# DAFTAR ISI

<table>
<thead>
<tr>
<th>Halaman Judul</th>
<th>.................................................................</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persetujuan Laporan Tugas Akhir</td>
<td>...................................................................................</td>
<td>iii</td>
</tr>
<tr>
<td>Pengesahan Dewan Penguji</td>
<td>..................................................................................</td>
<td>iv</td>
</tr>
<tr>
<td>Pernyataan Keaslian Tugas Akhir</td>
<td>..................................................................................</td>
<td>v</td>
</tr>
<tr>
<td>Pernyataan Persetujuan Publikasi Karya Ilmiah Untuk Kepentingan Akademis</td>
<td>..................................................................................</td>
<td>vi</td>
</tr>
<tr>
<td>Ucapan Terimakasih</td>
<td>...................................................................................</td>
<td>vii</td>
</tr>
<tr>
<td>Abstrak</td>
<td>...................................................................................</td>
<td>ix</td>
</tr>
<tr>
<td>Abstract</td>
<td>....................................................................................</td>
<td>x</td>
</tr>
<tr>
<td>Daftar Isi</td>
<td>...................................................................................</td>
<td>xi</td>
</tr>
<tr>
<td>Daftar Gambar</td>
<td>...................................................................................</td>
<td>xv</td>
</tr>
<tr>
<td>Daftar Tabel</td>
<td>...................................................................................</td>
<td>xvii</td>
</tr>
<tr>
<td>Bab 1 Pendahuluan</td>
<td>....................................................................................</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Latar Belakang Masalah</td>
<td>.....................................................................................</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Rumusan Masalah</td>
<td>.....................................................................................</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Batasan Masalah</td>
<td>.....................................................................................</td>
<td>3</td>
</tr>
<tr>
<td>1.4 Tujuan Penelitian</td>
<td>.....................................................................................</td>
<td>4</td>
</tr>
<tr>
<td>1.5 Manfaat Penelitian</td>
<td>.....................................................................................</td>
<td>4</td>
</tr>
<tr>
<td>Bab 2 Tinjauan Pustaka</td>
<td>....................................................................................</td>
<td>5</td>
</tr>
<tr>
<td>2.1 Tinjauan Pustaka</td>
<td>.....................................................................................</td>
<td>5</td>
</tr>
</tbody>
</table>
2.1.3 Peramalan Saldo Keuangan Koperasi Simpan Pinjam dengan Metode Simple Moving Average (SMA) dan Weighted Moving Averages (WMA) (Studi Kasus : Koperasi PT. Indonesia Power Semarang) [5] ................. 7

2.2 Landasan Teori .................................................................................................................. 11

2.3 Data Mining ........................................................................................................................ 11

2.4 Dasar Metode Forecasting ................................................................................................. 13

2.4.1 Forecasting .................................................................................................................. 13

2.4.2 Kategori Forecasting .................................................................................................. 14

2.4.3 Metode Forecasting .................................................................................................... 15

2.4.4 Pola Data ..................................................................................................................... 18

2.4.5 Prosedur Forecasting ................................................................................................. 21

2.4.6 Metode Perhitungan Nilai Forecasting ....................................................................... 21

2.4.7 Metode Pengujian Error ............................................................................................. 22

2.5 Contoh Perhitungan .......................................................................................................... 24

2.6 Nilai Investasi .................................................................................................................... 25

2.7 Unified Modelling Language (UML) .............................................................................. 26

2.7.1 Use Case Diagram ...................................................................................................... 26

2.7.2 Sequence Diagram ..................................................................................................... 27

2.7.3 Activity Diagram ......................................................................................................... 28

2.8 Prototype ........................................................................................................................ 29

2.8.1 Langkah Pembuatan Prototype ................................................................................. 30

2.9 Hypertext Preprocessors (PHP) .................................................................................... 31

Bab 3 METODE PENELITIAN ................................................................................................. 32

3.1 Inisiasi ............................................................................................................................... 32

3.1.1 Observasi .................................................................................................................... 32
3.1.2 Kajian Pustaka .............................................................. 32
3.2 Metode Pengumpulan Data .................................................. 33
  3.2.1 Sumber Data.................................................................. 33
  3.2.2 Pengumpulan Data ......................................................... 33
  3.2.3 Data Yang Digunakan ..................................................... 34
3.3 Framework Penelitian .......................................................... 35
3.4 Implementasi Metode Weighted Moving Averages ................. 36
3.5 Evaluasi dan Validasi Hasil Forecasting ................................. 38
3.6 Pengembangan Prototype .................................................... 39

Bab 4 HASIL DAN PEMBAHASAN .............................................. 40
  4.1 Persiapan Data .................................................................. 40
    4.1.1 Preprocessing ........................................................... 41
    4.1.2 Diagram Pola Data ...................................................... 43
  4.2 Pengujian Pembobotan WMA .............................................. 44
  4.3 Implementasi Weighted Moving Average ............................... 44
  4.4 Evaluasi Dan Validasi Hasil ............................................... 56
  4.5 Implementasi Prototype ..................................................... 59
    4.5.1 Communication ......................................................... 60
    4.5.2 Quick Plan .............................................................. 60
    4.5.3 Modelling Quick Design ............................................. 72
    4.5.4 Construction of Prototype .......................................... 73
    4.5.5 Deployment ............................................................ 78

Bab 5 PENUTUP ........................................................................ 80
  5.1 Kesimpulan ...................................................................... 81
  5.2 Saran ............................................................................... 82
DAFTAR PUSTAKA ........................................................................................................... 83