Advertisement -adld: int -title: string -description: string -costPerDay: double -startDate: string -endDate: string -isActive: bool +Advertisement(id: int = 0, active: bool = true) +~Advertisement() +getAdId(): int +getTitle(): string

t: string = "", desc: string = "", cost: double = 0.0, start: string = "", end: string = "", +getDescription(): string +getCostPerDay(): double +getStartDate(): string +getEndDate(): string +getIsActive(): bool +setAdId(id: int): void +setTitle(t: string): void +setDescription(desc: string): void +setCostPerDay(cost: double): void +setStartDate(date: string): void +setEndDate(date: string): +setIsActive(active: bool): +getAdType(): string +displayInfo(): void +operator==(other: Advertisement): bool +toJSON(): json

DigitalAd

+fromJSON(j: json): void

 \triangleleft

-screenLocation: string -durationInSeconds: int

+DigitalAd(id: int = 0, t: string "", desc: string = "", cost: doı = 0.0, start: string = "", end: string = "", active: bool = true loc: string = "", duration: int =

+getScreenLocation(): string +getDurationInSeconds(): in +setScreenLocation(loc: stri

+setDurationInSeconds(dura int): void

+getAdType(): string +displayInfo(): void +toJSON(): json +fromJSON(j: json): void

PrintAd

-location: string -size: string

+PrintAd(id: int = 0, t: string = "", desc: string = "", cost: double = 0.0, start: string = ', end: string = "", active: bool = true, loc: string = "", sz: string = "") +getLocation(): string +getSize(): string

+setLocation(loc: string): void +setSize(sz: string): void +aetAdTvpe(); strina

+displayInfo(): void +toJSON(): json +fromJSON(j: json): void Mall

AdvertisementSystem

-advertisements: vector<Advertisement*> -advertisers: vector<Advertiser*> -mall: Mall* -instance: AdvertisementSystem*

+AdvertisementSystem()

+getInstance(): Advertiseme +~AdvertisementSystem() +addAdvertisement(ad: Adve

+findAdvertisementById(id: i Advertisement*

+displayAllAdvertisements(): +getAdvertisements():

vector<Advertisement*>& +addAdvertiser(advertiser: A

+findAdvertiserById(id: int): / +displayAllAdvertisers(): voi: +getAdvertisers(): vector<Ac +saveAdvertisementDataTof string): void

+loadAdvertisementDataFro string): void



Advertiser

-advertiserId: int -name: string -contactPerson: string -email: string -phone: string

+Advertiser(id: int = 0, n: string = "", contact: string = "", em: string = "", ph: string

+getAdvertiserId(): int +getName(): string

+getContactPerson(): string +getEmail(): string

+getPhone(): string +setAdvertiserId(id: int): void

+setName(n: string): void +setContactPerson(contact: string): void

+setEmail(em: string): void +setPhone(ph: string): void

+displayInfo(): void +operator==(other:

Advertiser): bool +toJSON(): json

+fromJSON(j: json): void

Advertisement Stats

-ads: vector<Advertisement*>* -advertisers: vector<Advertiser*>* -instance: AdvertisementStats<T>*

+AdvertisementStats(a: vector<Advertisement*>* = nullptr, adv: vector<Advertiser*>* = nullptr) +getInstance(a: vector<Advertisement*>* = nullptr, adv: vector<Advertiser*>* = nullptr): AdvertisementStats<T>* +setData(a: vector<Advertisement*>*, adv: vector<Advertiser*>*): void +calculateAverageRevenue(): T +displayStatistics(): void +countActiveAds(): int

Parking System

-parkingSpots: vector<ParkingSpot*> -vehicles: vector<Vehicle*> -tickets: vector<ParkingTicket*>

-mall: Mall^{*} -instance: ParkingSystem*

+ParkingSystem()

+getInstance(): ParkingSyste

+~ParkingSystem()

+addParkingSpot(spot: Park

+findParkingSpotById(id: int) ParkingSpot*

+displayAllParkingSpots(): v +getParkingSpots():

vector<ParkingSpot*>&

+addVehicle(vehicle: Vehicle +findVehicleByLicensePlate(

string): Vehicle* +displayAllVehicles(): void +getVehicles(): vector<Vehic

+addTicket(ticket: ParkingTic

+findTicketById(id: int): ParkingTicket* +findActiveTicketByLicenseF

string): ParkingTicket* +displayAllTickets(): void

+getTickets(): vector<ParkingTicket*>& +findAvailableSpot(): Parkin +saveParkingDataToFile(file

string): void +loadParkingDataFromFile(f string): void



Parking Spot

-spotId: int -isOccupied: bool -location: string

+ParkingSpot(id: int = 0, occupied: bool = false, loc: string = "") +~ParkingSpot() +getSpotId(): int +getIsOccupied(): bool +getLocation(): string +setSpotId(id: int): void +setIsOccupied(occupied: bool): void +setLocation(loc: string):

+getRate(): double

+displayInfo(): void +operator==(other: ParkingSpot): bool

+toJSON(): ison

+fromJSON(j: json): void

ParkingTicket

-ticketId: int -entryTime: string -exitTime: string -amountPaid: double -spotId: int -licensePlate: string -active: bool

+ParkingTicket(id: int = 0, entry: string = "", exit: string = "", amount: double = 0.0, spot: int = 0, plate: string = "", isActive: bool = true)

+getTicketId(): int

+getEntryTime(): string

+getExitTime(): string +getAmountPaid(): double

+getSpotId(): int

+getLicensePlate(): string

+isActive(): bool

+setTicketId(id: int): void

+setEntryTime(time: string): void +setExitTime(time: string): void

+setAmountPaid(amount: double): void +setSpotId(id: int): void

+setLicensePlate(plate: string): void

+setActive(isActive: bool): void

+displayInfo(): void

+toJSON(): json +fromJSON(j: json): void

Vehicle

-licensePlate: string -vehicleType: string

+Vehicle(plate: string = "", type: string = "Car") +getLicensePlate(): string +getVehicleType(): string +setLicensePlate(plate: string): void

+setVehicleType(type: string): void

+displayInfo(): void +operator==(other: Vehicle):

bool +toJSON(): json

+fromJSON(j: json): void