



Министерство науки и высшего образования Российской Федерации
Федеральное государственное бюджетное образовательное
учреждение высшего образования
«Московский государственный технический университет имени
Н. Э. Баумана
(национальный исследовательский университет)»
(МГТУ им. Н. Э. Баумана)

ФАКУЛЬТЕТ «Информатика, искусственный интеллект и системы управления»

КАФЕДРА «Программное обеспечение ЭВМ и информационные технологии»

Отчёт по лабораторной работе № 8 по курсу «Функциональное и логическое программирование»

Тема Среда Visual Prolog

Студент Калашков П. А.

Группа ИУ7-66Б

Оценка (баллы) _____

Преподаватели Толпинская Н. Б., Строганов Ю. В.

Листинг 1 – Листинг программы

```
1 domains
2   surname = string .
3   phone = integer .
4   city = string .
5   street = string .
6   house = integer .
7   flat = integer .
8   mark = string .
9   color = string .
10  price = integer .
11  carnumber = string .
12  address = addr(city , street , house , flat) .
13  area = integer .
14  floors = integer .
15  region = string .
16  bankname = string .
17  account = integer .
18  amount = integer .
19  experience = integer .
20  buildingname = string .
21  sitename = string .
22  watervehiclename = string .
23  propertyName = string .
24  propertyType = string .
25
26  propertyItem =
27    auto(propertyName , color , price , carnumber);
28    building(propertyName , price , area , floors);
29    site(propertyName , price , area , region);
30    water_vehicle(propertyName , price , mark , color) .
31
32
33 predicates
34   record(surname , phone , address)
35   property(surname , propertyItem)
36   bank(surname , bankname , amount , account , experience)
37
38   property_by_surname(surname , propertyName)
39   property_and_price_by_surname(surname , propertyName , price)
```

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40 sum_of_prop_price_by_surname(surname, price)
41 get_prop_price(surname, propertyType, price)
42
43 clauses
44 record("Ivanov", 1, addr("Maloyaroslavets", "A", 1, 2)).
45 record("Ivanov", 4, addr("Maloyaroslavets", "A", 1, 2)).
46 record("Petrov", 9, addr("Moscow", "Brusilova", 3, 4)).
47 record("Sidorov", 16, addr("Moscow", "Brusilova", 5, 6)).
48 record("Sidorov", 25, addr("Moscow", "Brusilova", 5, 6)).
49 record("Phedorov", 36, addr("Moscow", "Donskoy_6", 7, 8)).
50 record("Phedorov", 49, addr("Moscow", "Donskoy_6", 7, 8)).
51 record("Ivanov", 64, addr("Mars", "Earth", 9, 10)).
52
53 property("Ivanov", auto("lada", "violet", 150000, "aa000a")).
54 property("Petrov", auto("mers", "black", 2000000, "aa002a")).
55 property("Sidorov", auto("volga", "rusty", 10000, "bb003b")).
56 property("Phedorov", auto("ferra", "red", 15000000, "dd005d")).
57 property("Kalashkov", auto("bicycle", "white", 150000, "ff007f")).
58 property("Kalashnikov", auto("tank", "black", 155500, "gg008g")).
59
60 property("Ivanov", building("box", 1000, 1, 1)).
61 property("Pertov", building("house", 10000000, 250, 3)).
62
63 property("Petrov", site("dacha", 6000000, 600, "Podmoskovie")).
64 property("Sidorov", site("fields", 900000000, 50000, "Siberia")).
65
66 property("Sidorov", water_vehicle("waterbike", 100000, "honda",
67     "black")).
68 property("Phedorov", water_vehicle("yacht", 80000000, "yamaha",
69     "blue")).
70
71 bank("Ivanov", "Sberbank", 100000, 10000, 3).
72 bank("Petrov", "VTB", 10000000, 99999, 15).
73 bank("Sidorov", "Centralbank", 150000, 1000, 20).
74 bank("Phedorov", "Tinkoff", 8800555, 500000, 1).
75
76 property_by_surname(Surname, PropertyName):—
77     property(Surname, auto(PropertyName, _, _, _));
78     property(Surname, building(PropertyName, _, _, _));
79     property(Surname, site(PropertyName, _, _, _));
80     property(Surname, water_vehicle(PropertyName, _, _, _)).

```

```

79
80 property_and_price_by_surname(Surname, PropertyName, Price):-
81     property(Surname, auto(PropertyName, _, Price, _));
82     property(Surname, building(PropertyName, Price, _, _));
83     property(Surname, site(PropertyName, Price, _, _));
84     property(Surname, water_vehicle(PropertyName, Price, _, _)).
85
86 get_prop_price(Surname, auto, Price) :-
87     property(Surname, auto(_, _, Price, _)), !.
88 get_prop_price(Surname, building, Price) :-
89     property(Surname, building(_, Price, _, _)), !.
90 get_prop_price(Surname, site, Price) :-
91     property(Surname, site(_, Price, _, _)), !.
92 get_prop_price(Surname, water_vehicle, Price) :-
93     property(Surname, water_vehicle(_, Price, _, _)), !.
94 get_prop_price(_, _, 0).
95
96 sum_of_prop_price_by_surname(Surname, Price):-
97     get_prop_price(Surname, auto, AutoPrice),
98     get_prop_price(Surname, building, BuildingPrice),
99     get_prop_price(Surname, site, SitePrice),
100    get_prop_price(Surname, water_vehicle, WVPrice),
101    Price = AutoPrice + BuildingPrice + SitePrice + WVPrice.
102
103
104 goal
105 %property_by_surname("Ivanov", PropertyName).
106 %property_and_price_by_surname("Ivanov", PropertyName, Price).
107 %sum_of_prop_price_by_surname("Ivanov", Total).
108 %get_prop_price("Ivanov", auto, AutoPrice).

```

Поясняющая таблица для:

`property_and_price_by_surname("Ivanov", PropertyName, Price).`