

UG Internship Report

STUDENT'S NAME: Gaurav V

USN: 1MS18CS046

Academic Year: 2021 - 2022

Internship Period : Aug 9th 2021 – Nov 15th 2021, 3 Months

Supervisors : Mr. N. S. Srivathsa

MSRIT Mentor: Dr. Shilpa Shashikant Chaudhari

Offer and Completion Letter

PRIVATE AND CONFIDENTIAL

Mr. Gaurav V
#29/30 Rajajinagar 4th Block, 58th Cross,
Bangalore- 560010
Ph: +91 7022851931

Dear Gaurav V,

Subject: Letter of Intent to offer you Student internship / Project work at our Bangalore Facility.

Based on your application and subsequent interviews with us, we are happy to express our intention to offer you student internship/ Project work starting **August 02, 2021**, for a period of **13 weeks**. A formal offer letter with all terms will be issued after you submit the following documents.

- 1) Letter (Original) issued by your Principal/Head of Department addressed to Unisys India Private Limited authorizing you to do the internship/ project work with us
- 2) Photocopies of all education certificates/ transcripts/ degrees starting from your schooling. You are requested to bring your originals along with photocopies. Unisys representative will scrutinize them and return to you the same day
- 3) Please note that we will be issuing you an offer of Student internship to undertake project with us and not an offer of employment

Pursuant to your accepting our offer, you will be required to sign with Unisys India Private Limited, a contract of Apprenticeship, enumerating the terms and conditions, your duties and responsibilities as an Apprentice.

During your student internship/ project work you will be eligible for a stipend of **INR 15,000/- (Fifteen Thousand Rupees only)** per month based on attendance and satisfactory report from Unisys Project Manager supervising your work. Professional and other applicable tax deductions and if you wish to avail our canteen facility all applicable deductions will be made from your stipend.

We thank you for your interest in Unisys and look forward towards a mutually beneficial association soon.

Yours Sincerely,

Signature:

Seema Rani
Director - Recruiting
Unisys India Private Limited
Date: June 22, 2021

ACCEPTED

Student Name: Gaurav V

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Unisys India Private Limited
Regd. Office : RGA Tech Park,
SEZ, 3 to 11 Floors, Block-3, Wing B,
Survey No. 31/1, Chikkakannali Village,
Varthur Hobli, Sanjapur Road,
Bengaluru East Taluk,
Bengaluru - 560 035, Karnataka, India.
Tel : + 91 (80) 4032 3400
Fax : + 91 (80) 4032 3850
Web : www.unisys.com
Email: unisysindia@unisys.com
CIN: U74899KA1994PTC048023

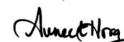
January 03, 2022

TO WHOMSOEVER IT MAY CONCERN

*Certified that the project work entitled **Digital Bill of Materials** carried out by **Gaurav V**, USN: **1MS18CS046** a bonafide student of **M. S. Ramaiah Institute of Technology, Bangalore** in partial fulfillment for the award of **B.E in Computer Science of the M. S. Ramaiah Institute of Technology, Bangalore** under **VTU** during the year **09th August, 2021 to 15th November, 2021**.*

It is certified that, he has completed the Internship satisfactorily.

For Unisys India Private Limited,



Avneet Hora
Sr. Director - Human Resources

Please note this document does not require a manual signature



Bengaluru:
SEZ (Unit I), 3rd, 5th, 6th, 7th, 8th, 10th and 11th Floor: RGA Tech Park, Block - 3, Wing - B, Survey No. 31/1, Chikkakannali Village, Varthur Hobli, Bengaluru East Taluk - 560035, Karnataka, India
SEZ (Unit II), 4th Floor and 5th Floor: RGA Tech Park, Block - 3, Wing - B, Survey No. 31/1, Chikkakannali Village, Varthur Hobli, Bengaluru East Taluk - 560035, Karnataka, India
6th Floor, South Block, KSIIDC, Plot No: 1, 2, 3 & 4, IT/IT Park, Rajajinagar Industrial Estate, Bengaluru - 560010, Karnataka, India Tel: +91 (80) 4159 8888

Hyderabad:
SEZ (Unit I & II), 7th Floor of Block 2, DLF Cybercity, Plot No: 129 to 132, Gachibowli, Hyderabad - 500019, India Tel: +91 (40) 6624 1000, Fax: +91 (40) 6634 1371

Mumbai:
Kallias Esplanade, No. E 102, First Floor, "E" Wing, LBS Road, Chhatkopar (West), Mumbai - 400086, Maharashtra, India

Acknowledgement

First, I would like to thank **Mr. N.S. Srivathsa, Senior Engineering Director, Unisys India Private Limited** for giving me the opportunity to do an internship in their organization, and highly indebted for guiding and making me industry-ready.

I also would like to thank all the people who worked along with me at **Unisys India Private Limited** for their patience and openness. It is indeed with a great sense of pleasure and immense sense of gratitude that I acknowledge the help of these individuals.

I am thankful to **Dr. N. V. R Naidu**, Principal MSRIT for the facilities provided to accomplish this internship.

I would like to thank our Head of the Department **Dr. Annapurna P. Patil** for her constructive criticism throughout my internship.

I would like to thank **Dr. S. Rajarajeswari**, Department Internship coordinator, and my Internal supervisor **Dr. Shilpa Shashikant Chaudhari** for their support.

I am extremely grateful to my department staff members and friends who helped me in the successful completion of this internship.

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Executive Summary

- My internship started on the 9th of August 2021. Once the onboarding formalities were complete, I was introduced to my manager and teammates. The project description and requirements were explained to me, and I was assigned with trainings and tasks to complete for the same.
- The training courses assigned to me were the ones that would come handy when I worked on my project. Apart from the project specific trainings, I also attended the generic training track where topics like Payroll, Conversion procedures, and mandatory web content-based courses were explained in much detail.
- The Digital Bill of Materials (DBoM) enables companies to easily establish a secure network for sharing software, hardware and manufacturing bill of materials. Organizations will be able to automate attestation sharing and validation for establishing trust and transparency while reducing the cost of operation.
- Internship ended on 15th November 2021, in the last week we worked on handing over the work and presenting the work to a larger team.

About the company – Unisys India Pvt Ltd

- Unisys Corporation is an American multinational information technology (IT) services and consulting company headquartered in Blue Bell, Pennsylvania.
- They have helped businesses and governments around the world by bringing technological innovation.
- They offer vast number of services like outsourcing and managed services, systems integration and consulting services, high end server technology, cybersecurity and cloud management software, and maintenance and support services.
- They also organize Cloud 20/20, which is an annual hackathon for students from all over India.
- The company has evolved and adapted over time, but their passion for innovation and helping clients succeed has remained constant over the years.

About the Project - Digital Bill of Materials (DBoM)

- Digital Bill of Materials (DBoM) enables companies to easily establish a secure network for sharing software, hardware and manufacturing bill of materials.
- A Bill of Materials (BoM) is a list of everything on a pallet or box or unit of transport that moves from one set of hands to another. A Digital Bill of Materials is a list of every component inside any type of product as each moves from one set of hands to another.
- **Vision :** Provide a common platform for managing supply chain information

About the Project - Digital Bill of Materials (DBoM)

- Organizations will be able to automate attestation sharing and validation for establishing trust and transparency while reducing the cost of operation
- It is more than just sharing Bill Of Materials, as it can be used in various other use cases like:
 - Manufacturing
 - Compliance and regulatory requirements
 - Internal information Sharing
- Creating a Digital BoM for a product is simply the act of signing a shared ledger at each step of production and consumption. With digital certificates establishing identity and a distributed ledger run by a consortium of large industry producers providing scale as well as nonrepudiation and forensic record keeping, each step of each physical and virtual product component can be documented with a high degree of surety.

About the Project - Digital Bill of Materials (DBoM)

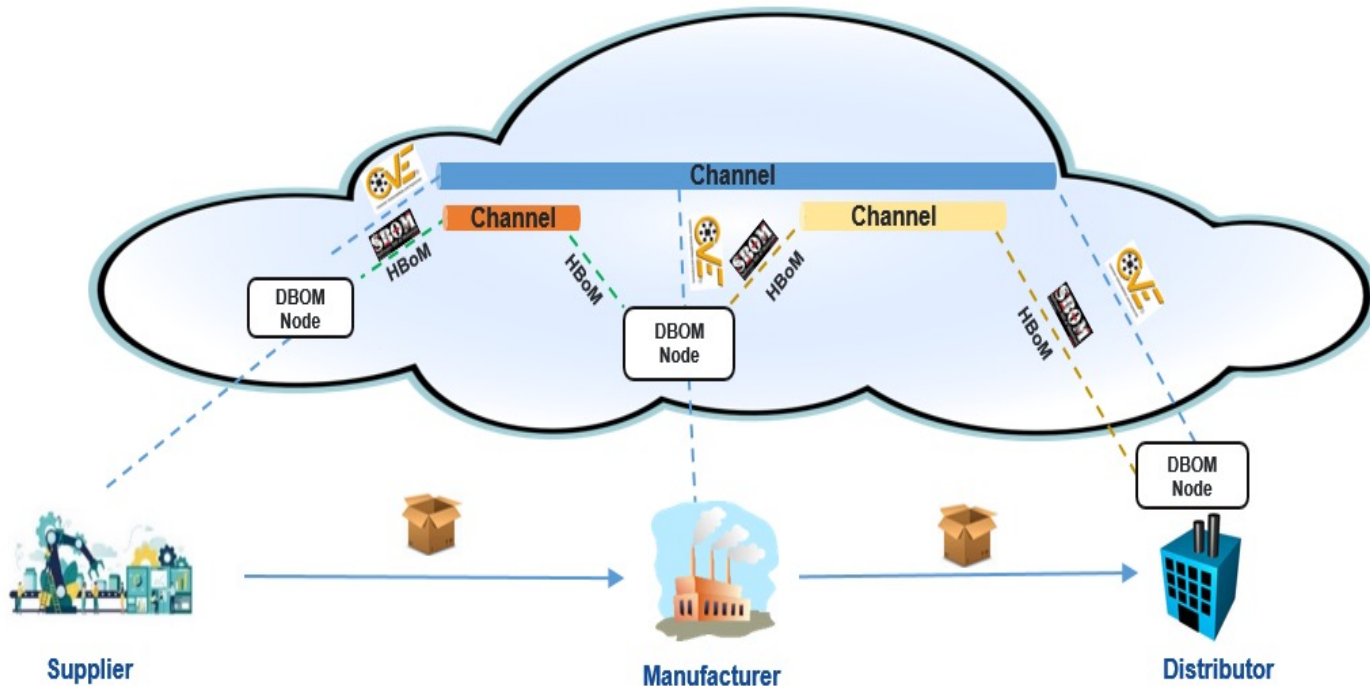


Fig 1. DBOM Architecture

Nodes are interfaces to process and store data in a standardized manner on Channels.

Channels allow organizations to implement controls on their value chain of shared data, in compliance with policy.

Opportunities

- In the first month we got introduced to the team and got a brief description of the project, we had multiple inductions related to the company's policies, values and organizational structure.
- Along with the inductions we had multiple informatory sessions on technologies relevant to the project.
- Once we got a grasp of the new technologies and understood the problem statement we started working on the project.
- Initially we were given tasks on developing UI mockups.
- Once that was completed, we started working on the frontend and backend simultaneously.
- Daily standups were conducted to check the teams and personal progress.
- At the end, the code was reviewed and handed over after multiple checks and iterations.

Learnings

Technical Skills

- Learnt new frontend frameworks and tools like AngularJS and PrimeNG components.
- Learnt new backend technologies like Golang, NodeJS, Swagger OpenAPI.
- Also gained skills of using tools like Postman, Figma and a version control system like git.

Soft Skills

- Communication skills by conversing with various professionals over the duration of 3 months in various contexts of the project and the organization.
- Work experience that can be essential when transitioning into the technology industry.
- Understood the essence and importance of teamwork in any professional setup and the major role it plays in the success of a project.

Challenges Faced

- The learning curve is quite steep when transitioning into a workplace and I had to start quite slowly in the initial weeks but as time passed by, I was able to pick up pace and finish all assignments in the stipulated time frame.
- The cultural differences between colleges and professional work environments are quite different. It sure takes time to understand the office culture. Since every organizational culture varies from office to office.
- As digital bill of materials is a new concept it took meticulous effort to understand and develop the proof of concept.
- Replicating Figma mock-ups to actual webpages took some time initially as AngularJS was a new web framework for me.

Implementation

How it works

01 Set up your account

02 Set up a DBoM node

03 Create & subscribe to channels

04 Share your Hardware Bill of Materials (HBOMs) and Software Bill of Materials (SBOMs)

The screenshot shows the 'Review' step of the 'Quick Start Wizard' in the 'Resource Manager'. The wizard progress bar indicates three steps: 'The Basics', 'Repositories and Channels', and 'Review' (the current step). The 'Review' section contains a summary of the configuration for creating a Basic DBoM Node. The details are as follows:

Field	Value
Action	Creating a Basic DBoM Node
Resource Name Prefix	USYS_TEST
Resource Configuration	Verified
Tags	USYS_TEST_RESO... DELETEME-2010...
Approximate Cost	\$55.65/month

On the right side of the review box, there is a 'Ready To Create' status with a clock icon and the text: 'Once you click on create, the resource will be deployed to your subscription'.

Use the quick start to set up your own DBoM node

The screenshot shows the 'Subscribe to' page for a channel named 'USYS_ABC_CHAN_01'. The page includes a search bar at the top and a sidebar on the left with navigation options like 'Channels', 'Repositories', and 'Access Control'. The main content area shows details for the channel, including its name, description, and a 'Subscribe' button. A dark overlay box at the bottom right of the screenshot contains the text: 'Create and define policies on your channels or subscribe to channels from your partners'.

The screenshot shows the DBoM SaaS sign-up page. It features the DBoM logo at the top. Below the logo is a sign-up form with fields for 'Username', 'Email', and 'Password'. There is also a checkbox for 'Remember Me' and a 'Sign Up' button. Below the form, there is a link to 'Forgot Your Password?'. At the bottom of the page, there is a section for 'Using your organization credentials?' with a 'Login with SSO' button. A dark overlay box at the bottom right of the screenshot contains the text: 'Set up an account on the DBoM SaaS using the sign-up button'.

References

- <https://www.unisys.com/dbom/>
- <https://dbom-project.readthedocs.io/en/latest/>
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