

CHAPTER I

INTRODUCTION

This chapter consists of the background of the problem, research objectives, problem formulation, research scope and outline

1.1 Background

University is a place of learning and teaching between lecturers and students. In Indonesia, the universities have been growing rapidly. The Ministry of Research Technology and Higher Education through the Pangkalan Data Perguruan Tinggi pages has released the data about number of university in Indonesia 2018, as shown in **Table 1.1**.

Table 1.1 Recapitulation Number of Universities in Indonesia 2018 (Source: Pangkalan Data Pendidikan Tinggi)

No	Jenis	Perguruan Tinggi		Total
		Negri	Swasta	
1	Perguruan Tinggi (PT)	123	3128	3251
2	Perguruan Tinggi Agama (PTA)	110	1064	1174
3	Perguruan Tinggi Kedinasan (PTK)	184	0	184
Total		417	4192	4609

The number of universities in Indonesia in 2018 has increased compared to the previous year number which was 4,504 colleges (Kukuh, 2017). The type of colleges: Perguruan Tinggi (PT), Perguruan Tinggi Agama (PTA) and Perguruan Tinggi Kedinasan (PTK). The government's role is very crucial in establishing and improving the quality of universities using a standard called as accreditation. Accreditation is an educational quality assessment standards showing that the college or department fulfills the standards or requirements set by the National Accreditation Board of Higher Education BAN-PT. Determination of

accreditation by BAN-PT is done by assessing the process and performance as well as the linkages of goals, inputs, processes and outputs of a university or study program, which is the responsibility of each college or study program (Soesatyo, 2018),

Universitas Andalas is one of the institutions in Indonesia that provides educational services in West Sumatra and has several courses in various fields of science. Universitas Andalas has numerous students and increased every year. The following graph, **Figure 1.1**, shows the number of students in Universitas Andalas from 2013- 2017.

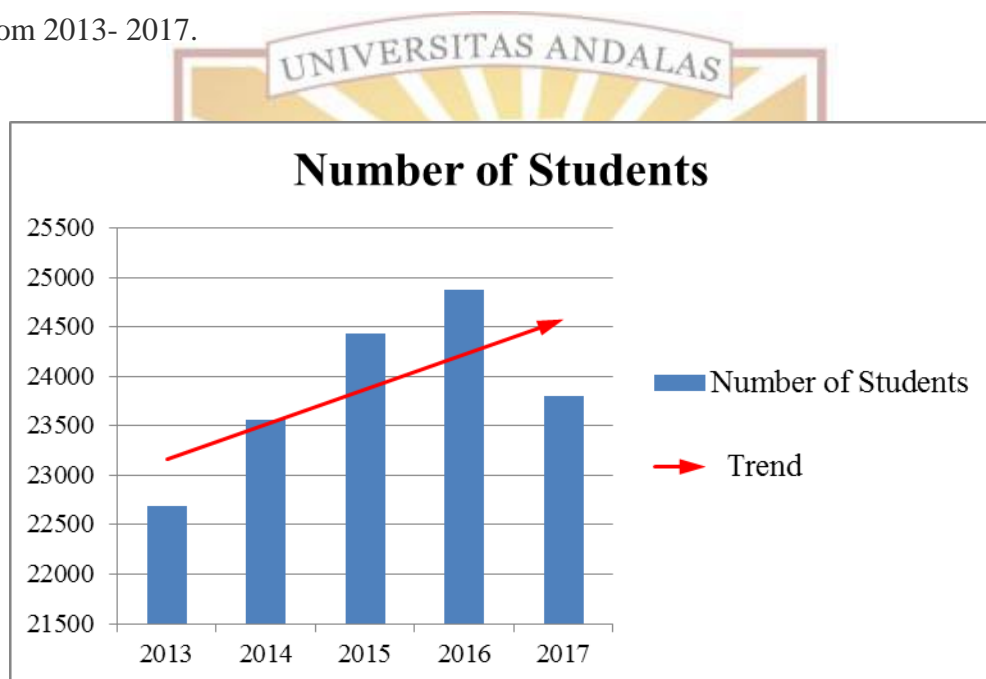


Figure 1.1 Graph Number of Students Universitas Andalas in 2013-2017
(Source: Data & Dokumen Universitas Andalas, 2018)

Based on the graph in **Figure 1.1**, it can be seen that over the last 5 years the number of students at the Universitas Andalas was gradually rise. In year 2017, there were a decreasing number of regular students. But the number of new students still increased. The increasing number of students in Universitas Andalas causes high demand for qualified labor to produce students with high-quality graduates. The labor includes full-time lecturers, part-time lecturers and education staff such as librarians, laboratories / technicians / analysts / operators / programmers, administration and others. According to the data and documents of

Universitas Andalas, it is stated that there are 1345 full-time lecturers, 70 part-time lecturers and 838 institutional educators from a wide variety of educational backgrounds (Data & Dokumen Universitas Andalas, 2018).

Due to the large amount, Universitas Andalas has to monitor and measure the student's performance and graduates continuously as well as managing resources to support the achievement of university objectives in accordance with accreditation standards Akreditasi Program Studi BAN-PT. There are 9 standards in calculating the performance of universities: Visi, Misi, Tujuan dan Strategi; Tata Pamong, Tata Kelola dan Kerjasama; Mahasiswa; Sumber Daya Manusia; Keuangan, Sarana dan Prasarana; Pendidikan; Penelitian; Pengabdian Kepada Masyarakat; Luaran dan Capaian Tridharma. The mainly focused in measuring the performance at this research are in standard 3 and 4: "Mahasiswa" and "Sumber Daya Manusia".

The process of monitoring the performance of students requires data and information from the many sections with different data formats as well as the involvement of many parties. Based on Borang Akreditasi Program Studi BAN-PT (2019), there are several points for calculating the performance of students and human resources. This research uses data from the database to calculate the accreditation based performance. The data that needs to be calculated about the students and human resources performance are (Borang Akreditasi Program Studi BAN-PT, 2019):

Standard 3: *Mahasiswa*

1. The number of students
2. The number of students each year
3. The number of students each study program
4. The number of prospective students
5. The number of applicants
6. Total GPA (Grade Point Average) for each study program
7. The average GPA

8. The ratio between number of students by number of applicants
9. The ratio between number of applicants by number of prospective students

Table 1.2 *Seleksi Mahasiswa Table (Borang Akreditasi Program Studi, 2019)*

Tahun Akademik	Daya Tampung	Jumlah Calon Mahasiswa		Jumlah Mahasiswa Baru		Jumlah Mahasiswa Aktif	
		Pendaftar	Lulus Seleksi	Reguler	Transfer	Reguler	Transfer
1	2	3	4	5	6	7	8
TS-4							
TS-3							
TS-2							
TS-1							
TS						NRTS=	NTTS=
Jumlah		NA=	NB=	NC=	ND=	NM = NRTS + NTTS	

Standard 4: *Sumber Daya Manusia*

1. The total number of employee
2. The number of employee each employee type
3. The number of employee based on educational background

Table 1.3 *Dosen Tetap di UPPS yang ditugaskan di Program Studi yang Diakreditasi (Borang Akreditasi Program Studi, 2019)*

Nama Dosen	Pendidikan Tertinggi	Bidang Keahlian	Jabatan Akademik	Sertifikat Pendidikan Profesional	Sertifikat Kompetensi/Profesi /Industri	Mata Kuliah pada Program Studi yang Diakreditasi	Kesesuaian dengan Matakuliah yang Diampu	
							Sesuai	Tidak Sesuai

The results of the performance monitoring will form a basis for rapid decision-making. In its application, it takes a team assigned to manage the required data as a data recap of accreditation assessment. The accreditation team consists of 30 people, so it is wasted resources such as humans and time. For these reasons, it is crucial and aimed to apply the Business Intelligence concept to analyze and monitor the high performance for the results of analyzing and monitoring the basis in performing management actions related to the performance of students and graduates so as to create an optimal process real time

so that the resulting output can be in accordance with the standards published by the BAN-PT related students and graduates.

The concept of Business Intelligence application that is poured into the form of dashboards present information at a glance as well as solutions for the information needs of universities based on Key Performance Indicators (KPIs) using an effective presentation media. Dashboard is a display that will be used by the university's Top Level Management in analyzing information on the accreditation performance of standard 3 and 4. This information will then be used as a reference for the top level management of Universitas Andalas in making decision.

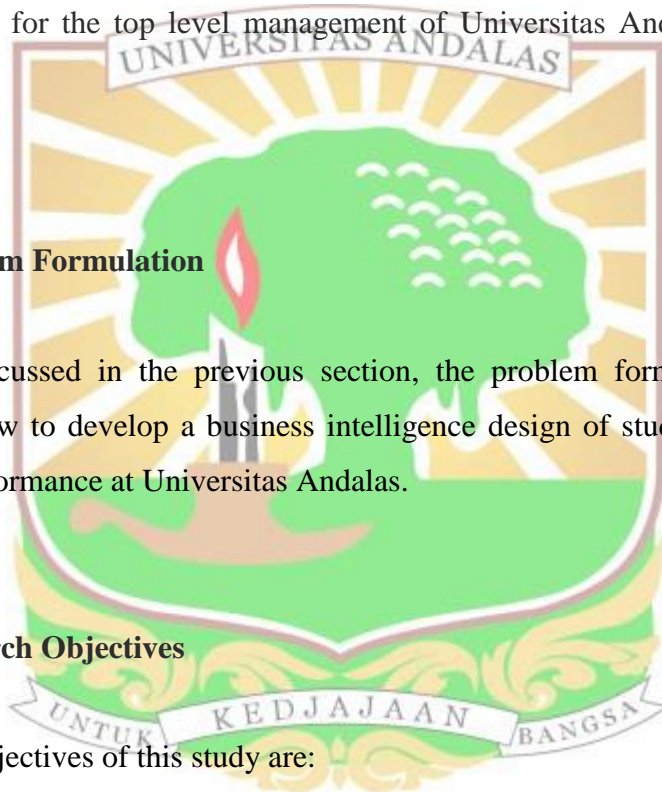
1.2 Problem Formulation

As discussed in the previous section, the problem formulation of this research is how to develop a business intelligence design of student and human resources performance at Universitas Andalas.

1.3 Research Objectives

The objectives of this study are:

1. To generate dashboards consisting student and human resource performance based on Borang Akreditasi Program Studi BAN-PT 2019.
2. To generate computing based tool for decision making used by top level management of the university



1.4 Research Scope

The scopes of this research are:

1. The processing data based on standard 3 and standard 4 Borang Akreditasi BAN-PT 2019.
2. The processing data based on data collected from databases.
3. The database connected is a local server database.

1.5 Outline of The Report

The outlines of the report in this research are as follows:

CHAPTER I INTRODUCTION

This chapter consist of the introduction which is the basis on this research. Chapter one consists of background, problem formulation, research objectives, constraints and scope of the research, and outline of the report.

CHAPTER II LITERATURE REVIEW

The second chapter consist of the literature obtained from various references as reinforcing the theory of the business intelligence, dashboard and accreditation information that can support in this research.

CHAPTER III RESEARCH METHODOLOGY

This chapter consist of a description of the stages which followed in developing the dashboard.

CHAPTER IV BUSINESS INTELLIGENCE DESIGN

This chapter consist of the process of schema design, data warehouse design and dashboard.

CHAPTER V ANALYSIS

This chapter consist of data integration analysis, schema design analysis and information delivery analysis in designing the dashboard.

CHAPTER VI CONCLUSION

This chapter consist of the conclusions in designing dashboard and suggestions to be applied by the next research.

