

Daftar Gambar

Gambar 2.1 Variansi PCA.....	6
Gambar 2.2 Flowchart K-Means	8
Gambar 3.1 Gambaran Umum Sistem	13
Gambar 3.2 Perancangan Scraping	17
Gambar 3.3 Perancangan Text Preprocessing.....	18
Gambar 3.4 Perancangan Website	19
Gambar 3.5 Perancangan Pencarian Tren	20
Gambar 3.6 Perancangan Feature Extraction.....	21
Gambar 3.7 Metode Elbow	21
Gambar 3.8 Metode Silhouette	22
Gambar 3.9 Metode k-Means.....	23
Gambar 3.10 Perancangan Tampilan Awal	24
Gambar 3.11 Perancangan Tampilan Loading.....	24
Gambar 3.12 Perancangan Visualisasi Produk	25
Gambar 3.13 Class Diagram	26
Gambar 3.15 Sequence Diagram.....	26
Gambar 3.16 Activity Diagram.....	27
Gambar 3.17 Virtual Machine.....	28
Gambar 3.18 Chrome Browser	28
Gambar 3.19 Python Library.....	28
Gambar 3.20 Chrome Driver, Scraping Script dan Kamus Kata	28
Gambar 3.21 Implementasi scraping.....	29
Gambar 3.22 Kode Text Treprocessing	29
Gambar 3.23 Produk Shopee.....	30
Gambar 3.24 Produk sesudah Text Preprocessing Shopee	30
Gambar 3.25 Implementasi Database	30
Gambar 3.26 Struktur Django	31
Gambar 3.27 Kode Views Django	31
Gambar 3.28 Kode AJAX	32
Gambar 3.29 Kode Moving Average	32

Gambar 3. 30 Nilai MA	33
Gambar 3.31 Kode Feature Extraction.....	33
Gambar 3.32 Feature Extraction Proses	34
Gambar 3.33 Feature Extraction Hasil	34
Gambar 3.34 Kode Metode Silhouette.....	34
Gambar 3.35 Score metode Silhouette.....	35
Gambar 3.36 Kode k-Means	35
Gambar 3.37 Hasil k-Means	35
Gambar 3.38 Implementasi tampilan awal.....	36
Gambar 3.39 Implementasi tampilan loading	36
Gambar 3.40 Implementasi visualisasi produk	37
Gambar 3.41 Implementasi visualisasi setiap produk.....	37
Gambar 4.1 Kode filter produk	38
Gambar 4.2 Produk Shopee.....	38
Gambar 4.3 Hasil scraping filter	39
Gambar 4. 4 Kode mengambil data ulasan dari database	39
Gambar 4.5 Kode cek apakah data sudah ada.....	39
Gambar 4.6 Scraping proses cek data apakah sudah ada	40
Gambar 4.7 Scraping proses cek data apakah sudah ada 2	40
Gambar 4.8 Scraping error list index out of range.....	41
Gambar 4.9 Scraping error no attribute.....	41
Gambar 4.10 Scraping error database	41
Gambar 4.11 Hasil Text Preprocessing.....	42
Gambar 4.12 Moving Average 12 Bulan	42
Gambar 4.13 Moving Average 6 Bulan	43
Gambar 4.14 Moving Average 3 Bulan	43
Gambar 4.15 Feature Extraction TSNE	44
Gambar 4.16 Feature Extraction PCA	44
Gambar 4.17 Data sebelum clustering	45
Gambar 4.18 Metode Silhouette	45
Gambar 4.19 Metode Elbow	46
Gambar 4.20 K-Means K=9	46

Gambar 4.21 K-Means K=1447