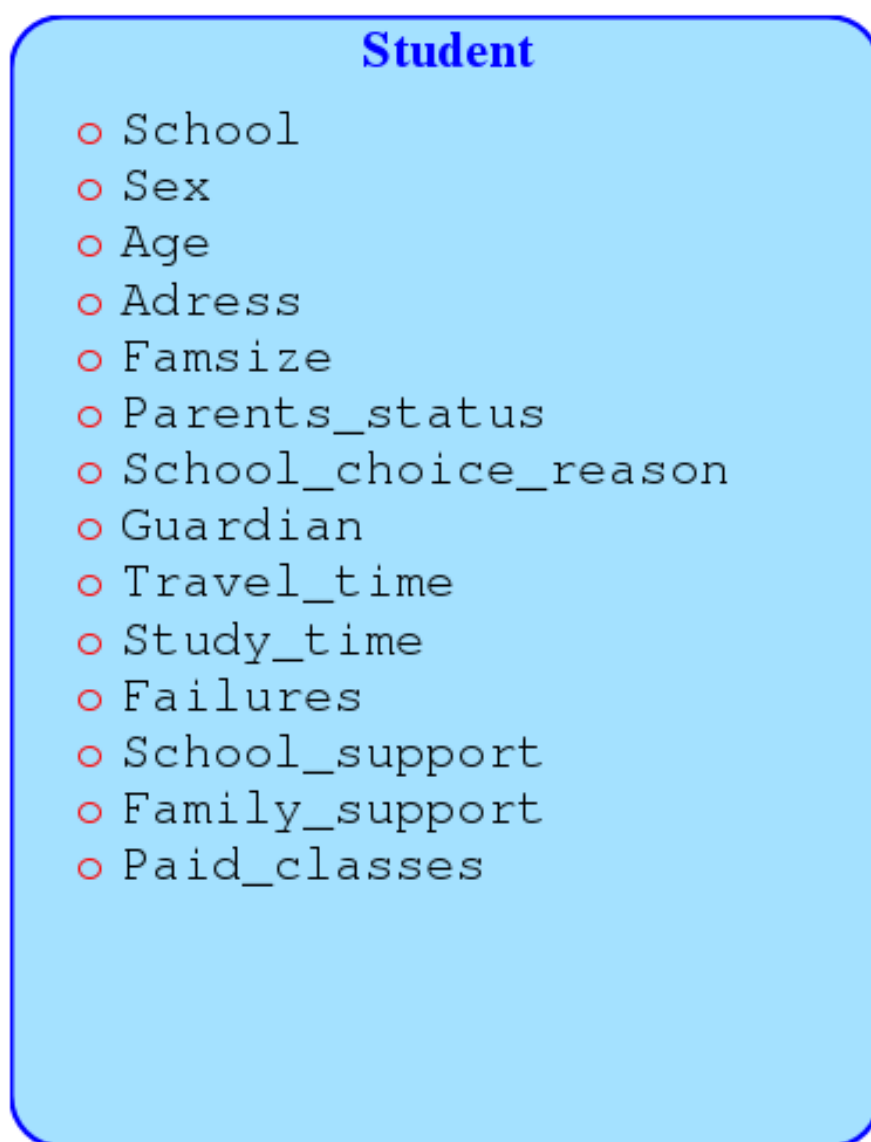**Entities**

The chosen area of the databases basics learning is the research about how different factors influence on the students education progress. Entities, forming the chosen area are described below.

Student

This entity includes some personal information about current student. There are attributes which describes the entity:

Student
- School
- Sex
- Age
- Adress
- Famsize
- Parents_status
- School_choice_reason
- Guardian
- Travel_time
- Study_time
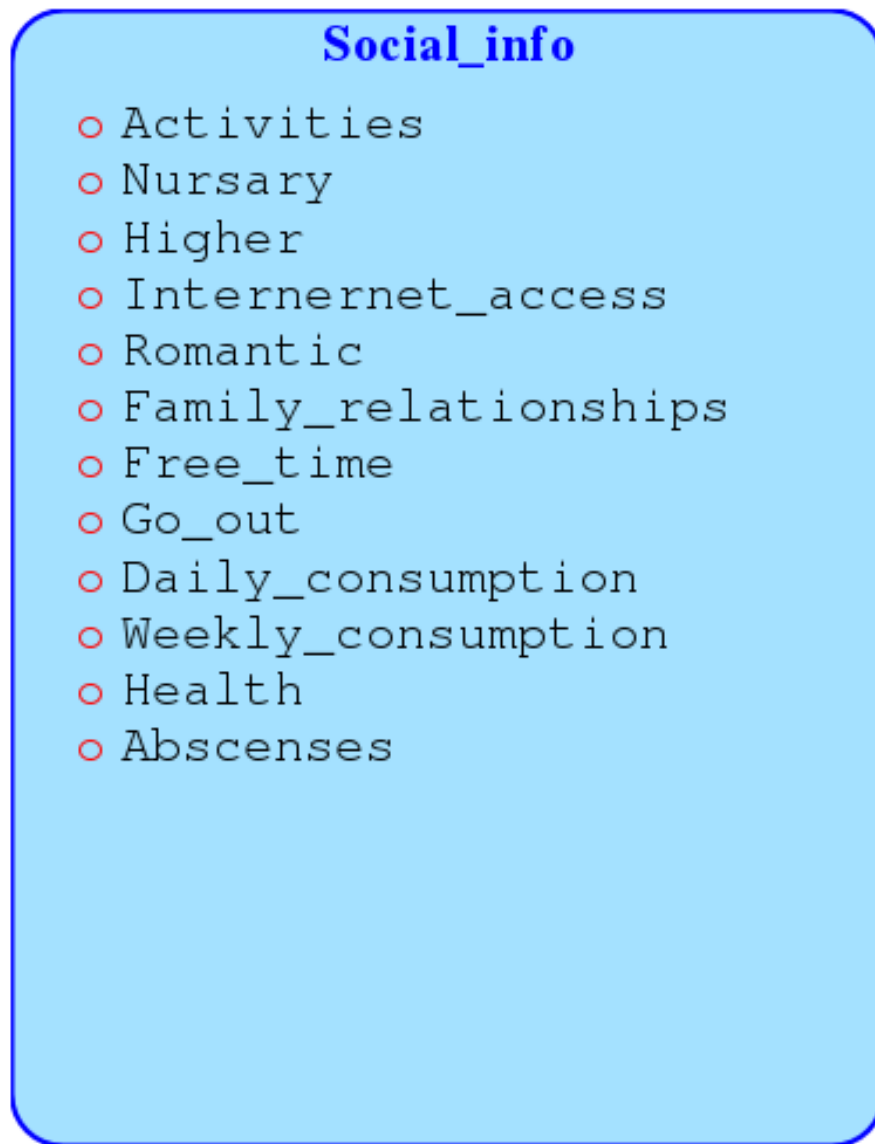- Failures
- School_support
- Family_support
- Paid_classes

Pic 1 – Student entity

1) **School** – student's school (binary: 'GP' - Gabriel Pereira or 'MS' - Mousinho

da Silveira). **Data type** – text.

2) **Sex** – student's sex (binary: 'F' - female or 'M' - male). **Data type** – text.

3) **Age** – student's school (binary: 'GP' - Gabriel Pereira or 'MS' - Mousinho da Silveira). **Data type** – numeric.

4) **Adress** – student's home address type (binary: 'U' - urban or 'R' - rural) . **Data type** – text.

5) **Famsize** – family size (binary: 'LE3' - less or equal to 3 or 'GT3' - greater than 3). **Data type** – text.

6) **Parents_status** – parent's cohabitation status (binary: 'T' – living together or 'A' – apart). **Data type** – text.

7) **School_choice_reason** – reason to choose this school (nominal: close to 'home', school 'reputation', 'course' preference or 'other') . **Data type** – text.

8) **Guardian** – student's guardian (nominal: 'mother', 'father' or 'other'). **Data type** – text.

9) **Travel_time** – home to school travel time (numeric: 1 - <15 min., 2 - 15 to 30 min., 3 - 30 min. to 1 hour, or 4 - >1 hour). **Data type** – numeric.

10) **Study_time** – weekly study time (numeric: 1 - <2 hours, 2 - 2 to 5 hours, 3 - 5 to 10 hours, or 4 - >10 hours). **Data type** – numeric.

11) **Failures** – number of past class failures (numeric: n if 1<=n<3, else 4). **Data type** – numeric.

12) **School_support** – extra educational support (binary: yes or no). **Data type** – boolean.

13) **Family_support** – family educational support (binary: yes or no). **Data type** – boolean.

14) **Paid_classes** – extra paid classes within the course subject (Math or Portuguese) (binary: yes or no). **Data type** – boolean.

Social info

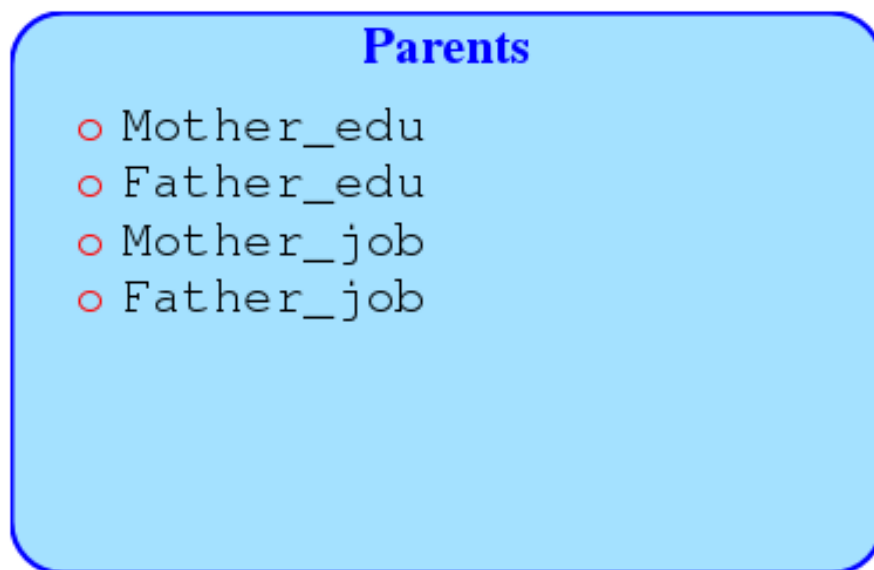This entity includes some additional information from the social poll.

Pic 2 – Social info entity

1) **Acticities** – extra-curricular activities (binary: yes or no). **Data type** – boolean.

2) **Nursary** – attended nursery school (binary: yes or no). **Data type** – boolean.

3) **Higher** – wants to take higher education (binary: yes or no). **Data type** – boolean.

4) **Internet_access** – Internet access at home (binary: yes or no). **Data type** – boolean.

5) **Romantic** – with a romantic relationship (binary: yes or no). **Data type** – boolean.

6) **Family_relationships** – quality of family relationships (numeric: from 1 - very bad to 5 - excellent). **Data type** – numeric.

7) **Free_time** – free time after school (numeric: from 1 - very low to 5 - very

3

high). **Data type** – numeric.

8) **Go_out** – going out with friends (numeric: from 1 - very low to 5 - very high). **Data type** – numeric.

9) **Daily_consumption** – workday alcohol consumption (numeric: from 1 - very low to 5 - very high). **Data type** – numeric.

10) **Weekend_consumption** – weekend alcohol consumption (numeric: from 1 - very low to 5 - very high). **Data type** – numeric.

11) **Health** – current health status (numeric: from 1 - very bad to 5 - very good). **Data type** – numeric.

12) **Absences** – number of school absences (numeric: from 0 to 93) – numeric.

Parents

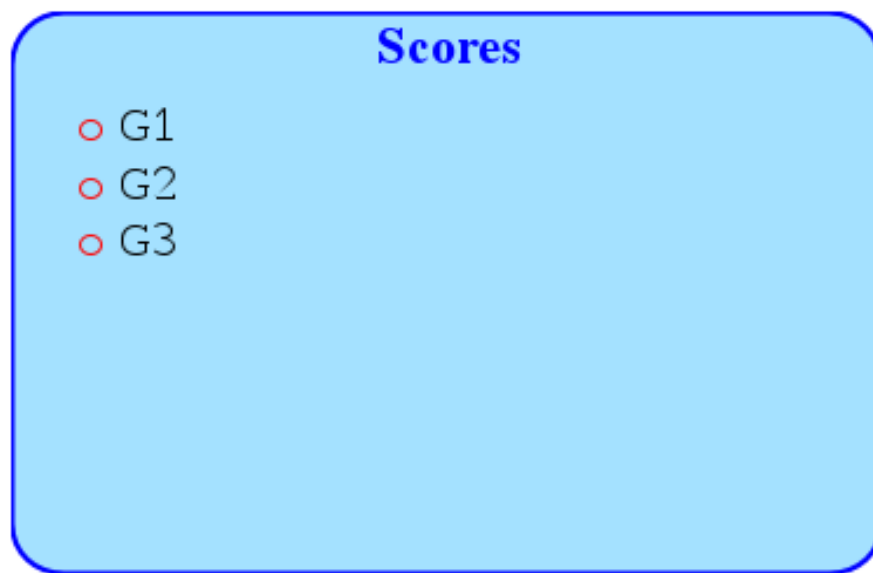This entity includes some information about student's parents.

Pic 3 – Parents entity

1) **Mother_edu** – mother's education (numeric: 0 - none, 1 - primary education (4th grade), 2 – 5th to 9th grade, 3 – secondary education or 4 – higher education). **Data type** – numeric.

2) **Father_edu** – father's education (numeric: 0 - none, 1 - primary education (4th grade), 2 – 5th to 9th grade, 3 – secondary education or 4 – higher education). **Data type** – numeric.

3) **Mother_job** – mother's job (nominal: 'teacher', 'health' care related, civil 'services' (e.g. administrative or police), 'at home' or 'other'). **Data type** – text.

4) **Father_job** – father's job (nominal: 'teacher', 'health' care related, civil 'services' (e.g. administrative or police), 'at home' or 'other'). **Data type** – text.

Scores

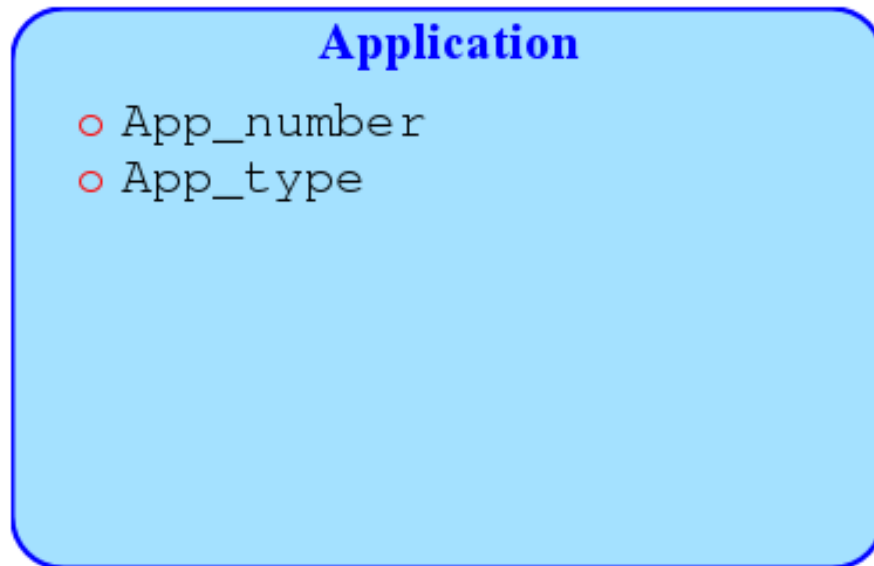This entity includes some information about student's scores.

Pic 4 – Scores entity

1) **G1** – first period grade (numeric: from 0 to 20). **Data type** – numeric.
2) **G2** – second period grade (numeric: from 0 to 20). **Data type** – numeric.
3) **G3** – last period grade (numeric: from 0 to 20). **Data type** – numeric.

Application

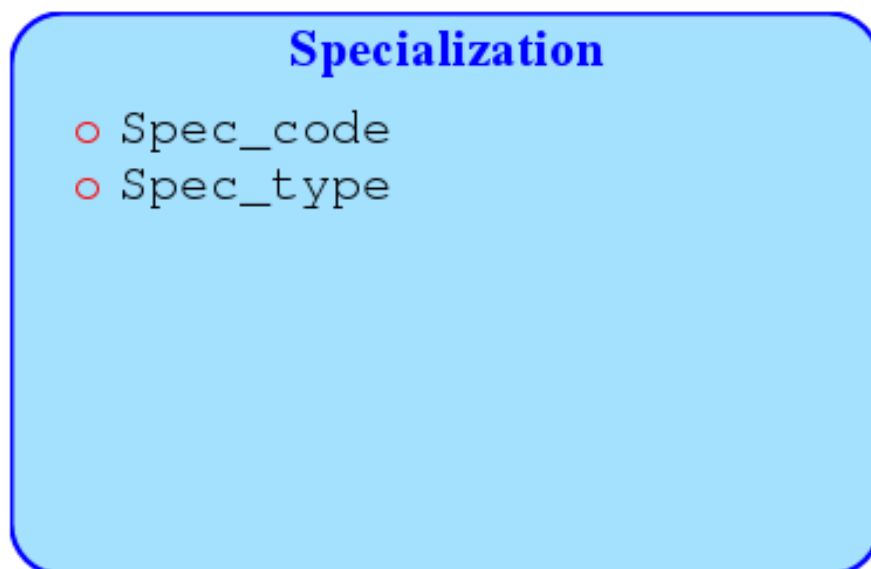This entity includes some information about student or parents applications.

Pic 5 – Application entity

1) **App_number** – The number of the application. **Data type** – numeric.
2) **App_type** – The type of the application ('complaint' , 'request' ...). **Data type** – text.

Specialization

This entity includes some information about student specialization.
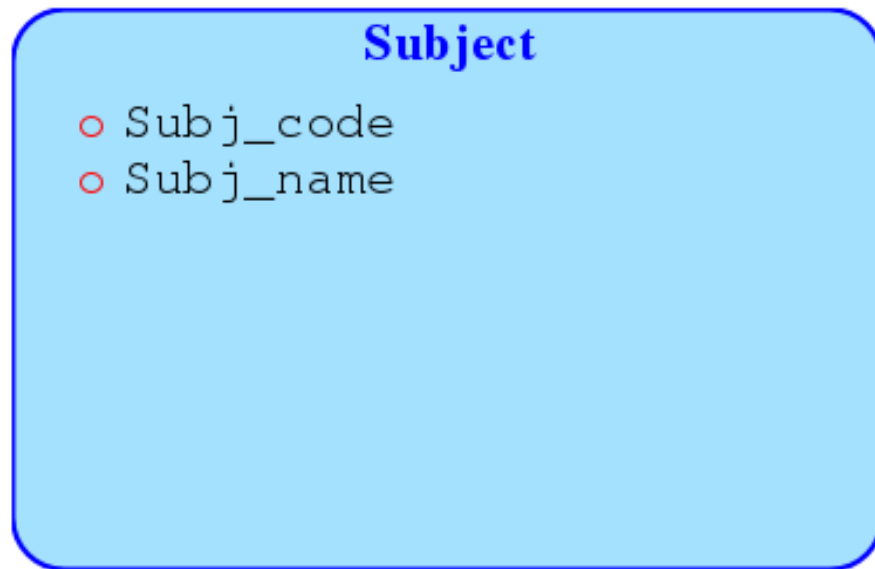

Pic 6 – Specialization entity

1) **Spec_code** – The ID of the student specialization. **Data type** – numeric.

2) **Spec_type** – The type of the specialization ('mathematical' , 'humanitarian' ...). **Data type** – text.

Subject

This entity includes some information about subjects, learning by student.

Pic 7 – Subject entity

1) **Subj_code** – The ID of the subject. **Data type** – numeric.
2) **Subj_name** – The title of the subject ('maths' , 'physics' ...). **Data type** – text.