

# Specification of business processes

## 1. Business goals of the organization

Our school “Academy of success” located in Gdansk, Poland, is a special type of educational institution where the exam is conducted once every month. Its’ main goal is to maximize students’ academic results from the exams. The school board decided that to acknowledge the goal as achieved is to increase student’s grades by 10% annually. “Academy of success” keeps track of two main metrics: grade obtained from exams conducted monthly and the satisfaction from the obtained grade. A rising trend of at least 1% for those two metrics per month will signify the school’s success. There are certain types of exams such as: scientific, humanistic, linguistic. Also, there is a supervisor of each exam – a teacher responsible for preparing and carrying out the exam. The students attending the school come from different districts. The exams take place in the appointed classroom.

The school council is interested in analyzing the reasons for the change in the overall grade average and the number of positive grades each month.

## 2. Business processes

### **Conducting Exams**

a. A general description of the business process and a description of the performance metrics generated by this process, possible current analytical problems.

The process of conducting exams at a school typically involves several steps to effectively assess students' knowledge and understanding. On the exam day, at a specified time, students come to the appointed room and take the test. After this process the supervising teacher collects the tests. Within 14 working days exams shall be checked by the teachers and entered the system next to the name, surname and index of the student. Once grading is complete, exam results are compiled and released to students and parents. Schools may analyze overall performance trends and individual student progress.

#### b. Typical questions

- Give the students' average grade from the specific month
- Does the results from exams vary when it comes to different years
- Compare the number of students that passed the exam in the current month with the previous month.
- Students from which district score the highest average grade?
- Does the exam type influence the average grade?
- Does the number of positive grades differ between different supervisors?
- Does gender influence exam results?
- Does the time of the day have an impact on the grade?
- Compare the scoring of the students that are not living the same city as the school is located to those who are living the same city
- Does the number of students that have passed the exam differ when the supervisor was a Female or Male?

#### c. Data

Data sufficient to analyze the grades of the students is extracted from the 'SchoolSystem' database. It stores most of the data about the exams and the grades each student received, which teachers input the grade and who was the exam's supervisor. The dates of conducted diagnostic exams are stored too. Additionally, more detailed information about students and teachers is stored in the CSV files. Those files contain information about where they live (both city and its district), their gender and date of birth. The teachers' file has information about their scientific degree (title) and the date they've started working in the school. In the School\_Students CSV file there is also a telephone number and e-mail for students' legal guardian.

## Schedule Organization

a. A general description of the business process and a description of the performance metrics generated by this process, possible current analytical problems.

The procedure of organizing the schedule in school divides into few components. The most important thing is creating a general schedule for each class for an entire year. The design teachers receive information about the name of class and the number of total hours that each class has in 2 semesters. In the next step they proceed to project the plan so that it is just for everyone. It means the school day length must be evenly distributed. The category “schedule organization” also consists of finding a suitable date for diagnosing exam.

Goals of the organization for the schedule planning process:

- Increase the satisfaction of the students/parents with the schedule by 0.5% monthly
- Decrease of the number of classes conducted after the 3PM by 10% monthly

b. Typical questions

- Which student classes have more classes weekly than the average number of classes
- What is the average amount of weekly classes?
- In what day there are most scientific classes?
- Which class has the most lessons for one day?
- Which teachers conduct the most lessons during a week ?

c. Data

All data needed for the schedule organization analysis are extracted from the school schedule system.