TASKZERO – **STEP 2**

At this point, after completing Step 1, you should have a solution that allows you to add a new item to the to-do list. The next step is adding the code to edit and delete an existing item.

* As first thing, let’s add some JavaScript code to select the to-do item to edit. The file ybq-coreinit.js contains a jQuery command that automatically captures the click on a TR element and jumps to the URL saved in a child **data-gotourl** attribute. Let’s just edit the table in the **pv\_pendingtasks.cshtml** file. The folder is Views/Dashboard. Edit the code as shown below.

@foreach (var task in Model)

{

           <tr data-gotourl="/task/edit/@task.TaskId">  
 ...  
}

* Now let’s proceed creating a new controller action to process the request to edit a to-do item. In the **TaskController** class let’s add a new method.

#region EDIT TASK

[HttpGet]

public ActionResult Edit(string id /\* to bypass model binding and possible exceptions on GUID \*/)

{

    Guid guid;

    var outcome = Guid.TryParse(id, out guid);

    if (!outcome)

        throw new InvalidGuidException("Could not find specified task");

    var model = \_service.GetTask(guid);

    return View(model);

}

#endregion

Make sure you also add a reference to the namespace that defines the exception class.

using TaskZero.Server.Common.Exceptions;

* Open **TaskViewModel.cs** in the Models folder and add the following code.

using TaskZero.ReadStack.ReadModel;

namespace TaskZero.Server.Models.Task

{

    public class TaskViewModel : ViewModelBase

    {

        public TaskViewModel()

        {

            Task = new PendingTask();

        }

        public PendingTask Task { get; set; }

    }

}

* Open the **TaskService.cs** file and add the following declaration

private readonly ProjectionManager \_manager = new ProjectionManager();

* In the same file, add the following code to load the specified item.

public TaskViewModel GetTask(Guid id)

{

    var model = new TaskViewModel { Task = \_manager.FindById(id) };

    return model;

}

* The method **QueueAddOrSaveTask** in the **TaskService.cs** class must be rewritten to also support the edit scenario.

#region COMMAND methods

public void QueueAddOrSaveTask(TaskInputModel input)

{

    Command command;

    var isNewTask = (input.TaskId == Guid.Empty);

    if (isNewTask)

    {

        command = new AddNewTaskCommand(

            input.Title,

            input.Description,

            input.DueDate,

            input.Priority,

            input.SignalrConnectionId);

    }

    else

    {

        command = new UpdateTaskCommand(

            input.TaskId,

            input.Title,

            input.Description,

            input.DueDate,

            input.Priority,

            input.Status,

            input.SignalrConnectionId);

    }

    Bus.Send(command);

}

#endregion

* Create also a file named **UpdateTaskCommand.cs** in

using System;

using TaskZero.Shared;

namespace TaskZero.CommandStack.Commands

{

    public class UpdateTaskCommand : NotifyCommand

    {

        public UpdateTaskCommand(Guid id,

            string title,

            string description,

            DateTime? dueDate,

            Priority priority,

            Status status,

            string connectionId) : base(connectionId)

        {

            TaskId = id;

            Title = title;

            Description = description;

            DueDate = dueDate;

            Priority = priority;

            Status = status;

        }

        public Guid TaskId { get; set; }

        public string Title { get; set; }

        public string Description { get; set; }

        public DateTime? DueDate { get; set; }

        public Priority Priority { get; set; }

        public Status Status { get; set; }

    }

}

* In the **Views/Task** folder create a new **edit.cshtml** file with the following content.

@model TaskZero.Server.Models.Task.TaskViewModel

@using TaskZero.Server.Resources

@section adhoc\_Scripts\_Top {

    <script src="~/content/scripts/jquery.signalR-2.2.2.min.js"></script>

    <script src="~/signalr/hubs"></script>

    <script>

        $(function() {

            // Reference the auto-generated proxy for the hub.

            var taskZeroHub = $.connection.taskZeroHub;

            // Define client-side endpoints for the taskZeroHub

            taskZeroHub.client.notifyResultOfUpdateTask = function (taskId, title) {

                var msg = "Task [" + title + "] updated successfully.";

                Ybq.toast("#task-form-message", msg, true);

            };

            // Start the SignalR client-side listener

            $.connection.hub.start().done(function () {

                $("#signalrConnectionId").val($.connection.hub.id);

            });

        });

    </script>

}

@{

    var dateForDisplay = Model.Task.DueDate.HasValue

        ? Model.Task.DueDate.Value.ToString("d MMM yyyy")

        : "";

}

<div class="col-xs-12 col-lg-10 col-lg-offset-1">

    <h2>

        <a href="@Url.Action("index", "dashboard")"><i class="fa fa-list"></i></a>

        EDIT TASK <small class="text-muted hidden-xs">@Model.Task.TaskId</small>

    </h2>

    <div id="task-form-message" class="alert alert-info" style="display: none;"></div>

    <div class="margin-top-md">

        <form class="form-horizontal" id="task-form"

              role="form" method="post"

              action="@Url.Action("save", "task")">

            <!-- ID -->

            <input type="hidden" name="taskid" value="@Model.Task.TaskId" />

            <input type="hidden" name="signalrConnectionId" id="signalrConnectionId" />

            <!-- Title & Priority -->

            <div class="form-group has-feedback" id="task-form-group-title">

                <label class="col-xs-12 col-md-8" for="title">Task</label>

                <label class="col-xs-12 col-md-2" for="priority">Priority</label>

                <label class="col-xs-12 col-md-2" for="priority">Status</label>

                <div class="col-xs-12 col-md-8">

                    <input type="text" class="form-control"

                           id="title" name="title"

                           value="@Model.Task.Title"

                           required

                           placeholder="Describe what you should be up to"

                           data-click-on-enter="#task-form-submit-button">

                    <i class="fa fa-edit form-control-feedback"></i>

                </div>

                <div class="col-xs-12 col-md-2">

                    <select name="priority" id="priority" class="form-control">

                        <option value="0">Not Set</option>

                        <option value="1">Low</option>

                        <option value="2">Normal</option>

                        <option value="3">High</option>

                        <option value="4">Urgent</option>

                    </select>

                </div>

                <div class="col-xs-12 col-md-2">

                    <select name="status" id="status" class="form-control">

                        <option value="0">Unknown</option>

                        <option value="1">To do</option>

                        <option value="2">In progress</option>

                        <option value="3">Suspended</option>

                        <option value="4">Completed</option>

                    </select>

                </div>

            </div>

            <!-- Description & Due date -->

            <div class="form-group" id="task-form-group-description">

                <label class="col-xs-12 col-md-8" for="description">Description</label>

                <label class="col-xs-12 col-md-4" for="duedate">Due date</label>

                <div class="col-xs-12 col-md-8">

                    <textarea class="form-control" rows="5"

                              name="description" id="description">@Model.Task.Description</textarea>

                </div>

                <div class="col-xs-12 col-md-4">

                    <input type="text" class="form-control"

                           id="duedate" name="duedate"

                           date

                           value="@dateForDisplay"

                           placeholder="Due date">

                    <h4 id="pending-changes" class="margin-top-md bold text-danger"

style="display:none">

                        PENDING CHANGES

                    </h4>

                </div>

            </div>

            <div class="form-group" style="margin-top: 30px">

                <div class="col-xs-offset-2 col-xs-8 col-md-4 col-md-offset-4 text-center">

                    <button type="button" id="task-form-submit-button"

                            class="btn btn-primary btn-spaced">

                        @Strings\_Menu.Submit

                    </button>&nbsp;&nbsp;&nbsp;

                    <button type="button" id="task-form-delete-button"

                            class="btn btn-danger btn-spaced"

                            onclick="alert('NOT IMPLEMENTED YET')">

                        @Strings\_Menu.Delete

                    </button>

                    <span id="task-form-loader"

                          class="text-danger" style="display: none;">

                        @Strings\_Core.System\_OperationInProgress

                    </span>

                </div>

            </div>

        </form>

    </div>

</div>

<script>

    $("#task-form-submit-button").click(function() {

        if (Ybq.canAcceptValueOf("#task-form",

            "title",

            function (input) { return input.length > 0; },

            "Must be non empty")) {

            Ybq.postForm("#task-form",

                function (data) {

                    //var response = JSON.parse(data);

                    //Ybq.toast("#task-form-message",

                    //    response.Message, response.Success, response.IsPartial);

                });

        } else {

            Ybq.clearFormAfterTimeout("#task-form");

        }

    });

</script>

<script>

    $("#priority").val(@((int)Model.Task.Priority));

</script>

<script>

    $("#status").val(@((int)Model.Task.Status));

</script>

* At this point, everything is up and running for editing an existing to-do item. The only missing part is handling the command that requires an update. Let’s then open the **ManageTaskSaga.cs** file and edit as below.

public class ManageTaskSaga : Saga,

        IAmStartedBy<AddNewTaskCommand>,

        IHandleMessages<UpdateTaskCommand>

{  
   
}

Now add some more code in the body of the class to implement the **IHandleMessage** interface.

public void Handle(UpdateTaskCommand message)

{

    // Dehydrates all events from event store for given aggregate

    var task = Repository.GetById<Task>(message.TaskId);

    // Triggers the UPDATE-GENERAL event

    task.UpdateModel(message.Title, message.Description, message.DueDate,

message.Priority, message.Status);

    Repository.Save(task);

    // Notify back

    var notification = new UpdateTaskNotifyCommand(message.SignalrConnectionId)

    {

        TaskId = task.TaskId,

        Title = task.Title

    };

    Bus.Send(notification);

}

* This code won't compile yet as you also need to add an **UpdateTaskNotifyCommand** class in the Commands folder of the **CommandStack** project.

public class UpdateTaskNotifyCommand : NotifyCommand

{

    public UpdateTaskNotifyCommand(string connectionId)

        : base(connectionId)

    {

    }

    public Guid TaskId { get; set; }

    public string Title { get; set; }

}

* Finally, you also need to add a new **UpdateModel** method of the Task class in the **Task.cs** file in the Model folder of the **CommandStack** project. Before that, though, also add a **TaskUpdatedEvent** class in the Events folder of the Shared project.

using System;

using Memento;

namespace TaskZero.Shared.Events

{

    public class TaskUpdatedEvent : DomainEvent

    {

        public TaskUpdatedEvent(Guid id, string title, string description,

DateTime? dueDate, Priority priority, Status status)

        {

            TaskId = id;

            Title = title;

            Description = description;

            DueDate = dueDate;

            Priority = priority;

            Status = status;

        }

        public Guid TaskId { get; set; }

        public string Title { get; set; }

        public string Description { get; set; }

        public DateTime? DueDate { get; set; }

        public Priority Priority { get; set; }

        public Status Status { get; set; }

    }

}

Now add the following the following **UpdateModel** method to the Task class.

public void UpdateModel(string title, string description, DateTime? dueDate,

Priority priority, Status status)

{

    var updated = new TaskUpdatedEvent(TaskId, title, description, dueDate, priority, status);

    RaiseEvent(updated);

}

* The **Task** class also needs to be added some code to handle the updated event

public class Task : Aggregate,

    IApplyEvent<TaskCreatedEvent>,

    IApplyEvent<TaskUpdatedEvent>

{

}

Add also the following code to handle the **IApplyEvent** interface.

public void ApplyEvent(

    [AggregateId("TaskId")] TaskUpdatedEvent theEvent)

{

    // No need to change TaskId

    // Copy values over

    Title = theEvent.Title;

    Description = theEvent.Description;

    DueDate = theEvent.DueDate;

    Priority = theEvent.Priority;

    Status = theEvent.Status;

}

* This is enough to update the Command stack. Let’s edit the Query stack as well. Open the **Denormalizers** folder in the ReadStack project and pick up the **ManageTaskDenormalizer** class.

public class ManageTaskDenormalizer :

    IHandleMessages<TaskCreatedEvent>,

    IHandleMessages<TaskUpdatedEvent>

{   
}

* In the same file, also add an implementation for the **IHandleMessage** interface.

public void Handle(TaskUpdatedEvent message)

{

    using (var context = new TaskContext())

    {

        var task = (from t in context.PendingTasks

                    where t.TaskId == message.TaskId

                    select t).SingleOrDefault();

        if (task == null)

            return;

        task.Title = message.Title;

        task.Description = message.Description;

        task.DueDate = message.DueDate;

        task.Priority = message.Priority;

        task.Status = message.Status;

        if (message.Status == Status.Completed)

        {

            task.CompletionDate = DateTime.Today;

        }

        if (message.Status == Status.InProgress &&

            task.Status != Status.InProgress)

        {

            task.StartDate = DateTime.Today;

            task.CompletionDate = null;

        }

        context.SaveChanges();

    }

}

* The final step consists in notifying back the user interface of the changes on the server. Open the **NotificationHandler.cs** file and add the following:

public class NotificationHandler :

    IHandleMessages<AddNewTaskNotifyCommand>,

    IHandleMessages<UpdateTaskNotifyCommand>

{   
}

* Now add some code to implement the **IHandleMessage** interface.

public void Handle(UpdateTaskNotifyCommand message)

{

    // Notify back

    var hub = new TaskZeroHub(message.SignalrConnectionId);

    hub.NotifyResultOfUpdateTask(message.TaskId, message.Title);

}