

Lab 5.

General description of the project's structure

This lab implements message patterns on MSMQ and .NET platform. There are two type of tasks – the first one is check a number whether it is prime or not, and the second one is a factorial of an integer. Main logic implemented in separate library called TaskLib. There are main class Task and its subclasses TaskPrime, TaskFactorial and TaskRouter (The latter is actually useless in this lab and, as a result, it has been implemented, but, actually, it is not used during the process of task's executing). Task has three main methods: split, run and group. Some of them are overridden in child classes.

The main node has class TaskManager, which implements logic for working with tasks. It also has method, which works in separate thread, and checking for new results from workers. The workers have minimum logic and can execute any task.

The main node has been “wrapped” in ASP.NET MVC 2 project, and, as a result, it has web GUI for creating tasks and checking their results.

Description of process of task's executing

Each task is divided on subtasks and pushed into the queue. After that workers take these tasks and call method run. The method run contains the job itself and some logic for pushing answer into the answer queue. When all subtasks are executed, the main node will call method group for this task. After that the task is moved to the list of executed tasks.