| Main |
| --- |
| +main(args: string[]): void |

| GameFrame |
| --- |
| panel: GamePanel |
| +GameFrame(): null |

| GamePanel → Runnable, KeyListener |
| --- |
| gameThread: Thread  +GAME\_WIDTH: int  +GAME\_HEIGHT: int  pixelsPerMeter: 50  image: Image  minimap: Image  graphics: Graphics  player: RaceCompetitor |

| Rectangle |
| --- |

| Car |
| --- |
| +description: String  +carName: String  +maxTireGrip: double  +maxBrake: double  +maxAccelB: double  +maxAccelM: double  +turnRadius: double +maxDamage: double  +carImage: Image |
| +Car(): void  +calculateAngularVelocity(double speed): double  +calculateAcceleration(double speed): double |

| RaceCompetitor |
| --- |
| +raceCar: Car  +acceldir: int  +forwardSpeed: double  +AngularVelocity: double  +username: string  +centerx: double  +centery: double  +carAngle: double  +carTurnSpeed: double  +reverseGearEngaged: boolean |
| +RaceCompetitor(int x, int y, car currentCar):void  +keyPressed(KeyEvent e):void  +keyReleased(KeyEvent e):void  +draw(Graphics g): void  +move():void |

| AIRaceCompetitor → Rectangle |
| --- |
| +raceCar: Car  +acceldir: int  +forwardSpeed: double  +AngularVelocity: double  +username: string  +centerx: double  +centery: double  +carAngle: double  +carTurnSpeed: double  +reverseGearEngaged: boolean  +racePosition:double  +racing\_line\_list: Arraylist<Arraylist<double>> |
| +AIRaceCompetitor(raceCar car, double positionx, double positiony):void  +calcNextMove(): void  +draw(Graphics g): void  +move():void |

| RaceTrack |
| --- |
| +dlcTrackPath: String  +competitors: ArrayList<RaceCompetitor>  +pixelPrefixSum: int[ ][ ] +imageBufferMatrix: ArrayList<ArrayList<BufferedImage>  +startingGridXPositions: ArrayList<int>  +startingGridYPositions: ArrayList<int> |
| +RaceTrack(String dlcTrackPath): void  +raceTick(): int  +checkCollissions():void  +draw(Graphics g): void |