**Ход работы**

**ЧАСТЬ 1**

**ТАБЛИЦА UML**

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| << class >>  VEHICLE |  | << class >>  CAR |
| #string number;  #double speed;  #double weight;  #double acceleration; |  |  |
| << Конструкторы >>  +VEHICLE(string number, double weight, +double acceleration);  << Методы >>  +void GASS(double time);  +void STOP(double time);  << Друзья >>  +friend int COMPARE\_SPEED(const class CAR& obj1, const class TRACK& obj2); |  | << Конструкторы >>  +CAR(string number, double weight, double acceleration); |
| Класс-родитель, содержащий стандартные функции для описания управления транспортом при прямолинейном движении. |  | Класс описывающий поведение легкового автомобиля при прямолинейном движении. |
|  |  |  |
| << class >>  TRACK |  |
| -double track\_weight;  -double trailer\_weight; |  |
| << Конструкторы >>  +TRACK(string number, double track\_weight, double trailer\_weight, double acceleration); |  |
| Класс описывающий поведение грузового автомобиля с прицепом при прямолинейном движении. |  |

**MAIN и ВЫВОД**

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| int main()  {  CAR car("8682 AX-3", 1000, 3.2);  TRACK track("6446 II-2", 1700, 2000, 2.3);  car.GASS(10); track.GASS(25); \_SPEED(car, track);  track.STOP(15); COMPARE\_SPEED(car, track);  car.STOP(99999); track.STOP(99999); \_SPEED(car, track);  } |
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**РЕАЛИЗАЦИИ МЕТОДОВ**

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| **VEHICLE** |
| // Конструкторы  VEHICLE::VEHICLE(string number, double weight, double acceleration) : speed(0.0) {  this->number = number; this->weight = weight; this->acceleration = acceleration; }  // Методы  void VEHICLE::GASS(double time) { speed += acceleration \* time; }  void VEHICLE::STOP(double time) { speed -= acceleration \* time; if (speed < 0) speed=0; }  // Друзья  int COMPARE\_SPEED(const CAR& obj1, const TRACK& obj2) {  if (obj1.speed > obj2.speed) {  cout << "The speed(" << obj1.speed <<  ") of car(" << obj1.number << ") is more than track's(" << obj2.number <<  ") speed(" << obj2.speed << ")." << endl;  return 1;  }  if (obj1.speed < obj2.speed) {  cout << "The track's(" << obj2.number << ") speed(" << obj2.speed <<  ") is more than speed(" << obj1.speed <<  ") of car(" << obj1.number << ")." << endl;  return 2;  }  cout << "The speeds(" << obj1.speed << ") of this vehicles(" << obj1.number <<  ' ' << obj2.number << ") are equal." << endl;  return 0;  } |
| **CAR** |
| // Конструкторы  CAR::CAR(string number, double weight, double acceleration) : VEHICLE(number, weight, acceleration) {} |
| **TRACK** |
| TRACK::TRACK(string number, double track\_w, double trailer\_w, double acceleration) : VEHICLE(number, weight, acceleration) {  track\_weight = track\_w;  trailer\_weight = trailer\_w;  } |