ПРИЛОЖЕНИЕ А
(справочное)

Листинг кода класса `TextFeedParser`

```
      public class TextFeedParser : IFeedParser
      {
            private static readonly Logger Logger =
LogManager.GetCurrentClassLogger();
            private readonly char _delimiter;

            public TextFeedParser(char delimiter)
            {
                  _delimiter = delimiter;
            }

            public IObservable<ProcessingResult<FeedItem>> Parse(TextReader
reader, FeedItemScheme scheme)
            {
                  if (reader == null)
                  {
                        throw new ArgumentNullException("reader");
                  }

                  if (scheme == null)
                  {
                        throw new ArgumentNullException("scheme");
                  }

                  return Observable.Create<ProcessingResult<FeedItem>>(
                        observer =>
                        {
                              Logger.Info("Starting '{0}'-delimited feed file
parsing".f(_delimiter));

                              ParseImpl(observer, reader, scheme);

                              Logger.Info("Feed file parsing finished.");

                              return Disposable.Empty;
                        });
            }

            private void ParseImpl(IObserver<ProcessingResult<FeedItem>>
observer,
                                          TextReader reader,
                                          FeedItemScheme scheme)
            {
                  var headerStr = ReadHeader(reader);
                  if (headerStr == null)
                  {
                        const string error = "Empty feed file. But expected
header at least.";
                        OnFatalError(observer, error);
```

```
                        return;
                    }

                    var headerParsingResult = ParseHeader(headerStr, scheme);
                    if (!headerParsingResult.IsValid)
                    {
                        var error = String.Join(", ",
headerParsingResult.Errors);
                        OnFatalError(observer, error);

                        return;
                    }

                    var header = headerParsingResult.Result;
                    ParseBody(observer, reader, scheme, header);

                    observer.OnCompleted();
                }

                private static string ReadHeader(TextReader reader)
                {
                    string result;
                    do
                    {
                        result = reader.ReadLine();
                    } while (
                        result != null &&
                        String.IsNullOrWhiteSpace(result)
                        );

                    return result;
                }

                private ProcessingResult<ParsedHeader> ParseHeader(string
headerStr, FeedItemScheme scheme)
                {
                    Logger.Debug("Parsing feed file header.");

                    var fields = headerStr.Split(_delimiter,
StringSplitOptions.None)
                                                    .ToReadOnlyCollection();

                    var header = new ParsedHeader(fields);
                    var errors = ValidateHeader(header, scheme);

                    return ProcessingResult.Create(header, errors);
                }

                private static IEnumerable<string> ValidateHeader(ParsedHeader
header, FeedItemScheme scheme)
                {
                    var errors = new List<string>();

                    var expectedFields = scheme.FieldNames.ToHashSet();
                    var missingFields = expectedFields;
```

```
                var excessFields = new List<string>();

                foreach (var headerField in header.Fields)
                {
                      if (!expectedFields.Contains(headerField))
                      {
                            excessFields.Add(headerField);
                      }
                      else
                      {
                            missingFields.Remove(headerField);
                      }
                }

                if (!missingFields.IsEmpty())
                {
                      var errorBuilder = new StringBuilder("File header
isn't fitting expected scheme.");
                      if (!missingFields.IsEmpty())
                      {
                            missingFields.Aggregate(
                                  errorBuilder.Append(" Missing fields:"),
                                  (acc, cur) => acc.AppendFormat("{0}, ",
cur));

                            Logger.Debug(header.ToString());
                      }

                      var error = errorBuilder.ToString();
                      errors.Add(error);
                }

                return errors;
          }

          private void ParseBody(IObserver<ProcessingResult<FeedItem>>
observer,
                                       TextReader reader,
                                       FeedItemScheme itemScheme,
                                       ParsedHeader header)
          {
                Logger.Debug("Parsing feed file body.");

                reader.AsEnumerable()
                      .WhereNot(String.IsNullOrWhiteSpace)
                      .ForEach(
                            line =>
                            {
                                  Logger.Debug("Parsing next feed item.");

                                  var lineParsingResult = ParseLine(line,
header);
                                  if (!lineParsingResult.IsValid)
                                  {
                                        var errors =
lineParsingResult.Errors;
```

```
                                          var parsedFeedItem =
ProcessingResult.Create<FeedItem>(null, errors);
                                          observer.OnNext(parsedFeedItem);
                                    }
                                    else
                                    {
                                          var parsedLine =
lineParsingResult.Result;
                                          var parsedFeedItem =
CreateItem(parsedLine, itemScheme);
                                          observer.OnNext(parsedFeedItem);
                                    }
                              });
            }

            private ProcessingResult<ParsedLine> ParseLine(string line,
ParsedHeader header)
            {
                  var values = line.Split(_delimiter,
StringSplitOptions.None);

                  if (values.Length != header.FieldsCount)
                  {
                        var error =
                              (values.Length > header.FieldsCount
                                    ? ("Excess values in line '{0}'. " +
                                       "Expected '{1}' values, but found '{2}'
values.")
                                    : ("Lack of values in line '{0}'. " +
                                       "Expected '{1}' values, but found '{2}'
values.")
                                    ).f(line,
                                          header.FieldsCount,
                                          values.Length);

                        return ProcessingResult.Create<ParsedLine>(null, new[]
{error});
                  }

                  var fields = header.Fields
                                          .Zip(values,
                                                (name, value) =>
                                                {

      Logger.Trace("'{0}' field parsed.".f(name));

                                                      return new
ParsedField(name, value);
                                                })
                                          .ToReadOnlyCollection();

                  var parsedLine = new ParsedLine(fields);

                  return ProcessingResult.Create(parsedLine);
            }
```

```
            private static ProcessingResult<FeedItem> CreateItem(ParsedLine
line, FeedItemScheme scheme)
            {
                  var errors = new List<string>();

                  var item = line.Fields
                                        .AggregateSafe(
                                              seed: new FeedItem(scheme),
                                              func: (acc, field) =>
                                                    {
                                                          return
scheme.IsFieldNameDefined(field.Name)
                                                                ?
acc.WithFieldValue(field.Name, field.Value.Trim())
                                                                : acc;
                                                    },
                                              onError: (cur, ex) =>
                                                          {
                                                                var error =
("Error while setting feed item '{0}' " +

       "field value. {1}").f(cur.Name,

                                        ex.Message);


      errors.Add(error);

      Logger.InfoException(error, ex);
                                                    });

                  return ProcessingResult.Create(item, errors);
            }

            private static void
OnFatalError(IObserver<ProcessingResult<FeedItem>> observer, string message)
            {
                  var error = "Feed file parsing error: {0}".f(message);
                  observer.OnError(new FeedParsingException(error));
            }
}
```

ПРИЛОЖЕНИЕ Б
(справочное)

Листинг кода класса AdminController

```
      [ValidateInput(false), Admin]
      public class AdminController : BaseController, IUpdateModel
      {
            private readonly ISiteService _siteService;
            private readonly ISortableGridManager _gridManager;

            public AdminController(
                  IOrchardServices services,
                  IShapeFactory shapeFactory,
                  ISortableGridManager gridManager,
                  ISiteService siteService)
            {
                  Services = services;
                  _siteService = siteService;
                  _gridManager = gridManager;
                  T = NullLocalizer.Instance;
                  Shape = shapeFactory;
            }


            private dynamic Shape { get; set; }
            public IOrchardServices Services { get; set; }
            public Localizer T { get; set; }

            public ActionResult Index(PagerParameters pagerParameters,
SortParameters sortParameters)
            {
                  if (!Services.Authorizer.Authorize(DealerPermissions.List,
T("Not authorized to view list dealers.")))
                  {
                        return new HttpUnauthorizedResult();
                  }

                  var pager = new Pager(_siteService.GetSiteSettings(),
pagerParameters);
                  var dealersQuery = Services.ContentManager.Query<DealerPart,
DealerPartRecord>();
                  var pagerShape = Shape.Pager(pager)

.TotalItemCount(dealersQuery.Count());

                  var dealers = _gridManager.Sort(dealersQuery,
sortParameters).Slice(pager.GetStartIndex(), pager.PageSize).ToList();

                  var model = new DealersListingViewModel
                                    {
                                          Dealers = dealers.Select(x => new
DealerEntry { Model = x }).ToList(),
                                          Pager = pagerShape
```

```
                                    };

                        AddRouteData("sortBy", sortParameters.SortBy);
                        AddRouteData("sortDirection", sortParameters.SortDirection);
                        pagerShape.RouteData(ControllerContext.RouteData.Values);

                        return View(model);
                  }

                  [HttpGet]
                  public ActionResult Create()
                  {
                        if (!Services.Authorizer.Authorize(DealerPermissions.Create,
T("Not authorized to create dealer.")))
                        {
                              return new HttpUnauthorizedResult();
                        }

                        var dealer =
Services.ContentManager.New<DealerPart>("Dealer");
                        dynamic model = Services.ContentManager.BuildEditor(dealer);
                        return View(model);
                  }

                  [HttpPost, ActionName("Create")]
                  public ActionResult CreatePOST()
                  {
                        if (!Services.Authorizer.Authorize(DealerPermissions.Create,
T("Not authorized to create dealer.")))
                        {
                              return new HttpUnauthorizedResult();
                        }

                        var dealer =
Services.ContentManager.New<DealerPart>("Dealer");
                        dynamic model = Services.ContentManager.UpdateEditor(dealer,
this);

                        if (!IsDealerNameUnique(dealer))
                        {
                              ModelState.AddModelError(T("The Dealer Name field must
be unique.").ToString());
                        }

                        if (!ModelState.IsValid)
                        {
                              Services.TransactionManager.Cancel();
                              return View((object)model);
                        }

                        Services.ContentManager.Create(dealer);
                        Services.Notifier.Information(T("Dealer was successfully
created."));
                        return RedirectToAction("Index");
                  }
```

```
            [HttpGet]
            public ActionResult Edit(int id)
            {
                  if (!Services.Authorizer.Authorize(DealerPermissions.Edit,
T("Not authorized to edit dealer.")))
                  {
                        return new HttpUnauthorizedResult();
                  }

                  var item = Services.ContentManager.Get<DealerPart>(id);
                  if (item == null)
                  {
                        return HttpNotFound();
                  }
                  var model = Services.ContentManager.BuildEditor(item);
                  return View((object)model);
            }

            [HttpPost, ActionName("Edit")]
            public ActionResult EditPOST(int id)
            {
                  if (!Services.Authorizer.Authorize(DealerPermissions.Edit,
T("Not authorized to edit dealer.")))
                  {
                        return new HttpUnauthorizedResult();
                  }

                  var dealer = Services.ContentManager.Get<DealerPart>(id);
                  if (dealer == null)
                  {
                        return HttpNotFound();
                  }
                  var model = Services.ContentManager.UpdateEditor(dealer,
this);

                  if (!IsDealerNameUnique(dealer))
                  {
                        ModelState.AddModelError(T("The Dealer Name field must
be unique.").ToString());
                  }
                  if (!ModelState.IsValid)
                  {
                        Services.TransactionManager.Cancel();
                        return View((object)model);
                  }

                  Services.Notifier.Information(T("Dealer was successfully
updated."));
                  return RedirectToAction("Index");
            }

            public ActionResult Delete(int id)
            {
                  if (!Services.Authorizer.Authorize(DealerPermissions.Delete,
T("Not authorized to delete dealer.")))
                  {
```

```
                        return new HttpUnauthorizedResult();
                    }

                    var dealer = Services.ContentManager.Get(id);
                    if (dealer == null)
                    {
                        return HttpNotFound();
                    }
                    Services.ContentManager.Remove(dealer);
                    if (!ModelState.IsValid)
                    {
                        Services.TransactionManager.Cancel();
                        return RedirectToAction("Index");
                    }
                    Services.Notifier.Information(T("Dealer was successfully
deleted."));

                    int pageSize;
                    int.TryParse(HttpContext.Request.QueryString["pageSize"],
out pageSize);
                    var countPages = GetCountPage(pageSize,
Services.ContentManager.Query<DealerPart, DealerPartRecord>().Count());

                    return RedirectAfterDelete("Index", countPages, new
RouteValueDictionary());
                }

                bool IUpdateModel.TryUpdateModel<TModel>(TModel model, string
prefix, string[] includeProperties,

string[] excludeProperties)
                {
                    return TryUpdateModel(model, prefix, includeProperties,
excludeProperties);
                }

                void IUpdateModel.AddModelError(string key, LocalizedString
errorMessage)
                {
                    ModelState.AddModelError(key, errorMessage.ToString());
                }

                private bool IsDealerNameUnique(DealerPart dealer)
                {
                    return !Services.ContentManager.Query<DealerPart,
DealerPartRecord>()
                                                    .Where(m => m.DealerName ==
dealer.DealerName && m.Id != dealer.Id)
                                                    .Any();
                }
}
```

ПРИЛОЖЕНИЕ В
(справочное)

Листинг кода класса `CarListController`

```
[Themed]
public class CarListController : Controller
{
	#region Constants

	private readonly char separator = ',';

	#endregion

	#region Fields

	private readonly IOrchardServices _services;
	private readonly ICarListService _carListService;
	private readonly ICarService _carService;
	private readonly ISiteService _siteService;
	private readonly ICarTypeService _carTypeService;
	private readonly ISpecialService _specialService;
	private readonly IVideoService _videoService;
	private readonly ICarListFilterProvider _carListFilterProvider;
	private readonly IDealerSettingsService _dealerSettingsService;

	#endregion

	#region Properties

	private dynamic Shape { get; set; }
	protected ILogger Logger { get; set; }
	public Localizer T { get; set; }

	#endregion

	#region Controller

	public CarListController(IOrchardServices services,
ICarListService carListService, ICarService carService,
                                        IShapeFactory shapeFactory,
                                        ISiteService siteService,
ICarTypeService carTypeService,
                                        ISpecialService
specialService, IVideoService videoService,
                                        ICarListFilterProvider
carListFilterProvider,
                                        IDealerSettingsService
dealerSettingsService)
	{
		_dealerSettingsService = dealerSettingsService;
		_services = services;
		_carListService = carListService;
		_carService = carService;
		_siteService = siteService;
```

```
            Logger = NullLogger.Instance;
            Shape = shapeFactory;
            T = NullLocalizer.Instance;
            _carTypeService = carTypeService;
            _specialService = specialService;
            _carListFilterProvider = carListFilterProvider;
            _videoService = videoService;
        }

        #endregion

        #region Actions

        [ValidateInput(false)]
        public ActionResult Item(int carListId, CarListOptionsViewModel
options, PagerParameters pageParameters)
        {
            var carListPart = _services.ContentManager.Get(carListId,
VersionOptions.Published).As<CarListPart>();
            if (carListPart == null)
            {
                return HttpNotFound();
            }

            dynamic carList =
_services.ContentManager.BuildDisplay(carListPart);

            var filterOptions = new CarFilterOptions
            {
                IsShowFilter = carListPart.IsShowFilter,
                IsShowTrimFilter = carListPart.IsShowTrimFilter,
                IsShowModelFilter = carListPart.IsShowModelFilter,
                IsShowBodyStyleFilter =
carListPart.IsShowBodyStyleFilter,
                IsShowMakeFilter = carListPart.IsShowMakeFilter,
                IsShowSortByFilter = carListPart.IsShowSortByFilter,
                IsShowPriceFilter = carListPart.IsShowPriceFilter,
                IsShowTypeFilter = carListPart.IsShowTypeFilter,
                IsShowDealerFilter = carListPart.IsShowDealerFilter
            };

            var model = new CarIndexViewModel
            {
                CarListInfo = carList,
                CarFilterOptions = filterOptions,
                CarListId = carListId,
                Options = options,
                PageParams = pageParameters
            };

            return View(model);
        }

        public ActionResult Filter(int carListId, CarListOptionsViewModel
options, PagerParameters pagerParameters)
        {
```

```
                  var carListPart = _services.ContentManager.Get(carListId,
VersionOptions.Published).As<CarListPart>();
                  if (carListPart == null)
                  {
                        return HttpNotFound();
                  }

                  var carListName = carListPart.As<AutoroutePart>().Path;
                  var carFilter =
_carListFilterProvider.FindFilter(carListName);

                  var carRecordList =
_carService.GetRecordsWithoutSorting(options)
                                                                  .Where(x =>
x.IsActive == true);

                  if (carFilter == null)
                  {
                        carRecordList =
FilterCarsByListSettings(carRecordList, carListPart);
                  }
                  else
                  {
                        carRecordList = carFilter.Filter(carRecordList);
                  }

                  var filter = new CarFilter(carRecordList, _carService,
options);

                  var filterOptions = new CarFilterOptions
                  {
                        IsShowFilter = carListPart.IsShowFilter,
                        IsShowTrimFilter = carListPart.IsShowTrimFilter,
                        IsShowModelFilter = carListPart.IsShowModelFilter,
                        IsShowBodyStyleFilter =
carListPart.IsShowBodyStyleFilter,
                        IsShowMakeFilter = carListPart.IsShowMakeFilter,
                        IsShowSortByFilter = carListPart.IsShowSortByFilter,
                        IsShowPriceFilter = carListPart.IsShowPriceFilter,
                        IsShowDealerFilter = carListPart.IsShowDealerFilter,
                        IsShowTypeFilter = carListPart.IsShowTypeFilter
                  };

                  var viewModel = new CarFilterViewModel
                  {
                        Filter = filter,
                        Options = filterOptions,
                        Page =
pagerParameters.Page.HasValue?pagerParameters.Page.Value:1
                  };

                  return PartialView(viewModel);
            }

            private IQueryable<CarRecord>
FilterCarsByListSettings(IQueryable<CarRecord> carRecordList, CarListPart
```

```
carListPart)
            {
                  if (carListPart.IsCertified.HasValue)
                  {
                        carRecordList = carListPart.IsCertified.Value
                              ? carRecordList.Where(x => x.IsCertified.Value)
                              : carRecordList.Where(x =>
!x.IsCertified.Value);
                  }

                  if (carListPart.IsSpecial.HasValue)
                  {
                        carRecordList = carListPart.IsSpecial.Value
                              ? carRecordList.Where(x => x.IsSpecial.Value)
                              : carRecordList.Where(x => !x.IsSpecial.Value);
                  }

                  // filter cars by values for CarList TypeID
                  int listTypeId;
                  if (Int32.TryParse(carListPart.Type, out listTypeId))
                  {
                        IList<string> values =
_carTypeService.GetCarTypeValues(listTypeId);
                        carRecordList = carRecordList.Where(x => x.Type !=
null && values.Contains(x.Type.ToLower().Trim()));
                  }

                  if (!string.IsNullOrEmpty(carListPart.DealerIds))
                  {
                        var dealerIds = carListPart.DealerIds.Split(new[]
{CarListPart.DefaultSplitter},
                              StringSplitOptions.RemoveEmptyEntries);

                        carRecordList = carRecordList
                              .Where(x => x.DealerId != null &&
dealerIds.Contains(x.DealerId));
                  }

                  return carRecordList;
            }

            public ActionResult CarForModelList(int carModelListId,
PagerParameters pagerParameters)
            {
                  var part = _services.ContentManager.Get(carModelListId,
VersionOptions.Published).As<CarModelListPart>();
                  if(part==null)
                  {
                        return HttpNotFound();
                  }

                  var options = new CarListOptionsViewModel {Model =
part.Model};
                  var pager = new Pager(_siteService.GetSiteSettings(),
pagerParameters);
                  var carSettings =
```

```
_services.WorkContext.CurrentSite.As<CarSettingsPart>();


                IQueryable<CarRecord> carRecordList =
_carService.GetActiveRecords(options);
                IList<SpecialRecord> specials =
_specialService.GetAllLive();


                int totalItemCount = carRecordList.Count();
                IList<CarRecord> carRecords =
carRecordList.Skip(pager.GetStartIndex()).Take(pager.PageSize).ToList();
                _videoService.CarRecordsWithModifyVideoCode(carRecords);

                dynamic pagerShape =
Shape.Pager(pager).TotalItemCount(totalItemCount);
                var path = part.CarProjectionPart != null ?
part.CarProjectionPart.As<AutoroutePart>().Path : string.Empty;

                var dealers =
_dealerSettingsService.GetDealerSettingsParts();

                var carItems = carRecords.Select(rec =>
                                                                {
                                                                    var
specialForCar = _specialService.GetSpecialsForCar(rec, specials);
                                                                    var
dealerSettings =

dealers.FirstOrDefault(

       dealer => dealer.DealerId.Split(separator)

             .Contains(rec.DealerId));


                                                                    return
new CarItemInListViewModel(specialForCar.ToList(),

                                                rec,

                                                path,

                                                carSettings,


_carTypeService.GetCarTypeValues(CarTypes.Used),


_carTypeService.GetCarTypeValues(CarTypes.New),


_carTypeService.GetCarTypeValues(CarTypes.Cpo),


_carTypeService.GetCarTypeValues(CarTypes.Demo),
```

```
                                          dealerSettings);
                                                                  });

                  var model = new CarFilterResult
                                    {
                                          CarItemInListViewModels = carItems,
                                          Path = path,
                                          CarSettingsPart = carSettings,
                                          Pager = pagerShape
                  };

                  return PartialView("FilterResult", model);
            }

            public ActionResult SearchData(int carListId, PagerParameters
pagerParameters, CarListOptionsViewModel options)
            {
                  var carListPart = _services.ContentManager.Get(carListId,
VersionOptions.Published).As<CarListPart>();
                  var carListName = carListPart.As<AutoroutePart>().Path;
                  if (!Request.IsAjaxRequest())
                  {
                        return Redirect(String.Format("~\\{0}?page={1}",
carListName, pagerParameters.Page.HasValue ? pagerParameters.Page : 1));
                  }
                  var pager = new Pager(_siteService.GetSiteSettings(),
pagerParameters);

                  var carSettings =
_services.WorkContext.CurrentSite.As<CarSettingsPart>();


                  if (carListPart == null)
                  {
                        return HttpNotFound();
                  }

                  CarProjectionPart carProjection =
_carListService.GetForCarListPart(carListPart);

                  string path = string.Empty;
                  if (carProjection != null)
                  {
                        path =
                              _services.ContentManager

.Get<CarProjectionPart>(carProjection.Id, VersionOptions.Published)
                                          .As<AutoroutePart>()
                                          .Path;
                  }


                  var carFilter =
_carListFilterProvider.FindFilter(carListName);
                  var carRecordList = _carService.GetActiveRecords(options);
```

```
                if (carFilter == null)
                {
                      carRecordList =
FilterCarsByListSettings(carRecordList, carListPart);
                }
                else
                {
                      carRecordList = carFilter.Filter(carRecordList);
                }


                int totalItemCount = carRecordList.Count();
                IList<CarRecord> carRecords;

                if (options.SortBy == SortByFilter.ColorStyleAtoZ)
                {
                      carRecords = carRecordList.ToList();
                      carRecords = SortWithEmptyLast(carRecords);
                      carRecords =
carRecords.Skip(pager.GetStartIndex()).Take(pager.PageSize).ToList();
                }
                else
                {
                      carRecords =
carRecordList.Skip(pager.GetStartIndex()).Take(pager.PageSize).ToList();
                }

                _videoService.CarRecordsWithModifyVideoCode(carRecords);
//update video from video manager todo refacoring

                dynamic pagerShape =
Shape.Pager(pager).TotalItemCount(totalItemCount);

                // maintain previous route data when generating page links
                var routeData = new RouteData();

                routeData.Values.Add("Stock", options.Stock);
                routeData.Values.Add("Model", options.Model);
                routeData.Values.Add("Trim", options.Trim);
                routeData.Values.Add("Year", options.Year);
                routeData.Values.Add("BodyStyle", options.BodyStyle);
                routeData.Values.Add("MSRP", options.MSRP);
                routeData.Values.Add("SortBy", options.SortBy);

                pagerShape.RouteData(routeData);
                IList<SpecialRecord> specials =
_specialService.GetAllLive();

                var dealers =
_dealerSettingsService.GetDealerSettingsParts();

                var carItems = carRecords.Select(rec =>
                {
                      var specialForCar =
_specialService.GetSpecialsForCar(rec, specials);
```

```
                        var dealerSettings =
                              dealers.FirstOrDefault(
                              dealer => dealer.DealerId.Split(separator).
                                    Contains(rec.DealerId));


                        return new
CarItemInListViewModel(specialForCar.ToList(),
                                                                              rec,
                                                                              path,

carSettings,

_carTypeService.GetCarTypeValues(CarTypes.Used),

_carTypeService.GetCarTypeValues(CarTypes.New),

_carTypeService.GetCarTypeValues(CarTypes.Cpo),

_carTypeService.GetCarTypeValues(CarTypes.Demo),

dealerSettings);
                  });

                  var model = new CarFilterResult
                  {
                        CarItemInListViewModels = carItems,
                        Path = path,
                        CarSettingsPart = carSettings,
                        Pager = pagerShape
                  };

                  return PartialView("FilterResult", model);
            }

            #endregion

            #region Helper

            private IList<CarRecord> SortWithEmptyLast(IEnumerable<CarRecord>
carRecords)
            {
                  return carRecords.OrderBy(x =>
string.IsNullOrEmpty(x.ExteriorColor)).ToList();
            }

            #endregion
}
```

ПРИЛОЖЕНИЕ Г
(справочное)

Листинг кода класса `CarsListService`

```
      public class CarsListService : ICarListService
      {
            private readonly IContentManager _contentManager;
            private readonly IRepository<CarListPartRecord> _repository;
            private readonly ICarTypeService _carTypeService;

            public CarsListService(IContentManager contentManager ,
IRepository<CarListPartRecord> repository, ICarTypeService carTypeService)
            {
                  _contentManager = contentManager;
                  _repository = repository;
                  _carTypeService = carTypeService;
            }

            public CarListPartRecord CarRecordById(int carListId)
            {
                  return _repository.Get(carListId);
            }

            public CarListPart Get(string path)
            {
                  return
                        _contentManager.Query<AutoroutePart,
AutoroutePartRecord>().Where(r => r.DisplayAlias ==
path).ForPart<CarListPart>().Slice(0, 1).FirstOrDefault();
            }

            public CarListPart Get(int id)
            {
                  return
                        _contentManager.Query<AutoroutePart,
AutoroutePartRecord>().Where(r => r.Id == id).ForPart<CarListPart>().Slice(0,
1).FirstOrDefault();
            }

            public ContentItem Get(int id, VersionOptions versionOptions)
            {
                  var carListPart = _contentManager.Get<CarContainerPart>(id,
versionOptions);

                  return carListPart == null ? null : carListPart.ContentItem;
            }

            public IEnumerable<CarListPart> Get()
            {
                  return Get(VersionOptions.Published);
            }

            public string GetCarListPathByType(CarTypes type) {
```

```
                var carType = _carTypeService.Get(type.ToString());
                if(carType != null) {
                      var autoRoute = _contentManager.Query<CarListPart,
CarListPartRecord>(VersionOptions.Published)
                   .Where(cl => cl.Type == carType.Id.ToString())
                   .List<AutoroutePart>().FirstOrDefault();
                      return autoRoute != null ? autoRoute.Path : null;
                }
                return null;
          }

          public IEnumerable<CarListPart> Get(VersionOptions versionOptions)
          {
             var  carLists =  _contentManager.Query<CarListPart,
CarListPartRecord>(versionOptions)
                      .Join<TitlePartRecord>()
                      .OrderBy(br => br.Title)
                      .List();

                return carLists;
          }

          public void Delete(ContentItem carList)
          {
             _contentManager.Remove(carList);
          }

          public CarProjectionPart GetForCarListPart(CarListPart
carListPart)
          {
                CarProjectionPart res;
                res = carListPart == null
                            ? null
                            : _contentManager.Query<CarProjectionPart,
CarProjectionPartRecord>().Where(
                                  proj => proj.CarListPartId ==
carListPart.Id).Slice(0, 1).SingleOrDefault();
                return res;
          }

          public CarProjectionPart GetForCarListPart(int carListRecordId)
          {
                CarProjectionPart res;
                res =  _contentManager.Query<CarProjectionPart,
CarProjectionPartRecord>().Where( proj => proj.CarListPartId ==
carListRecordId).Slice(0, 1).SingleOrDefault();
                return res;
          }

          public ContentItem GetCarProjectionPart(int carProjectionId,
VersionOptions versionOptions)
          {
                var carProjectionPart =
_contentManager.Get<CarProjectionPart>(carProjectionId, versionOptions);
                return carProjectionPart == null ? null :
```

```
carProjectionPart.ContentItem;
            }

            public ContentItem GetCarProjectionPart(string carProjectionGuid)
            {
                  ContentItem result = null;
                  if(!string.IsNullOrEmpty(carProjectionGuid))
                  {
                        var carProjectionPart = _contentManager
                              .Query<CarProjectionPart,
CarProjectionPartRecord>()
                              .Where(cp => cp.CarProjectionGuid ==
carProjectionGuid)
                              .Slice(0, 1)
                              .SingleOrDefault();

                        result = carProjectionPart == null ? null :
carProjectionPart.ContentItem;
                  }

                  return result;
            }

            public string GetPathByCarRecord(CarRecord carRecord)
            {
                  CarListPart carProjectionlist = null;
                  CarProjectionPart carProjectionPart = null;
                  List<CarTypeRecord> carTypes = null;
                  if (carRecord != null)
                  {
                        carTypes =
_carTypeService.GetTypesByValue(carRecord.Type).ToList();
                  }
                  if (carTypes != null)
                  {
                        carProjectionlist = _contentManager
                              .Query<CarListPart, CarListPartRecord>().List()
                              .Where(cl => carTypes.Select(ct =>
ct.Id.ToString()).Contains(cl.Type))
                              .FirstOrDefault(cl => !cl.IsCertified.HasValue
|| cl.IsCertified.Value == false);
                  }

                  if (carProjectionlist != null)
                  {
                         carProjectionPart =
this.GetForCarListPart(carProjectionlist);
                  }
                  if (carProjectionPart == null)
                  {
                        var carLists =
                              _contentManager.Query<CarListPart,
CarListPartRecord>().List().FirstOrDefault(
                                    cl => cl.CarProjectionPartField != null);
                        carProjectionPart = this.GetForCarListPart(carLists);
                  }
```

```
                if (carProjectionPart != null)
                {
                      return carProjectionPart.As<AutoroutePart>().Path;
                }

                return string.Empty;
          }

          public CarProjectionPart GetCarListProjection(string path)
          {
                return _contentManager.Query<AutoroutePart,
AutoroutePartRecord>().Where(r => r.DisplayAlias ==
path).ForPart<CarProjectionPart>().Slice(0, 1).FirstOrDefault();
          }

          public CarListPart GetCarListPart(int id)
          {
                return
                      _contentManager.Query<AutoroutePart,
AutoroutePartRecord>().Where(r => r.Id == id).ForPart<CarListPart>().Slice(0,
1).FirstOrDefault();
          }

}
```

ПРИЛОЖЕНИЕ Д
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Спецификация

ПРИЛОЖЕНИЕ Е
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Ведомость документов