

ABSTRAK

Pengerjaan tugas akhir ini meliputi pengembangan sistem pendukung keputusan untuk memberikan alternatif terbaik pada penentuan pembelian *handphone*. Sistem pendukung keputusan ini dapat memberikan alternatif *handphone* terbaik berdasarkan skala kepentingan yang dianggap paling penting oleh pengguna. AHP (*Analytical Hierarchy Process*) adalah salah satu metode yang digunakan untuk menyelesaikan masalah yang mengandung banyak kriteria (*Multi-Criteria Decision Making*). Sistem ini menggunakan perhitungan matriks untuk menentukan *eigen vector* yang akan dijadikan *local priority* dan *global priority*. Perhitungan tersebut diimplementasikan dalam bahasa Ruby. Sistem yang dibuat merupakan sistem berbasis web, dengan menggunakan framework rails yang terdiri dari *active record* sebagai *model*, *action view* sebagai *view*, dan *action controller* sebagai *controller*-nya. Database engine yang digunakan yaitu MySQL. Hasil yang terdapat dalam sistem ini berupa *ranking handphone* terbaik berdasarkan perhitungan AHP.

Kata kunci: Sistem Pendukung Keputusan, *Handphone*, AHP, *Multi-Criteria Decision Making*

ABSTRACT

This final project includes development of decision support systems to provide the best alternative for determination of mobile phone purchases. It is expected that this decision support system can provide the best phone based on the scale of alternative interests that are considered by the user. AHP (Analytical Hierarchy Process) is one of the methods used to solve problems that contain many criteria (Multi-Criteria Decision Making). This system uses matrix calculation to determine the eigen vector that will be used as local priority and global priority. The calculation is implemented in Ruby language. The system is web-based system, using framework rails that consist of active record as a model, action view as a view, and action controller as a controller. The database engine used is MySQL. The system gives the best phone to purchase based on the calculation of AHP.

Keywords: Decision Support Systems, Mobile phone, AHP, Multi-Criteria Decision Making

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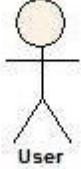
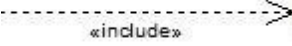
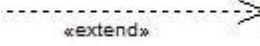
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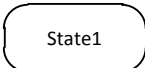
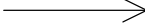
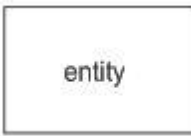
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DAFTAR LAMPIRAN

DAFTAR NOTASI / LAMBANG

Simbol	Penggunaan	Keterangan
 User	Use Case	Pengguna dari sistem, biasa disebut aktor. Baik itu manusia, mesin atau sistem lain yang berinteraksi dengan sistem yang sedang berjalan.
 Use Case	Use Case	Elemen modelling UML yang menjelaskan skenario atau apa saja yang dilakukan user saat menggunakan sistem
 Association	Use Case	Sebuah konektor yang menghubungkan aktor dan usecase
 «include»	Use Case	Memungkinkan suatu use case untuk menggunakan fungsionalitas yang disediakan oleh usecase lain
 «extend»	Use Case	Memungkinkan suatu use case memperluas fungsionalitas yang disediakan use case lainnya
 Decision	Activity Diagram	Menunjukkan pilihan.

 <i>Initial state</i>	<i>Activity Diagram</i>	Tahap awal untuk suatu aktivitas.
 <i>Final state</i>	<i>Activity Diagram</i>	Tahap akhir untuk suatu aktivitas.
 <i>State1</i>	<i>Activity Diagram</i>	Menunjukkan aktivitas
 <i>Control flow</i>	<i>Activity Diagram</i>	Menunjukkan pergerakan aktivitas.
 <i>dependency</i>	<i>Class Diagram</i>	Hubungan antara class yang bersifat ketergantungan keberadaan class satu dengan class lainnya.
 <i>Class</i>	<i>Class Diagram</i>	Merepresentasikan suatu objek yang menggambarkan struktur dan perilaku sistem.
 <i>aggregate</i>	<i>Class Diagram</i>	Hubungan yang memperlihatkan isi dari suatu elemen dengan elemen lain.
 <i>entity</i>	<i>Entity Relationship Diagram</i>	Suatu atau objek di dunia nyata yang dapat dibedakan dari suatu objek lainnya.

	<i>Entity Relationship Diagram</i>	Properti deskriptif yang dimiliki oleh setiap anggota dari himpunan entitas.
	<i>Entity Relationship Diagram</i>	Hubungan antara suatu himpunan entitas dengan himpunan entitas lainnya.
	<i>Entity Relationship Diagram</i>	Menggambarkan kardinalitas antar entity, diantaranya one to one, one to many, many to one, many to many

DAFTAR SINGKATAN

Singkatan	Deskripsi
AHP	<i>Analytic Hierarchy Process</i>
AJAX	<i>Asynchronous Javascript and XML</i>
AMOLED	<i>Active Matrix Organic Light Emmiting Diode</i>
CDMA	<i>Code Division Multiple Accsess</i>
CI	<i>Consistency Index</i>
CIF	<i>Common Intermediate Format</i>
CR	<i>Consistency Ratio</i>
CSS	<i>Cascading Style Sheet</i>
CSTN	<i>Color Super Twisted Nematic</i>
DBMS	<i>Database Management System</i>
DGMS	<i>Dialogue Generation Management System</i>
DSS	<i>Desicion Support System</i>
EDGE	<i>Enhanced Data for Global Evolution</i>
ER	<i>Entity Relationship</i>
FM	<i>Frequenci Modulation</i>
GB	<i>Gigabyte</i>
GHz	<i>Gigahertz</i>
GPRS	<i>General Packet Radio Service</i>

GSM	<i>Global System for Mobile communications</i>
HP	<i>Handphone</i>
HSDPA	<i>High Speed Downlink Packet Access</i>
HTML	<i>Hypertext Markup Language</i>
ID	<i>Indentity</i>
IEEE	<i>Institute of Electrical and Electronics Engineers</i>
IP	<i>Internet Protocol</i>
KBps	<i>Kilobyte per second</i>
LAN	<i>Local Area Network</i>
LCD	<i>Liquid Crystal Displays</i>
LEP	<i>Light-Emmiting Polymer</i>
Li-ion	<i>Lithium Ion</i>
Li-Po	<i>Lithium Polymer</i>
mA	<i>miliAmpere</i>
mAh	<i>miliAmpere-Hour</i>
MB	<i>Megabyte</i>
MBMS	<i>Modelbase Management System</i>
MBps	<i>Megabyte per second</i>
MHz	<i>Megahertz</i>
MMS	<i>Multimedia Messaging Service</i>
MVC	<i>Model, View, Controller</i>

NiCd	<i>Nickel Cadmium</i>
NiMH	<i>Nickel Metal Hydride</i>
OEL	<i>Organic Electro Luminescence</i>
OLED	<i>Organic Light-Emitting Diode</i>
OOP	<i>Object Oriented Programming</i>
OS	<i>Operating System</i>
PC	<i>Personal Computer</i>
PSTN	<i>Public Switched Telephone Network</i>
RDBMS	<i>Relational Database Management System</i>
RI	<i>Random Index</i>
SDD	<i>Software Design Description</i>
SDLC	<i>System Development Life Cycle</i>
SMS	<i>Short Message Service</i>
SPK	<i>Sistem Pendukung Keputusan</i>
SQL	<i>Structured Query Language</i>
SRS	<i>Software Requirement Specification</i>
SSFH	<i>Spread Spectrum Frequency Hopping</i>
STN	<i>Super Twisted Nematic</i>
SXVGA	<i>Super Extended Visual Graphics Array</i>
TFD	<i>Thin Film Diode</i>
TFT	<i>Thin Film Transistor</i>

UFB	<i>Ultra Fine Bright</i>
UI	<i>User Interface</i>
UML	<i>Unified Modeling Language</i>
UMTS	<i>Universal Mobile Telecommunication Service</i>
USB	<i>Universal Serial Bus</i>
VGA	<i>Visual Graphics Array</i>
VHF	<i>Very High Frequency</i>
WAP	<i>Wireless Application Protocol</i>
Wi-Fi	<i>Wireless Fidelity</i>
WLAN	<i>Wireless Local Area Network</i>
XML	<i>Extensible Markup Language</i>

DAFTAR ISTILAH

Istilah	Keterangan
<i>Decomposition</i>	prinsip menyusun hirarki dengan memecah persoalan yang utuh menjadi unsur-unsurnya
<i>comparative judgement</i>	prinsip menentukan prioritas dengan membuat penilaian tentang kepentingan relatif dua elemen pada suatu tingkat tertentu dalam kaitannya dengan tingkat yang di atasnya
<i>comparison priority</i>	nilai kepentingan setiap elemen dengan elemen lainnya
<i>pairwise comparison</i>	matriks elemen-elemen yang digunakan saat <i>comparative judgement</i>
<i>logical consistency</i>	keseragaman/ relefansi objek-objek yang didasarkan pada kriteria tertentu
<i>local priority</i>	nilai hasil normalisasi matriks
<i>global priority</i>	hasil akhir nilai <i>alternatives</i> berdasarkan skala prioritasnya yang dikalikan dengan <i>local priority</i>
<i>Alternatives</i>	obyek-obyek yang dicari nilai AHP nya memiliki elemen-elemen yang disebut kriteria
<i>Criteria/Kriteria</i>	elemen-elemen dari suatu objek persoalan yang mempunyai nilai bobot pada sub- <i>criteria</i> -nya dan disusun pada pohon hirarki
<i>instance criteria</i>	Bagian/contoh dari suatu kriteria
<i>instance criteria value</i>	nilai bobot <i>instance criteria</i>
<i>weighted criteria</i>	kriteria yang mempunyai nilai bobot
<i>consistency ratio</i>	rasio konsistensi suatu matriks yang mempunyai ketentuan harus lebih besar dari 0,1
<i>random index</i>	nilai setiap ordo matriks

<i>eigen vector</i>	sebutan lain untuk <i>local priority</i> pada AHP
<i>reciprocal</i>	Perbandingan terbalik antara 2 elemen
aksioma	suatu pernyataan yang diterima sebagai kebenaran dan bersifat umum, tanpa memerlukan pembuktian
preferensi	Prioritas; pilihan; kecenderungan; kesukaan