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NewFellows 2025
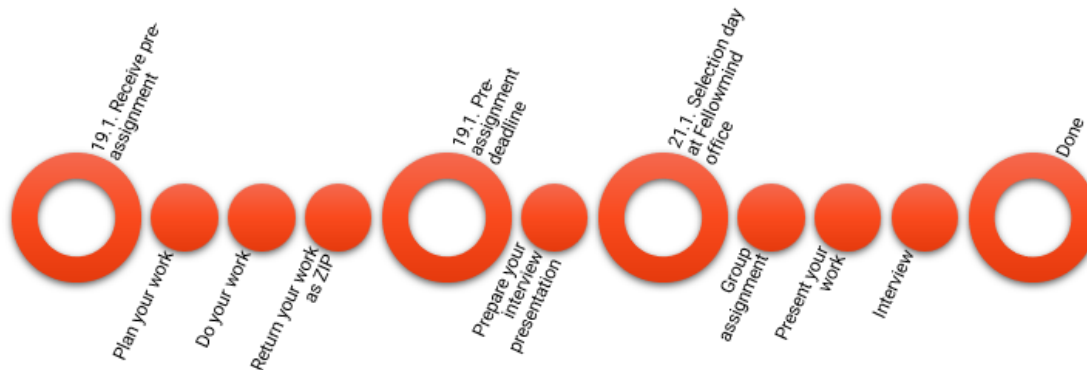Integration assignment

The assignment process

The high-level process goes as follows:

You may freely choose how to present your work using a demo, PowerPoint presentation, code walkthrough, document walkthrough, or by any other method.

Requirements and evaluation

You may use technologies of your own choice.
Evaluation points are given based on:

- **Implementation plan**: plan on how to complete the assignment. Which parts are you focusing on and what are you trying to deliver? Which building blocks you choose to solve the problem and why?
- **Readiness**: how much stuff you got done?
- **Quality**: how clean your code and other deliverables are?
- **Solution presentation and documentation**: we understand you may not get everything done in the given short period of time. We also value the presentation of your solution and your plan to developing it further.
- **Optional:** Extra points for automated testing

We do not expect that everyone would be able to finish everything in the given time – being able to manage that fact is part of the assignment.

Start documenting straight away from the beginning. We are interested in the process: How you progress working through the assignment and how you solve problems and think. Do not get stuck on a single issue but try to at least produce a solid starting point for the solution and plan how to continue from that. Focus first on areas where your strengths are.

Deliverables

After finishing the assignment or by the deadline, please send whatever work you have done (documentation, code, built program(s), presentation, sample files, …) in a ZIP-package named **[Firstname]_[Surname]**_NF2025.zip to the email addresses provided at the end of the document.

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In addition to this, **for the interview session, you are expected to have a presentation or a demo of your solution** in your preferred format. You may present from your own laptop by connecting to our video projector or screen, but to prepare for technical issues it is advisable to also email your presentation materials before the presentation to the same email addresses.

Assignment

Customer requirement

"We need to send invoices to our customers through an invoice operator, which expects the data in XML format. Our invoicing schedule is once a month. We have provided you access to the data which we have been filling out manually before. Can you also create the invoices as PDF-files to be physically printed and mailed to some of our customers? "
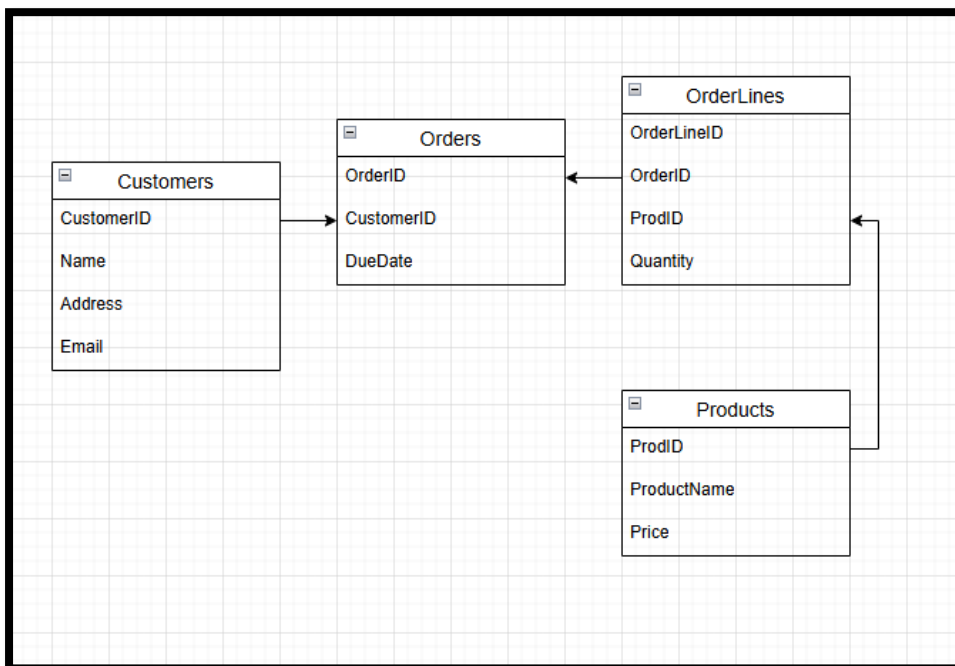
Assignment description

You have the source data in 4 database tables (**customers**, **products**, **orders**, **orderLines**). Your goal is to write the data in **pairs of XML and PDF files** in an Azure Blob Storage **Container named by your own name**. The XML file represents the invoice content as data and the PDF file represents the invoice as shown in web bank or printed on paper to be mailed.

Create an integration implementation to generate invoice files for the customers and upload them to the blob container. Name the files as:
[**Firstname**]_[**Surname**]_[**BillableCompany**]_Invoice.xml/pdf. The invoice operator (a third-party company) would read the invoice files from there. Examples of the invoices are provided in the pictures below together with the database schema. In addition to generating the required outputs, return a ZIP package that contains the generated files, code and documentation.

The database schema:

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XML schema:

```xml
<?xml version="1.0" encoding="utf-16"?>
<Invoice xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <CustomerName>Green Energy Corp.</CustomerName>
  <CustomerAddress>101 Oak St, Smalltown</CustomerAddress>
  <CustomerEmail>support@greenenergy.com</CustomerEmail>
  <DueDate>2025-06-25T00:00:00</DueDate>
  <Items>
    <Item>
      <ProductName>Smartphone Stand</ProductName>
      <Quantity>250</Quantity>
      <Price>14.99</Price>
      <Amount>3747.5</Amount>
    </Item>
    <Item>
      <ProductName>Portable Charger</ProductName>
      <Quantity>250</Quantity>
      <Price>24.99</Price>
      <Amount>6247.5</Amount>
    </Item>
    <Item>
      <ProductName>Bluetooth Speaker</ProductName>
      <Quantity>250</Quantity>
      <Price>39.99</Price>
      <Amount>9997.5</Amount>
    </Item>
  </Items>
  <Total>19992.5</Total>
</Invoice>
```

Sample PDF file:

[LOGO]

Invoice
Creation da

Due Date:

Billed to:
Customer name
Customer Billing Address
Customer Email

Billed from:
name
address
email

Product	Qty	Price	Amount
item 1	1	1,75 €	1,75 €
item 2	2	2,50 €	5,00 €
item 5	1	5,90 €	5,90 €
item 8	3	3,49 €	10,47 €
Total			23,12 €

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Definition of done:

- You can read data from database
- Data is mapped to the invoice files (XML and PDF)
- Files are sent to blob storage
- Code is tested and working
- Integration is documented

System information

We have provided you with source data and storage for deliverables. If you cannot connect to the services because of an authorization error, please copy the connection information manually. Copy-pasting from a PDF may copy incorrect characters even if you don't see them.

Furthermore, if these technologies are not working for you, you may replace them with an implementation and technology of your own choice.

Azure SQL Database connection string:

Server=tcp:integrationnewfellows2025.database.windows.net,1433;Initial Catalog=orderdb;Persist Security Info=False;User ID=SATraineeLogin;Password=N3wF3llows!;MultipleActiveResultSets=False;Encrypt=True;Trust ServerCertificate=False;Connection Timeout=30;

Azure Blob Storage SAS URL(+Token):

https://strinttrainingdata2025.blob.core.windows.net/newfellows2025?sp=raw&st=2025-01-13T10:28:51Z&se=2025-03-31T17:28:51Z&sip=0.0.0.0-255.255.255.255&spr=https&sv=2022-11-02&sr=c&sig=EHE2yckjPyjD4%2BjwMYBdjalqJaMw7DNasU8XjHuULO8%3D

Return emails:

mikko.kunnari@fellowmind.fi

cc: juho.vainio@fellowmind.fi, patrik.backlund@fellowmind.fi

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