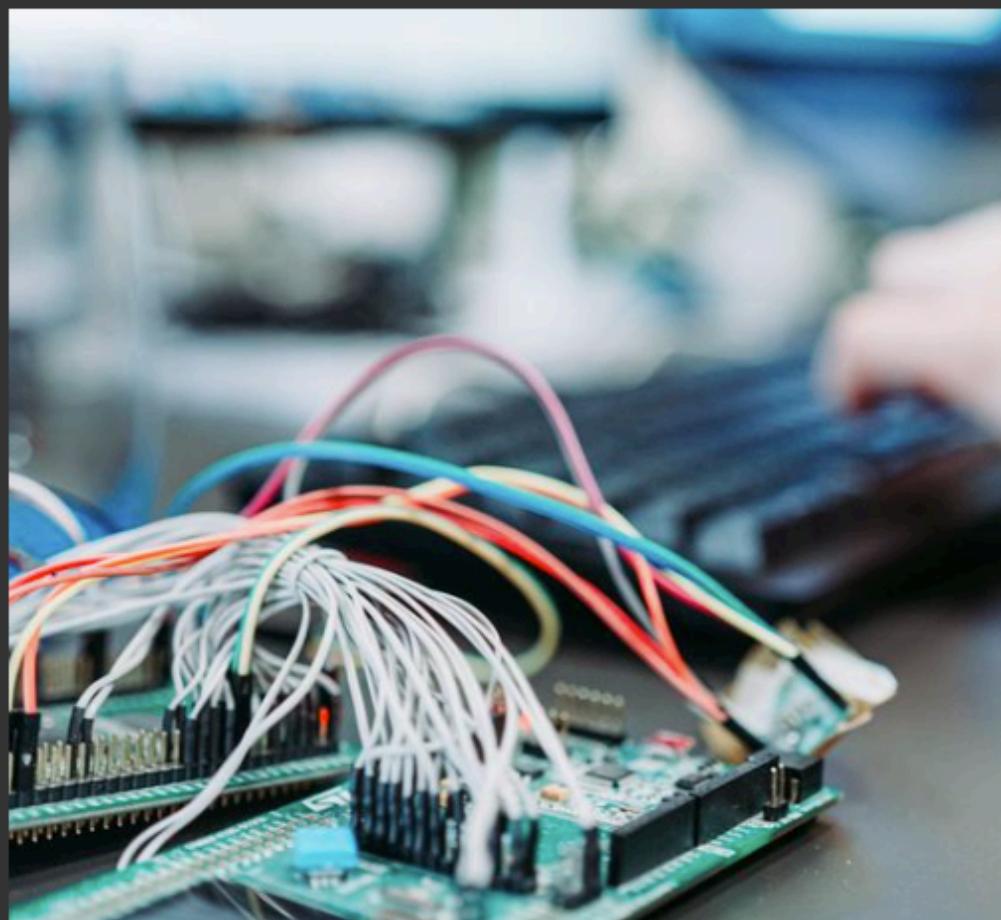




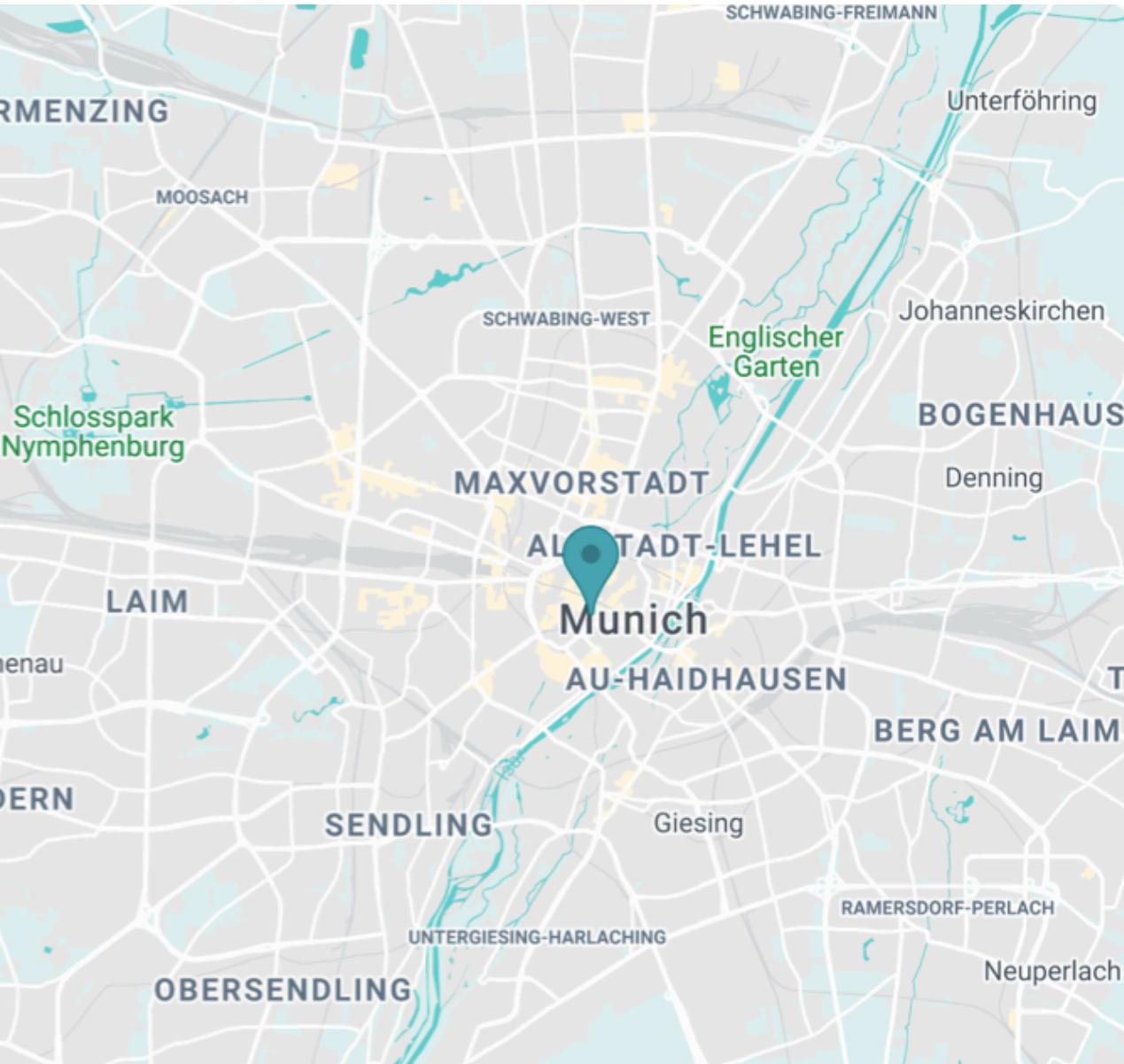
A winegrower is looking for possibilities to increase his productivity while keeping the excellent quality of his products



- To constantly control the quality of his plants he is willing to install humidity and temperature sensors, and a sprinkler system
- In addition he wants to receive weather forecasts from an online web service



- Lost in programming and connecting the devices he decides to engage his preferred IT consultant - who programmed his web presence - for realizing his IoT solution



Web Agency

Rosental 7, Munich, Germany



+49 89 12345678



@webagency

The Web Agency is your solution provider when it comes to realizing your personal or business web and social media presence



- Joe, the lead developer at Web Agency likes the new challenge and is willing to broaden his IoT knowledge
- He is an expert in Web technologies and does programming of both frontend as well as backend with Node JS
- However, he only has a vague idea how to integrate hardware and fears the interoperability dilemma that he experienced in a former IoT project



- Googling for a while for a better solution he finds information about Web of Things (WoT)
- WoT is a W3C activity that promises Web developers to become IoT developers using the tools and frameworks they know and love
- WoT can be applied to different domains, like Industry or Building Automation, and thus also fits well for the Winemaker task

```
    if (selectedScope, element, attr, ngSwitchController) {
      element = attr.ngSwitch || attr.on,
      previousElements = [],
      selectedElements = [],
      previousScopes = []
    }

    scope.$watchExpr( function ngSwitchWatchAction(val) {
      var i, ii;
      for (ii = 0, ii = previousElements.length; i < ii; ++i)
        previousElements[i].remove();
      previousElements.length = 0;

      for (ii = 0, ii = selectedScopes.length; i < ii; ++i) {
        var selected = selectedElements[i];
        selectedScopes[i].$destroy();
        previousElements[i] = selected;
        minute.leave(selected, function() {
          previousElements.splice(i, 1);
        });
      }
      selectedElements.length = 0;
      selectedScopes.length = 0;
    });

    if ((selectedTranscludes = ngSwitchController.cases['!']) + val) {
      scope.$eval(attr.change);
      forEach(selectedTranscludes, function(selectedTransclude) {
        var selectedScope = scope.$new();
        selectedScopes.push(selectedScope);
        selectedScope.$on('$destroy', function() {
          selectedScopes.pop();
        });
      });
    }
  }
}
```

- Joe starts off and is happy to find a bunch of WoT tutorials on thingweb.io, YouTube, and GitHub
- With node-wot, the various protocol bindings like HTTP, MQTT, and CoAP, and a browser bundle he easily creates a full stack IoT solution connecting all the devices and featuring a great user interface



- Instead of creating a proprietary solution he leverages the WoT methodology to create IoT building blocks that extend his already existing Web technologies portfolio
- Thing Descriptions, application templates, and semantics are now same class portfolio members as HTML pages, Javascript snippets, or CSS from his former projects

```
{  
  "@context": "https://www.w3.org/2019/wot/td/v1",  
  "id": "urn:dev:ops:32473-WoTLamp-1234",  
  "title": "MyLampThing",  
  "securityDefinitions": {  
    "basic_sc": {"scheme": "basic", "in": "header"}  
  },  
  "security": ["basic_sc"],  
  "properties": {  
    "status": {  
      "type": "string",  
      "forms": [{"href": "https://mylamp.example.com/status"}]  
    }  
  },  
  "actions": {  
    "toggle": {  
      "forms": [{"href": "https://mylamp.example.com/toggle"}]  
    }  
  },  
  "events": {  
    "overheating": {  
      "data": {"type": "string"},  
      "forms": [{  
        "href": "https://mylamp.example.com/oh",  
        "subprotocol": "longpoll"  
      }]  
    }  
  }  
}
```

- As the main element of WoT methodology the Thing Description (TD) is comparable to an index.html for things
- TD addresses several questions...

What kind of data do you serve?



Who are you?



How does the payload structure look like?



How can I access the data/function?



Are there some context information
(e.g., kind of actuator/sensor, unit)?



What kind of protocols & serializations do you support?



Are there some security constrains?



Do you have other relations to other Things?





- Not fiddling around for months, Joe creates the IoT solution in just a few sprints combining WoT TD, WoT protocol bindings, WoT Scripting, and his Web expertise
- He gains confidence in IoT and from now on considers himself as an expert in both IT and IoT



Now Joe is ready to tackle
his next IoT challenge:

Extend a hotel's building automation system with home automation components and give the house technician a nice user interface for operating it

And yes: Web of Things is THE methodology he'll choose

