The project I implemented is a demonstration of my knowledge of the Java programming language. Initially, it covers the requested topic, which is a zoo management application that records information about animals. The program includes a basic Animal class, which is abstract as instances cannot be created, and it defines the required fields (id, name, homotaxy, weight, and age) that are initialized through a constructor, except for the id, which is automatically generated when a new animal is added. In addition, there are 13 classes for different animals that inherit from Animal, and each animal class has a unique and distinct characteristic.

As for the various functions that are requested, I created a separate Zoo class, which implements the menu that is displayed in the console. The menu is managed using switch statements and provides 9+1 functionalities:

1. Display the available animals
2. Add a new animal
3. Search for an animal by name
4. Search for an animal by ID
5. Edit an animal by ID
6. Delete an animal by ID
7. Play with the animals
8. Get animal information from Wikipedia and display it as ASCII art
9. Exit
10. (extra) Display an ASCII landscape if the number 141 is entered (the first 3 digits of the number pi)

Various functions are achieved through different auxiliary methods, most of which rely on traversing a list via a foreach loop, as all animals are stored in a static ArrayList of type Animal since it is a superclass for each animal class. The individual functions are further analyzed within the code comments. Additionally, there is an interface that the Animal implements, and therefore, the remaining classes also extend the Animal. The interface contains two methods: one for the sound of each animal and one that displays the rarity of the animal in the specific zoo based on how many instances of the animal class we have created.

Furthermore, most methods are static since they are called in the main, which is static, and for this reason, every time a static method is called, I create an anonymous object that is used only for the method, and for this reason, I do not store any reference to it.

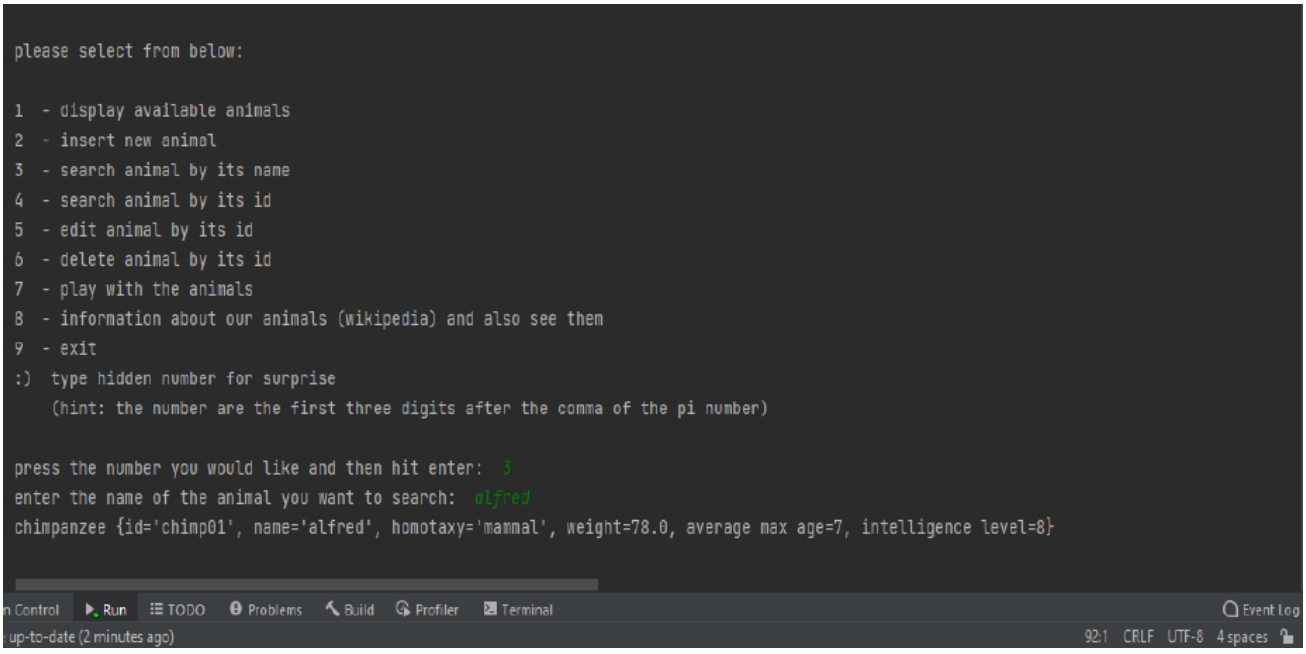
Continuing with the console output, I used the following try-catch block:

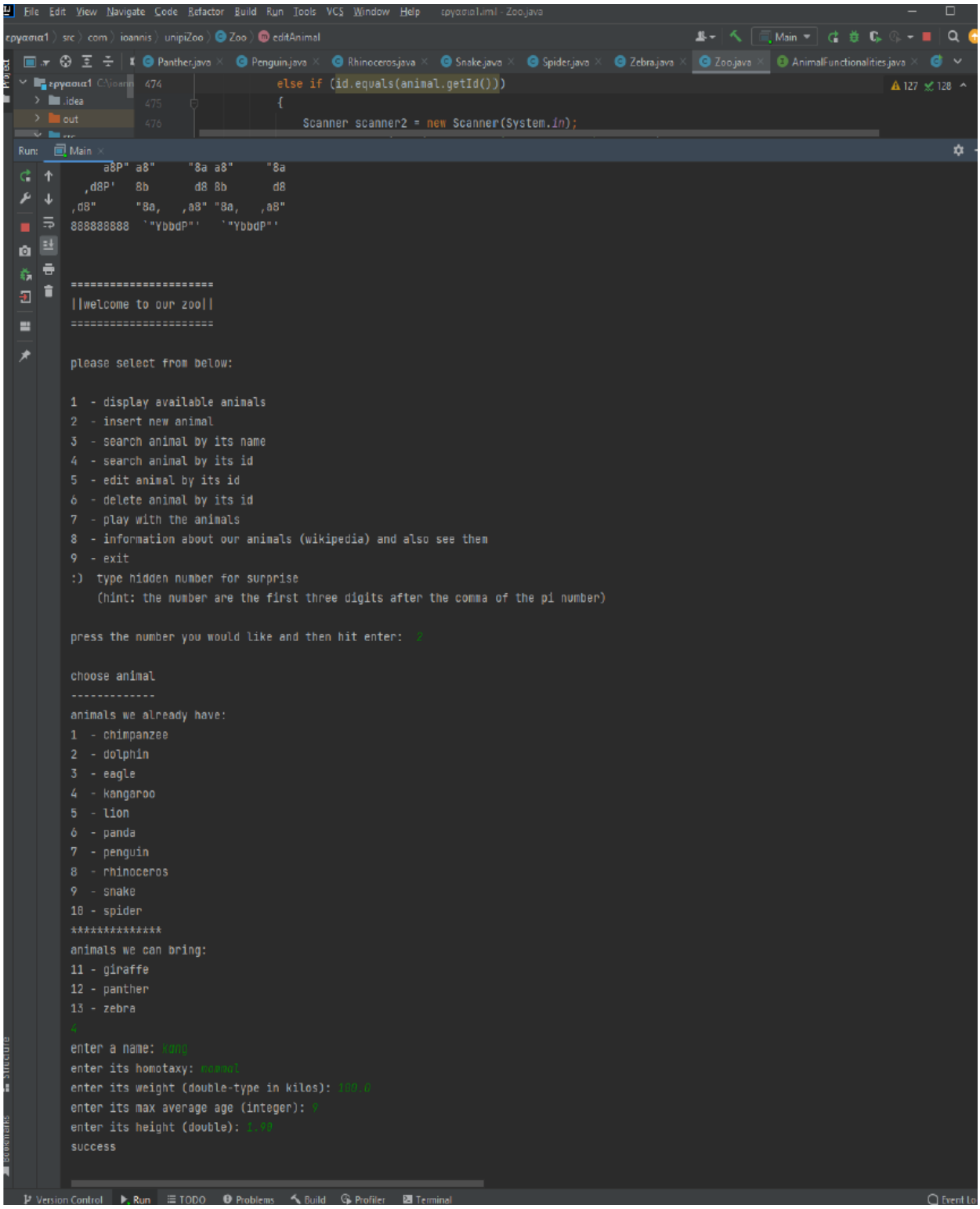
```
try {
    Thread.sleep(5000);
} catch (InterruptedException e) {
    e.printStackTrace();
}
```

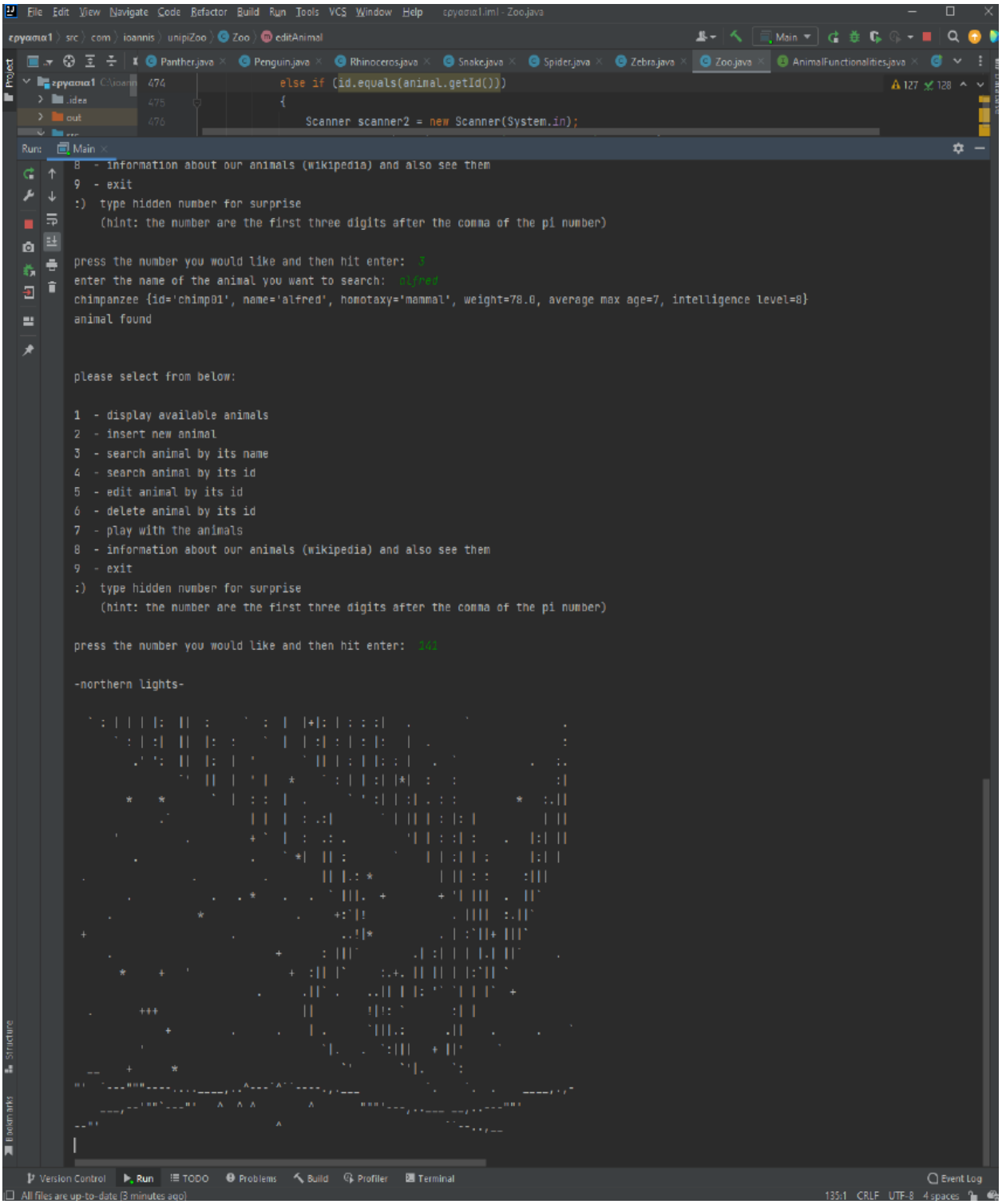
This stops the execution of the current thread for as many milliseconds as we define. This way, I managed to display information for a specific time on the console before the program execution continues, which is in a while(true) loop that only terminates if the user enters incorrect information in a field or presses 9 in the menu, which terminates the program. Each time the program runs, 10 indicative snapshots of animals are created, each from a different class.

Finally, the code is quite long (~3000 lines) due to the many classes with different characteristics, so each one required different handling. I did not use a GUI as I devoted a lot of time to creating a complete console experience, while also wanting to showcase the power of ASCII art and my aesthetics, which is why all output flows (console appearances) are written in lowercase and no capital letters (personal preference).

Screenshots




File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
εργασια1 - Zoo.java
εργασια1 › src › com › ioannis › unipiZoo › Zoo › editAnimal
Main
Panther.java
Penguin.java
Rhinoceros.java
Snake.java
Spider.java
Zebra.java
Zoo.java
AnimalFunctionalities.java
else if (id.equals(animal.getId()))
{
Scanner scanner2 = new Scanner(System.in);
Run: Main
a8P" a8" "8a a8" "8a
,d8P' 8b d8 8b d8
,d8" "8a, ,a8" "8a, ,a8"
888888888 `"YbbdP"' `"YbbdP"'
==========
||welcome to our zoo||
==========
please select from below:
1 - display available animals
2 - insert new animal
3 - search animal by its name
4 - search animal by its id
5 - edit animal by its id
6 - delete animal by its id
7 - play with the animals
8 - information about our animals (wikipedia) and also see them
9 - exit
:) type hidden number for surprise
(hint: the number are the first three digits after the comma of the pi number)
press the number you would like and then hit enter: 2
choose animal
---
animals we already have:
1 - chimpanzee
2 - dolphin
3 - eagle
4 - kangaroo
5 - lion
6 - panda
7 - penguin
8 - rhinoceros
9 - snake
10 - spider
****
animals we can bring:
11 - giraffe
12 - panther
13 - zebra
4
enter a name: Kang
enter its homotaxy: mammal
enter its weight (double-type in kilos): 100.0
enter its max average age (integer): 9
enter its height (double): 1.90
success
Version Control
Run
TODO
Problems
Build
Profiler
Terminal


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
εργασια1 - Zoo.java
εργασια1 › src › com › ioannis › unipiZoo › Zoo › editAnimal
Main
Panther.java
Penguin.java
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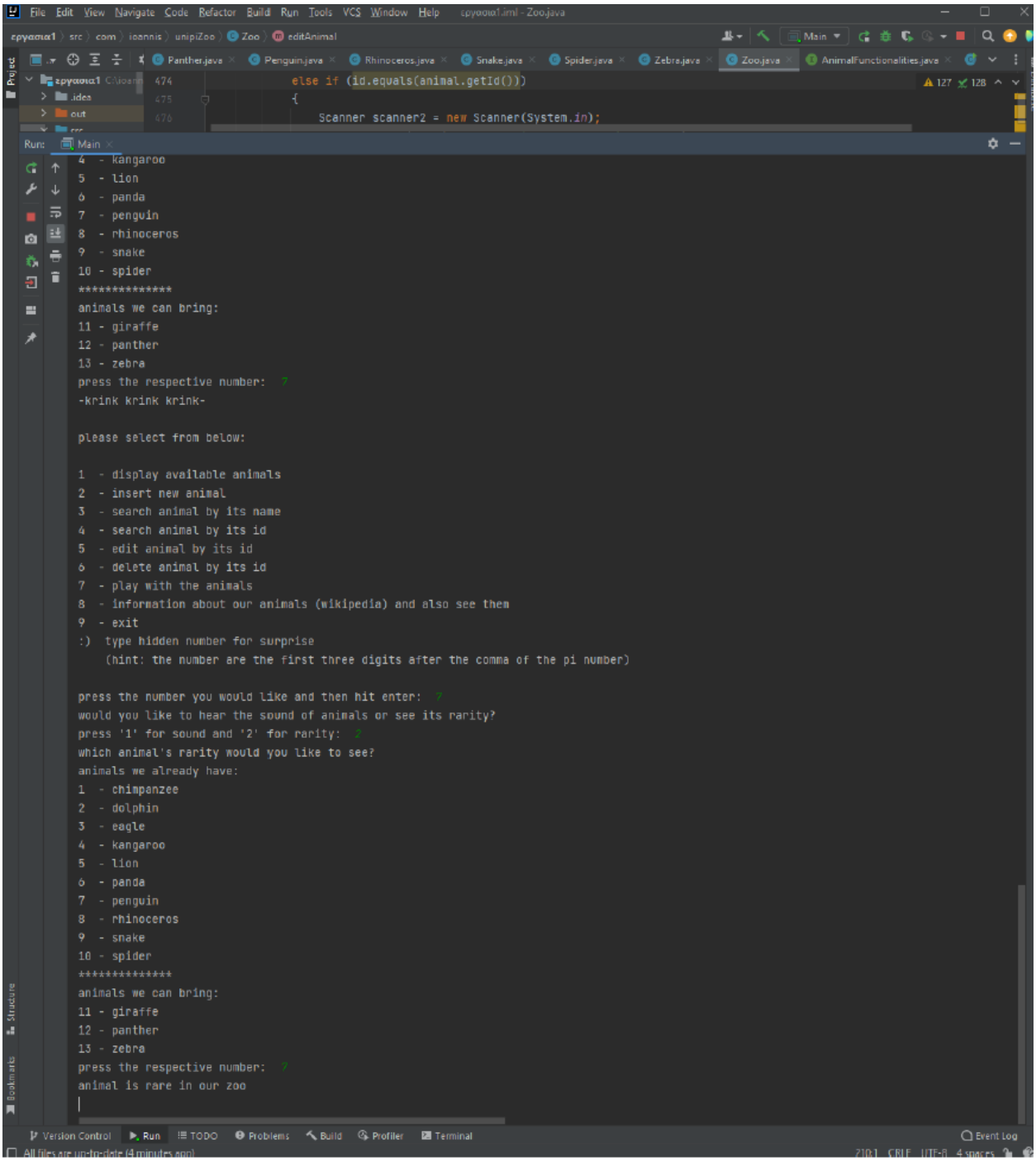
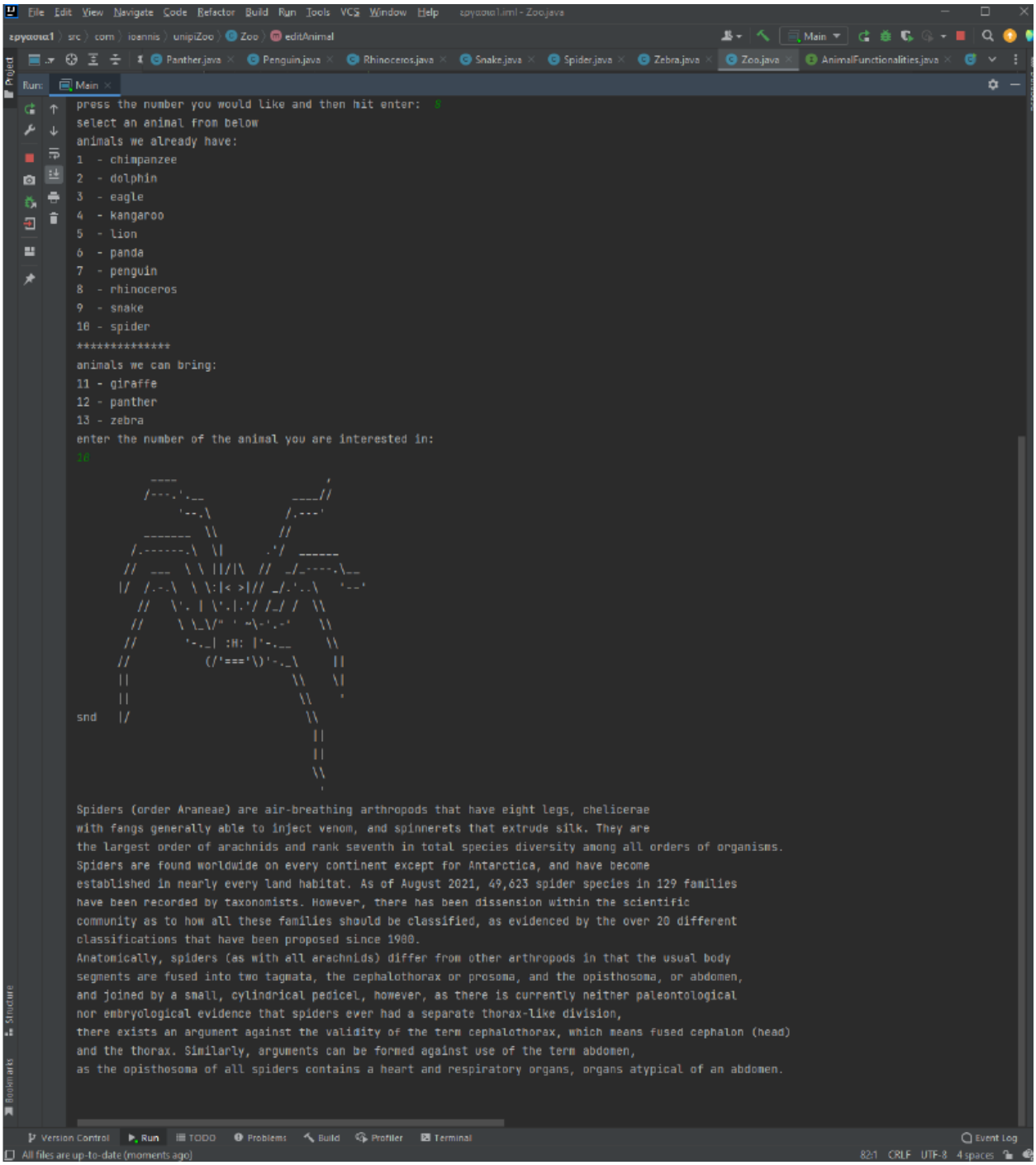
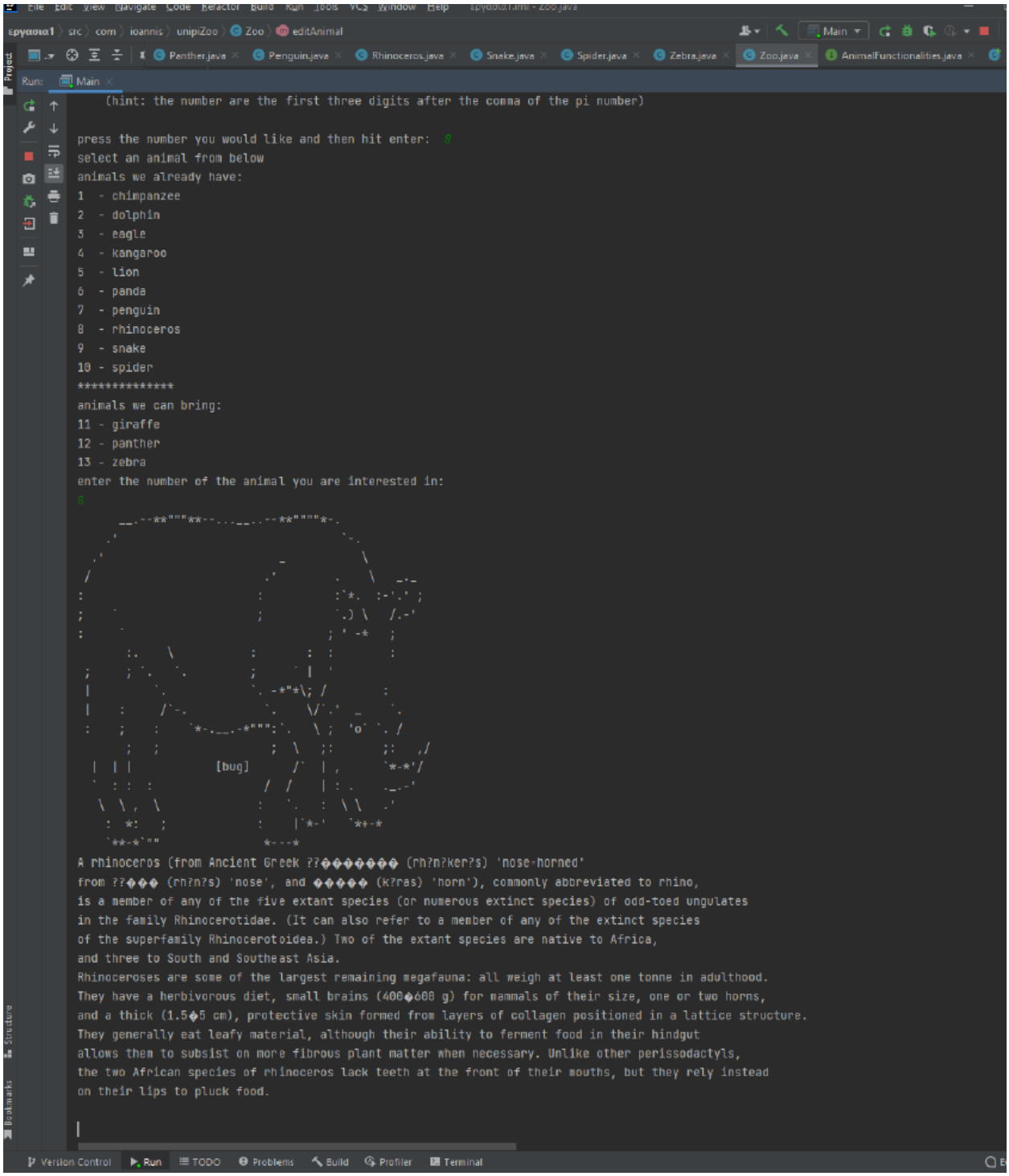
Spider.java
Zebra.java
Zoo.java
AnimalFunctionalities.java
else if (id.equals(animal.getId()))
{
Scanner scanner2 = new Scanner(System.in);
Run: Main
8 - information about our animals (wikipedia) and also see them
9 - exit
:) type hidden number for surprise
(hint: the number are the first three digits after the comma of the pi number)
press the number you would like and then hit enter: 7
enter the name of the animal you want to search: alfred
chimpanzee {id='chimp01', name='alfred', homotaxy='mammal', weight=78.0, average max age=7, intelligence level=8}
animal found
please select from below:
1 - display available animals
2 - insert new animal
3 - search animal by its name
4 - search animal by its id
5 - edit animal by its id
6 - delete animal by its id
7 - play with the animals
8 - information about our animals (wikipedia) and also see them
9 - exit
:) type hidden number for surprise
(hint: the number are the first three digits after the comma of the pi number)
press the number you would like and then hit enter: 141
-northern lights-
Version Control
Run
TODO
Problems
Build
Profiler
Terminal
Event Log
All files are up-to-date (3 minutes ago)
135:1 CRLF UTF-8 4 spaces


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
εργασια1 - Zoo.java
else if (id.equals(animal.getId()))
{
Scanner scanner2 = new Scanner(System.in);
Run: Main
4 - kangaroo
5 - lion
6 - panda
7 - penguin
8 - rhinoceros
9 - snake
10 - spider
****
animals we can bring:
11 - giraffe
12 - panther
13 - zebra
press the respective number: 7
-krink krink krink-
please select from below:
1 - display available animals
2 - insert new animal
3 - search animal by its name
4 - search animal by its id
5 - edit animal by its id
6 - delete animal by its id
7 - play with the animals
8 - information about our animals (wikipedia) and also see them
9 - exit
:) type hidden number for surprise
(hint: the number are the first three digits after the comma of the pi number)
press the number you would like and then hit enter: 7
would you like to hear the sound of animals or see its rarity?
press '1' for sound and '2' for rarity: 2
which animal's rarity would you like to see?
animals we already have:
1 - chimpanzee
2 - dolphin
3 - eagle
4 - kangaroo
5 - lion
6 - panda
7 - penguin
8 - rhinoceros
9 - snake
10 - spider
****
animals we can bring:
11 - giraffe
12 - panther
13 - zebra
press the respective number: 7
animal is rare in our zoo
Version Control
Run
TODO
Problems
Build
Profiler
Terminal
Event Log


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
εργασια1.iml - Zoo.java
εργασια1 src com ioannis unipiZoo Zoo editAnimal
Main
Panther.java Penguin.java Rhinoceros.java Snake.java Spider.java Zebra.java Zoo.java AnimalFunctionalities.java
Run: Main
press the number you would like and then hit enter: 8
select an animal from below
animals we already have:
1 - chimpanzee
2 - dolphin
3 - eagle
4 - kangaroo
5 - lion
6 - panda
7 - penguin
8 - rhinoceros
9 - snake
10 - spider
****
animals we can bring:
11 - giraffe
12 - panther
13 - zebra
enter the number of the animal you are interested in:
10
snd
Spiders (order Araneae) are air-breathing arthropods that have eight legs, chelicerae
with fangs generally able to inject venom, and spinnerets that extrude silk. They are
the largest order of arachnids and rank seventh in total species diversity among all orders of organisms.
Spiders are found worldwide on every continent except for Antarctica, and have become
established in nearly every land habitat. As of August 2021, 49,623 spider species in 129 families
have been recorded by taxonomists. However, there has been dissension within the scientific
community as to how all these families should be classified, as evidenced by the over 20 different
classifications that have been proposed since 1980.
Anatomically, spiders (as with all arachnids) differ from other arthropods in that the usual body
segments are fused into two tagmata, the cephalothorax or prosoma, and the opisthosoma, or abdomen,
and joined by a small, cylindrical pedicel, however, as there is currently neither paleontological
nor embryological evidence that spiders ever had a separate thorax-like division,
there exists an argument against the validity of the term cephalothorax, which means fused cephalon (head)
and the thorax. Similarly, arguments can be formed against use of the term abdomen,
as the opisthosoma of all spiders contains a heart and respiratory organs, organs atypical of an abdomen.
Version Control Run TODO Problems Build Profiler Terminal
Event Log
All files are up-to-date (moments ago)
82:1 CRLF UTF-8 4 spaces


(hint: the number are the first three digits after the comma of the pi number)
press the number you would like and then hit enter: 8
select an animal from below
animals we already have:
1 - chimpanzee
2 - dolphin
3 - eagle
4 - kangaroo
5 - lion
6 - panda
7 - penguin
8 - rhinoceros
9 - snake
10 - spider
****
animals we can bring:
11 - giraffe
12 - panther
13 - zebra
enter the number of the animal you are interested in:
8
[bug]
A rhinoceros (from Ancient Greek ??******** (rh?n?ker?s) 'nose-horned'
from ??*** (rh?n?s) 'nose', and ***** (k?ras) 'horn'), commonly abbreviated to rhino,
is a member of any of the five extant species (or numerous extinct species) of odd-toed ungulates
in the family Rhinocerotidae. (It can also refer to a member of any of the extinct species
of the superfamily Rhinocerotoidea.) Two of the extant species are native to Africa,
and three to South and Southeast Asia.
Rhinoceroses are some of the largest remaining megafauna: all weigh at least one tonne in adulthood.
They have a herbivorous diet, small brains (400–600 g) for mammals of their size, one or two horns,
and a thick (1.5–5 cm), protective skin formed from layers of collagen positioned in a lattice structure.
They generally eat leafy material, although their ability to ferment food in their hindgut
allows them to subsist on more fibrous plant matter when necessary. Unlike other perissodactyls,
the two African species of rhinoceros lack teeth at the front of their mouths, but they rely instead
on their lips to pluck food.