Interview exercise for Backend software engineer (Ultima)

Description:

We have the following design requirements:

1. Upload process is an independent process that receives upload requests from other services
2. Upload all files that match a regex. Note that not all files might exist when the uploader starts.
3. The folder structure in the source shall be maintained in the destination
4. When file is finished uploading validate it was uploaded correctly

Bonus requirements:

1. The source folder shall be monitored for file changes (creation and modification)
2. Once a big enough chunk of new data (can be hard coded or configurable) is written this data will be uploaded to cloud to the same destination file
3. Check if this mean the process need to be always on and keep the cloud file open or it can be periodically activated
4. Design and implement a solution that is fail safe, meaning, if the service fails, upon startup you can resume the existing uploads

The input request for the upload process shall include the following:

|  |  |  |
| --- | --- | --- |
| Name | Type | description |
| Upload\_id | String | Identifier of the upload request |
| Source\_folder | String | Source folder to monitor |
| Destination\_bucket | String | The bucket name in the destination storage provider |
| Regex | String | Optional, a regular expression to filter the files to be uploaded |

Guidelines:

1. As for the cloud vendor, you can choose between GCP, S3, Azure, which ever you feel comfortable with
2. GitHub or GitLab links to the code are recommended (if this is an issue, you can send a zip file with the code)

The exercise includes two parts:

1. Design a high level architecture for the system
2. Implement the system