ФАКУЛЬТЕТ «Информатика и системы управления»

КАФЕДРА «Программное обеспечение ЭВМ и информационные технологии»

ОТЧЕТ

по лабораторной работе № 8
по курсу «Функциональное и логическое программирование»
на тему: «Среда Visual Prolog»

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1 Практические задания

Листинг 1.1 – Текст программы (начало)

```
domains
    % phonebook
    surname = symbol
    phone = string

    % address
    city, street = symbol
    num_house, num_flat = integer
    addr = address(city, street, num_house, num_flat)

    % depositors
    bank = symbol
    account, amount = integer.

    % property
    area, floors, price = integer
    brand, color = symbol
    number = string
    title = string

    property = car(title, brand, color, price, number);
               building(title, price, area, floors);
               site(title, price, area);
                    water_vehicle(title, price, brand, color).

        type = string

predicates
    phonebook(surname, phone, addr)
    owner(surname, property)
    depositor(surname, bank, account, amount)

    property_title(property, title)
    property_title_price(property, title, price)

    properties_title_by_surname(surname, title)
    properties_title_price_by_surname(surname, title, price)
```

```
    cost(surname, type, price).
    totalPropertyPrice(surname, price).

clauses
    phonebook(lystsev, "8(931)402-25-94", address(arkhangelsk,
        voskresenskaya, 5, 32)).
    phonebook(voloshenko, "8(964)291-56-88", address(mirnyy,
        galushino, 2, 134)).
    phonebook(sidorov, "8(921)672-17-05", address(arkhangelsk,
        varavino, 7, 13)).
    phonebook(lystseva, "8(960)003-29-16", address(arkhangelsk,
        tverskaya, 46, 27)).
    phonebook(lystseva, "8(921)670-75-54", address(arkhangelsk,
        tverskaya, 46, 27)).
    phonebook(lystseva, "8(921)488-54-89", address(arkhangelsk,
        tverskaya, 46, 27)).
    phonebook(malyshev, "8(945)567-19-94", address(moscow,
        tsvetnoy_boulevard, 17, 45)).
    phonebook(frolova, "8(934)396-15-47",
        address(saintPetersburg, altai, 34, 96)).
    phonebook(shcherbakova, "8(915)711-23-17",
        address(saint_petersburg, altai, 34, 98)).

    depositor(lystsev, sberbank, 34566, 10).
    depositor(lystsev, vtb, 59321, 17).
    depositor(voloshenko, tinkoff, 14468, 56).
    depositor(lystseva, sberbank, 45221, 453).
    depositor(malyshev, pochtabank, 83412, 454).
    depositor(frolova, sberbank, 43545, 67).
    depositor(shcherbakova, sberbank, 76864, 32).

    owner(lystsev, car("strange", nissan, black, 3000000,
        "M704XC790")).
    owner(lystsev, site("farm", 3000000, 3000)).
    owner(lystsev, water_vehicle("jet_ski", 500000, honda,
        black)).

    owner(shcherbakova, car("pinkie", mercedes, ping, 5000000,
        "P777AA774")).
```

Листинг 1.3 – Текст программы (продолжение)

```
owner(shcherbakova, building("equestria", 10000000, 6000,
    4)).

owner(frolova, car("D", audi, burgundy, 2500000,
    "S042GB562")).
owner(frolova, building("house", 5000000, 234, 2)).

owner(lystseva, car("crossover", mitsubishi, grey, 1500000,
    "F001VS148")).
owner(lystseva, site("farm2", 1000000, 150)).

owner(sidorov, car("F", mazda, black, 3500000, "W042BM342")).
owner(sidorov, water_vehicle("cruiser", 150000, yamaha,
    red)).

property_title(car(Title, _, _, _, _), Title).
property_title(building(Title, _, _, _), Title).
property_title(site(Title, _, _), Title).
property_title(water_vehicle(Title, _, _, _), Title).

property_title_price(car(Title, _, _, Price, _), Title,
    Price).
property_title_price(building(Title, Price, _, _), Title,
    Price).
property_title_price(site(Title, Price, _), Title, Price).
property_title_price(water_vehicle(Title, Price, _, _),
    Title, Price).

properties_title_by_surname(Surname, Title) :-
    owner(Surname, Property), property_title(Property, Title).

properties_title_price_by_surname(Surname, Title, Price) :-
    owner(Surname, Property), property_title_price(Property,
    Title, Price).

cost(Surname, "car", Cost) :- owner(Surname, car(_, _, _,
    Cost, _)), !.
cost(Surname, "building", Cost) :- owner(Surname,
    building(_, Cost, _, _)), !.
```

Листинг 1.4 – Текст программы (конец)

```
    cost(Surname, "site", Cost) :- owner(Surname, site(_, Cost,
        _)), !.
    cost(Surname, "water", Cost) :- owner(Surname,
        water_vehicle(_, Cost, _, _)), !.
    cost(_, _, 0).

    totalPropertyPrice(Surname, Price) :-
    cost(Surname, "car", CarPrice),
    cost(Surname, "building", BuildingPrice),
    cost(Surname, "site", SitePrice),
    cost(Surname, "water", WaterPrice),
    Price = CarPrice + BuildingPrice + SitePrice + WaterPrice.
goal
    % properties_title_by_surname(lystsev, Name).
    % properties_title_price_by_surname(shcherbakova, Title,
        Price).

    totalPropertyPrice(sidorov, TotalPrice).
```