Week 2: Development Tasks

Unit 7: Testing

Protocol-Level Testing

- Test code calls the app as a black box on the protocol level
- Allows for testing the contract towards the (OData) client

Test utilities:

- cds.serve() to expose your services
- 'supertest' for assertions against HTTP responses

```
const cds = require('@sap/cds')

describe('Bookshop on OData-level', () => {
  const app = require('express')()
  const request = require('supertest')(app)

   beforeAll(async () => {
    await cds.serve('CatalogService')
      .from(__dirname+'/../srv/cat-service').in(app)
  })

  test('GET with $select', async () => {
    const response = await request
      .get('/browse/Books?$select=ID,title')
      .expect('Content-Type', /^application\/json/)
      .expect(200)

    expect(response.body.value).toEqual([
      { ID: 201, title: 'Wuthering Heights' },
      { ID: 207, title: 'Jane Eyre' },
      { ID: 251, title: 'The Raven' },
      { ID: 252, title: 'Eleonora' },
      { ID: 271, title: 'Catweazle' }
    ])
  })
})
```

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CDS Service-Level Testing

- Allows for fine-grained white-box tests
- Use cds.ql APIs to test models and custom handlers
- No express server needed

```
const cds = require('@sap/cds')

describe('Bookshop on CDS service-level', () => {
  let srv, Books

  beforeAll(async () => {
   srv = await cds.serve('CatalogService')
              .from(__dirname+'/browse')
   Books = srv.entities.Books
   expect(Books).toBeDefined()
  })

  test('GET all books', async () => {
   const books = await srv.read (
      Books, b=>{ b.ID, b.title }
   )

   expect(books).toMatchObject([
    { ID: 201, title: 'Wuthering Heights' },
    { ID: 207, title: 'Jane Eyre' },
    { ID: 251, title: 'The Raven' },
    { ID: 252, title: 'Eleonora' },
    { ID: 271, title: 'Catweazle' }
   ])
  })
})
```

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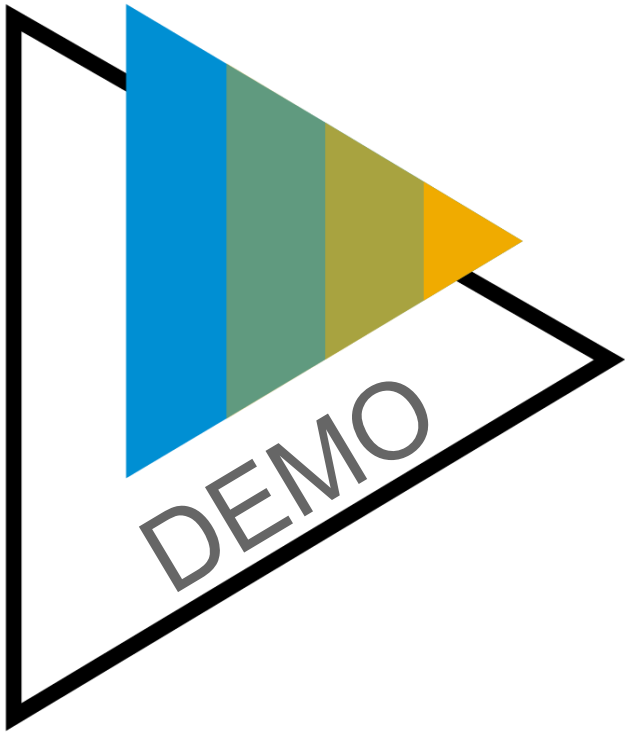
Testing

Demo



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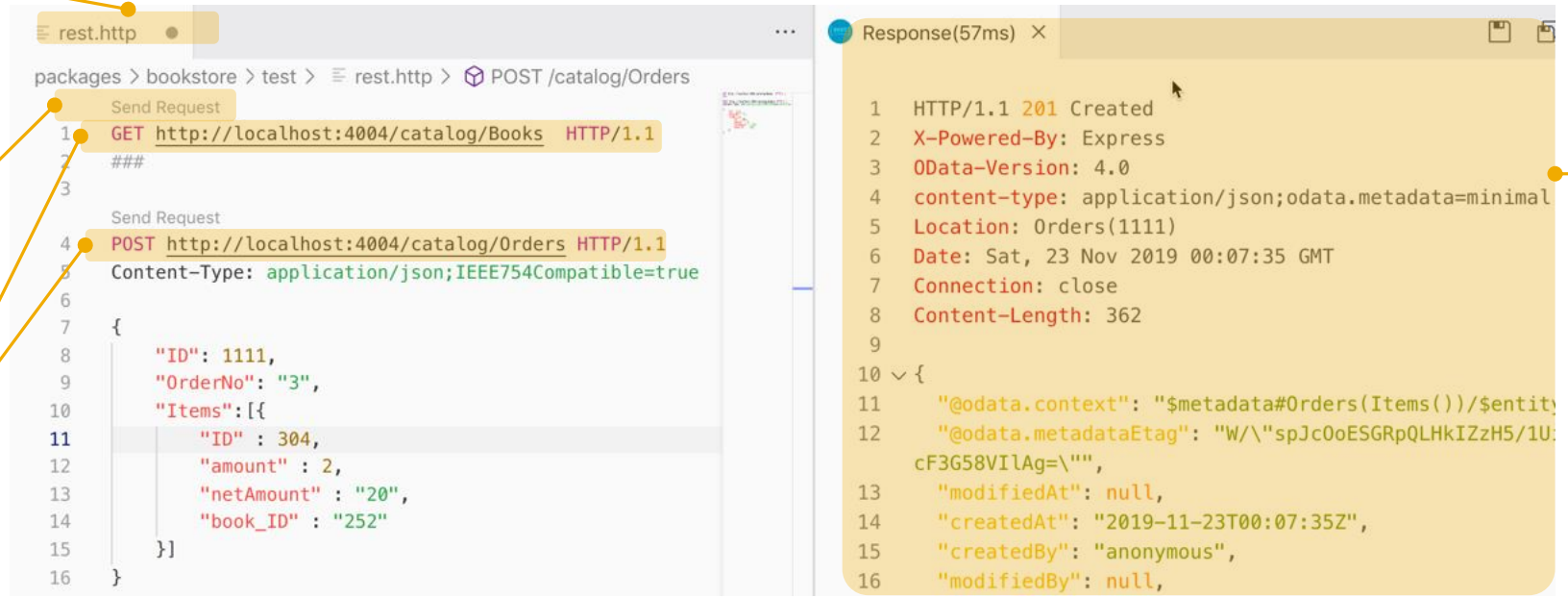
Testing

REST client for Visual Studio Code [1]

HTTP language support **.http** and **.rest** file extension

Quick clickable test

Easy to maintain multiple requests with payloads



View response in VS Code

[1] See documentation. Also available in SAP Business Application Studio

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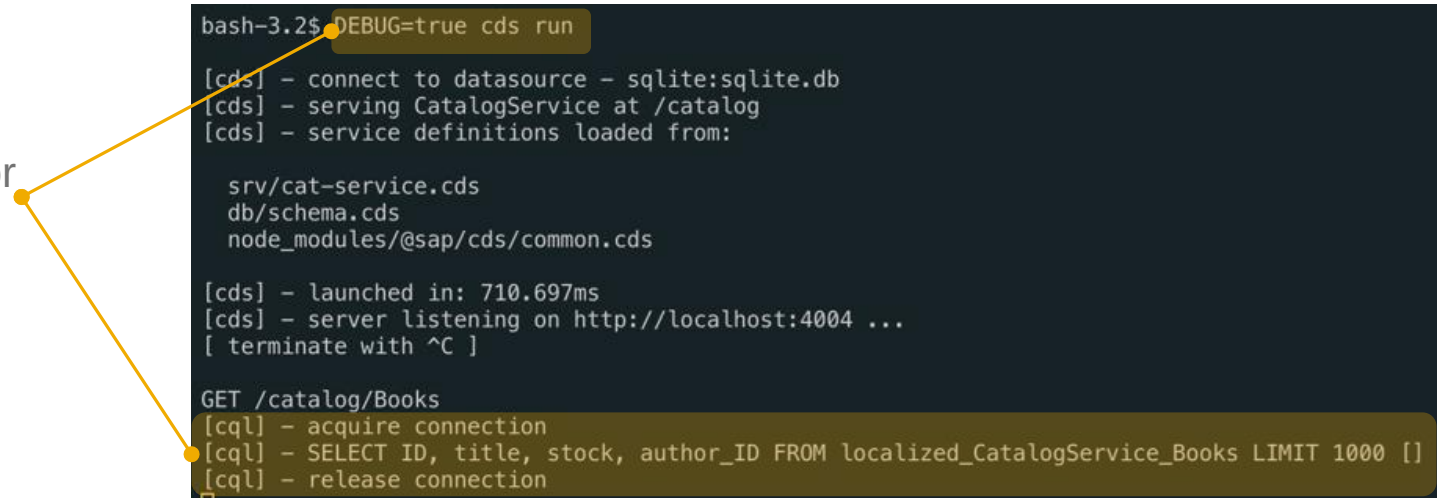
Testing

Enable Debug Switch

Enable debug switch for detailed traces



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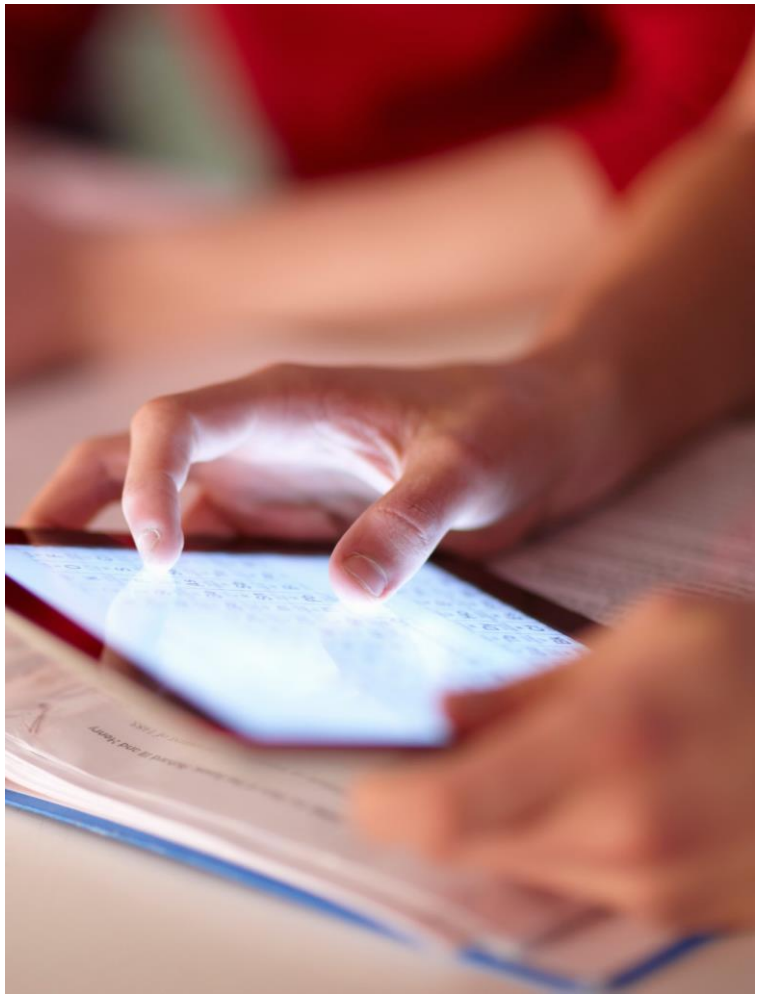
What you've learned in this unit

- How to write unit tests on protocol and service level
- The pros and cons of these approaches
- How to use REST client to test your service
- How to use CDS debug switch for troubleshooting

Also see week 4, unit 4 on how these tests can be executed in a continuous integration environment.



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