........................................4

Gambar 2.1 Use Case..............................................................................................22

Gambar 2.2 Actor...................................................................................................23

Gambar 2.3 Sequnce Diagram................................................................................27

Gambar 2.4 Bagin Alir............................................................................................31

Gambar 2.5 Grafik Alir...........................................................................................31

Gambar 2.6 Bagan Kerangka Pikir.........................................................................35

Gambar 3.1 Diagram Use Case...............................................................................38

Gambar 4.1 Model Use Case pada Aplikasi Penjualan Pulsa..................................44

Gambar 4.2 Activity Diagram *Entry* DataPengguna.............................................49

Gambar 4.3 Activity Diagram *Entry* DataPenjualan Pulsa.....................................49

Gambar 4.4 Activity Diagram *Entry* Data Prediksi.................................................50

Gambar 4.5 Activity Diagram *Entry* Login.............................................................50

Gambar 4.6 Activity Diagram Tampil Pengguna....................................................51

Gambar 4.7 Activity Diagram Tampil Penjualan Pulsa..........................................51

Gambar 4.8 Activity Diagram Tampil Hasil Prediksi.............................................52

Gambar 4.9 Sequence Diagram data Sparepart.......................................................54

Gambar 4.10 Bagan Alir Sistem Yang Diusulkan...................................................55

Gambar 4.11 Bagan Alir Sistem Yang Diusulkan...................................................56

Gambar 4.12 DesainEntry Data Pengguna.............................................................56

Gambar 4.13 DesainEntry Data Penjualan Pulsa...................................................57

Gambar 4.14 Desain Form *Entry* Data Prediksi......................................................58

Gambar 4.15 Desain Relasi Basis Data...................................................................62

Gambar 4.16 Desain Halaman Utama Web............................................................63

Gambar 5.1 Struktur Organisasi CV.Vidya Amalia Celuler...................................66

Gambar 5.2 Flowgraph Proses Perhitungan Jarak..................................................71

Gambar 5.3 Tampilan Utama..................................................................................76

Gambar 5.4 Tampilan Login..................................................................................57

Gambar 5.5 Tampilan Halaman Admin..................................................................78

Gambar 5.6 Tabel Atribut.......................................................................................79

Gambar 5.7Halaman Input Atribut........................................................................79

Gambar 5.8 Tabel Data Training............................................................................80

Gambar 5.9 Entry Data Training.............................................................................81

Gambar 5.10 Input Data Testing............................................................................82

Gambar 5.11 Tampilan Hasil Prediksi....................................................................83

Gambar 5.12 Tampilan Halaman Jarak data Baru dengan data training..................83

Gambar 5.13 Tabel User.........................................................................................84

Gambar 5.14 Halaman Input User..........................................................................85

Gambar 5.15 Edit User...........................................................................................85