

function

- the constructor
- then the `problem` function
- as well as the functions `set_boundary_conditions`
- a `construct_helmholtz` function and the `solution`
- all discussed before. `set_helmholtz` comes. The constructor: We pass the element type as a template parameter to the problem constructor
- which has no argument. The constructor creates an `H1` discretization and builds an `H1` discretization with `boundary_conditions` and `set_helmholtz` function. Since `set_helmholtz` is a function, it is not a member of the `H1` discretization
- the `boundary_conditions` are imposed. We pass all variables and the temperature on the top and bottom walls and finally the horizontal velocity on the side walls. Since the domain is rectangular
- the pressure is only determined up to an arbitrary constant. We resolve this ambiguity by giving a single pressure value
- using the `set_helmholtz` function. We then build the `problem` by using the `problem` constructor and finally solve the system. We impose a `Dirichlet` boundary condition on the top boundary. The `boundary_conditions` are imposed. The `boundary_conditions` are imposed. The `boundary_conditions` are imposed.
- we impose a `Dirichlet` boundary condition that randomly generates the vertical velocity field on the upper boundary. The `boundary_conditions` are imposed.