

# Software Delivery Pipeline Manual Book

## I. Set up the environment.

- Ensure you have the AWS CDK installed and initialized in your local environment.  
`npm install -g aws-cdk`
- And for the Python environment, make sure you have the necessary CDK libraries.

## II. Finish the CDK python file

- Write the CDK Application
  - Define Imports: Import required AWS CDK libraries for managing AWS resources.
- Define AWS Resources
  - **S3 Bucket:** This bucket is used to store the build artifacts  
`artifact_bucket = s3.Bucket(self, "ArtifactBucket")`
  - **CodeCommit Repository:** A Git repository to store the source code of the Java project.  
`code_repo = codecommit.Repository(  
 self, "JavaProjectRepo",  
 repository_name="java-project",  
 code=codecommit.Code.from_asset("path/to/java-project.zip")  
)`
  - **CodeBuild Project:** Defines the build project that uses the source from CodeCommit and outputs to the S3 bucket.  
`build_project = codebuild.Project(  
 self, "JavaBuildProject",  
 source=codebuild.Source.code_commit(repository=code_repo),  
 build_spec=codebuild.BuildSpec.from_source_filename('buildspec.yml'),  
 ...  
)`
  - **IAM Role for CodePipeline:** A role that CodePipeline assumes to access other AWS services.  
`pipeline_role = iam.Role(  
 self, "CodePipelineServiceRole",  
 assumed_by=iam.ServicePrincipal("codepipeline.amazonaws.com"),  
 ...  
)`
  - **CodePipeline:** Orchestrates the workflow of pulling code from CodeCommit, building it via CodeBuild, and handling artifacts.  
`pipeline = codepipeline.Pipeline(  
 self, "DeliveryPipeline",  
 ...  
)`
  - **Stages in Pipeline:** Define the stages and actions in the pipeline  
`source_output = codepipeline.Artifact()`

```
build_output = codepipeline.Artifact()
```

```
pipeline.add_stage(...); pipeline.add_stage(...);
```

### III. Finish the Deployment of the stack

- Run “cdk deploy” to deploy this stack to your AWS account.
- Validate: Check AWS Console to ensure all resources are created and linked correctly.
- Test the Pipeline: Make a commit to the CodeCommit repository and observe if the pipeline triggers a build and stores artifacts in S3.