

C++ code 9.11.6: Auxiliary function `initMbig()` → [GitLab](#)

```
2  If::assemble::COOMatrix<double> initMbig(  
3      std::shared_ptr<const If::uscalfe::FeSpaceLagrangeO1<double>> fe_space) {  
4      const If::assemble::DofHandler &dofh = fe_space->LocGlobMap();  
5      // Diffusion coefficient =0, reaction coefficient = 1  
6      If::mesh::utils::MeshFunctionConstant alpha(0.0), gamma(1.0);  
7      If::uscalfe::ReactionDiffusionElementMatrixProvider entity_matrix_provider(  
8          fe_space, alpha, gamma);  
9      // Compute mass matrix for full finite element space  
10     If::assemble::COOMatrix<double> M =  
11         If::assemble::AssembleMatrixLocally<If::assemble::COOMatrix<double>,  
12             decltype(entity_matrix_provider)>(  
13             0, dofh, entity_matrix_provider);  
14     // Find mesh nodes on the boundary  
15     const If::mesh::utils::CodimMeshDataSet<bool> bd_flags =  
16         If::mesh::utils::flagEntitiesOnBoundary(fe_space->Mesh(), 2);  
17     // Predicate for selecting matrix rows induced by test functions associated  
18     // with nodes on the boundary  
19     auto pred = [&bd_flags, &dofh](int i, int j) {  
20         return bd_flags(dofh.Entity(i));  
21     };  
22     // Set the corresponding triplets to zero using LehrFEM++ helper function  
23     M.setZero(pred);  
24  
25     return M;  
26 }
```