VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI

Internship Report

on

"Exalca Technologies"

A report submitted in partial fulfilment of the requirements for the award a degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

Submitted by

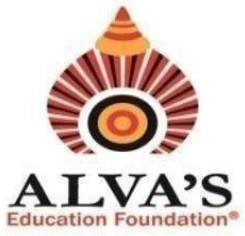
HEMANTH B **4AL20CS047**

Under Supervision of

Dr. Bramha Prakash H P

Associate Professor

Computer Science and Engineering



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MOODBIDRI-574225, KARNATAKA

2023 – 2024

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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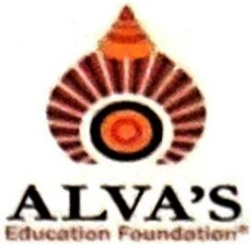

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the Internship report on "EXALCA TECHNOLOGIES" submitted by HEMANTH B(4AL20CS047) is work done by him and submitted during the academic year 2023–24, in partial fulfilment of the requirements for the award of the degree of BACHELOR OF ENGINEERING in COMPUTER SCIENCE AND ENGINEERING

BP 7/5/24

Internship Mentor
Department of CSE

BP 7/5/24.

Internship Coordinator
Department of CSE

Head of the Department
Department of CSE

Examiners

Name	Signature
1)	
2)	

Acknowledgement

First I would like to thank **Exalca Technologies** for giving me the opportunity to do an internship withinthe organization.

I also would like all the people that worked along with me in **Exalca Technologies** with their patience and openness they created an enjoyable working environment.

It is indeed with a great sense of pleasure and immense sense of gratitude that I acknowledge the help of these individuals.

I am highly indebted to Managing Trustee **Mr. Vivek Alva** and Principal **Dr. Peter Fernandes, Alva's Institute of Engineering and Technology, Mijar** for the facilities provided to accomplish this internship.

I would like to thank my Head of the Department **Dr. Manjunath Kotari, Professor, Department of Computer Science and Engineering** for his constructive criticism throughout my internship.

I would like to thank my internship Coordinator **Dr.Bramha Prakash H P, Associate Professor, Department of Computer Science and Engineering** for his guidance throughout my internship.

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

HEMANTH B

4AL20CS047

INTERNSHIP CERTIFICATE

Date: May 07th 2024

INDUSTRY PRACTICE COMPLETION CERTIFICATE

This is to certify that Mr. Hemanth B, BE. CSE from Alvas Institute of Engineering and Technology, Moodubidri, has successful completed his internship program on "SAP" at Exalca Technologies Pvt Ltd. with effect from February 12, 2024 to May 03 2024

Yours Sincerely

PRADYUM RAVASAB ALAGURE
Digitally signed by PRADYUM RAVASAB ALAGURE
Date: 2024.05.07 10:44:02 +05'30'

Authorized Signatory

Exalca Technologies Pvt Ltd,
GR Plaza, # 433, 3rd Floor, 17th Cross,
19th Main, HSR Layout, Sector 4,
Bangalore – 560 102

P : + 91 80 4111 5686
E : support@exalca.com
W: www.exalca.com

CIN: U74900KA2016PTC086365

ABSTRACT

Exalca, Bangalore: Abstract

Exalca is a major Business Solutions and Services partner that provides proven industry dementing solutions, primarily on SAP. Exalca provides significant benefits to businesses by automating processes, streamlining business transactions, and increasing competitive advantages through technology-based business solutions. Exalca provide services ranging from discovering the proper solutions, pushing a holistic approach to the project initiative from design to completion, and ensuring that our customers always obtain measurable business advantages from their SAP investment.
As an ISO 9001:2015 certified organisation, our quality management practices centre on customer focus, continuous process improvement, and strong corporate governance.

DAILY LOGS

DAY	DATE	TOPICS COVERED
Day 1-Day2	12/02/2024 – 14/02/2024	Company Introduction
Day 3-Day 10	15/02/2024 – 21/02/2024	Sap modules, sap r/3 architecture, ABAP workbench
Day 11-Day 19	22/02/2024 – 29/09/2024	ABAP – Statements , Data Types
Day 20-Day 30	1/03/2024 – 10/03/2024	DATA Dictionary, Internal Tables, SQL Query
Day 31- Day 40	10/03/2024 – 20/03/2024	SQL Complex Query, Performance Tunning, Parallel Processing:
Day 40-Day 52	20/03/2024 – 2/4/2024	UI5(xml, JavaScript ,CSS)

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INTERNSHIP OBJECTIVES

The internship aims to enhance proficiency as a trainee developer in SAP technology, focusing on both front-end and back-end development aspects. By deepening expertise in ABAP coding language and mastering SAPUI5 framework, including UI5 XML, JavaScript, CSS, and HTML, the objective is to build robust solutions and create intuitive user interfaces following SAP Fiori design principles. Integration of front-end and back-end systems within the SAP landscape will be explored, alongside adopting Agile methodologies for effective collaboration and iterative development cycles. Emphasis will be placed on quality assurance and continuous learning, fostering effective communication, client interaction, and professional growth within the SAP ecosystem.

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CHAPTER 1

INTRODUCTION

Exalca stands as a pivotal partner in the realm of Business Solutions and Services, specializing in delivering innovative solutions primarily centered around SAP technology. With a steadfast commitment to excellence, we empower businesses to optimize their operations, streamline transactions, and gain competitive advantages through cutting-edge technological interventions. This report delves into our comprehensive suite of services, highlighting our holistic approach to project management, unwavering dedication to client satisfaction, and adherence to stringent quality management practices. As an ISO 9001:2015 certified organization, we prioritize customer focus, continuous improvement, and robust corporate governance, ensuring that our clients consistently derive measurable business advantages from their investments in SAP.

Fig-1.1 Logo of Exalca

CONTACT DETAILS:

Websites: https://exalca.com/

Headquarters: Bangalore

Year Founded: 2016

Address:

Exalca Technologies Pvt Ltd

CIN: U74900KA2016PTC086365

GR Plaza, # 433, 3rd Fl oor, 17th Cross,

E : 19th Main, HSR Layout, Sector 4,

Bangalore – 560 102

CHAPTER 2

PROJECT DETAILS

2.1 PROJECT AREA/DOMAIN

This internship focused on SAP Technology , Core ABAP , SQL UI5 Design .

2.2 PROBLEM STATEMENT:

The current system lacks efficient processes for managing three key aspects: the Join Form, Claim Form, and HR ALV Report. The Join Form, utilized for onboarding new hires, lacks automation for storing employee details in the database and triggering welcome emails with attached offer letters. Meanwhile, the Claim Form, essential for processing employee expenses related to company events, lacks a streamlined mechanism for submitting travel expenses, leave requests, and expense amounts. Additionally, there's a need for a robust HR ALV Report system to display Claim Form data in an ABAP List Viewer format, enabling HR personnel to review and potentially extend claim dates with ease. These inefficiencies hinder productivity and necessitate the implementation of integrated solutions to streamline processes and enhance overall efficiency in HR operations.

2.3 EXPLANATION OF WORKING OF PROPOSED IDEA:

In response to the identified challenges within the HR operations concerning the Join Form, Claim Form, and HR ALV Report, a comprehensive solution is proposed to streamline processes, enhance data management, and foster better communication between HR and employees.

The proposed solution for the Join Form revolves around the establishment of a centralized database system capable of efficiently storing employee details upon form submission. This database will be equipped with automated triggers to generate welcome emails for new hires, attaching their offer letters as required. By automating this process, the onboarding experience for new employees is significantly improved, ensuring a smoother transition into the organization. Additionally, the centralized database allows for better organization and management of employee information, facilitating easier access and retrieval when needed for various HR purposes.

Addressing the challenge of the Claim Form involves the implementation of a dedicated database separate from that of the Join Form. This distinct database will be specifically designed to manage expense claims efficiently, allowing employees to input their travel details, including expense amounts and leave requests. To ensure timely processing, the system will enforce a 60-day window for submitting claims. Furthermore, automated email notifications will be deployed to inform both HR and the respective employee upon claim submission, ensuring prompt communication and processing. This streamlined approach not only expedites the claim process but also enhances transparency and accountability in expense management within the organization.

The proposed solution for the HR ALV Report entails integrating the database from the Claim Form into an ALV format, providing HR personnel with a user-friendly interface for data visualization. By presenting claim data in a structured and easily interpretable format, HR can efficiently review and analyze expense claims. Moreover, to provide flexibility in managing claims, a functionality will be implemented allowing HR to extend claim dates by up to 30 days directly through the ALV interface. This empowers HR personnel with greater control and agility in handling claim-related matters, ultimately contributing to improved decision-making and operational efficiency.

CHAPTER 3

METHODOLOGY

3.1 Planning and Design:

The planning and design phase of the proposed solution entails a meticulous approach to understanding and addressing the identified challenges within HR operations. Through comprehensive requirement analysis, stakeholder consultation, and prototyping, we aim to develop robust solutions for the Join Form, Claim Form, and HR ALV Report. This process involves iterative design iterations based on feedback from HR personnel, IT teams, and end-users to ensure alignment with organizational objectives and user expectations. Additionally, careful consideration will be given to the technical architecture, focusing on scalability, security, and interoperability with existing HR systems. Once the planning and design are finalized and approved by key stakeholders, we will proceed to the development phase, laying a solid foundation for the successful implementation of the proposed solutions.

3.2 Asset Creation, Scripting and Functionality Development:

In this phase, the focus shifts towards the creation of assets and the development of scripting and functionality required for the proposed solutions. Asset creation involves designing user interfaces, database schemas, and system architecture based on the finalized planning and design specifications. Scripting tasks entail writing code logic, validation scripts, and automation scripts to ensure the seamless operation of the Join Form, Claim Form, and HR ALV Report functionalities. Additionally, functionality development involves implementing features such as automated triggers for email notifications, data validation mechanisms, and user authentication protocols to enhance the overall usability and effectiveness of the solutions. Throughout this phase, rigorous testing and quality assurance measures will be implemented to validate the functionality and performance of the developed assets, ensuring they meet the desired requirements and deliver optimal user experience.

3.3 Integration and Testing

The integration and testing phase marks a crucial stage in the implementation process, focusing on seamlessly integrating the developed assets and conducting comprehensive testing to ensure their functionality and performance. Integration involves merging the developed components, including user interfaces, databases, scripts, and functionalities, into a cohesive system. This process entails configuring connections, establishing data flows, and verifying interoperability between different modules to ensure smooth communication and interaction. Subsequently, rigorous testing procedures, including unit testing, integration testing, and system testing, will be conducted to validate the functionality, reliability, and security of the integrated system. Testing will encompass scenarios simulating real-world usage, edge cases, and error conditions to identify and address any defects or inconsistencies. Additionally, user acceptance testing (UAT) will be conducted with end-users to gather feedback, validate requirements, and ensure that the solution meets their needs and expectations. Through meticulous integration and testing processes, we aim to deliver a robust and reliable solution that enhances efficiency, accuracy, and user satisfaction within the HR operations.

.

CHAPTER 4 IMPLEMENTATION

4.1 SOURCE CODE

Code of join form:

```
*---------------------------------------------------------------------*
***INCLUDE ZJOIN_FROM_USER_COMMAND_900I01.
*---------------------------------------------------------------------*
*&---------------------------------------------------------------------*
*&      Module  USER_COMMAND_9000  INPUT
*  purpose: In this program details are filled and based on the button click the
*           operation is going to perform
* package:YHEMANTH
*&---------------------------------------------------------------------*
*       text
*---------------------------------------------------------------------*
MODULE user_command_9000 INPUT.

data:lt_pdf type table of ZPDF_TABLE,
     ls_pdf type ZPDF_TABLE.

TYPES: BEGIN OF ty_byte_string,
         byte_string TYPE sstring, ''
      END OF ty_byte_string.

     TYPES: table_of_bytes TYPE TABLE OF ty_byte_string,

           LS_FILE TYPE ty_byte_string

     DATA: lv_filename TYPE string,

          lv_file_content TYPE table_of_bytes,

           ls_file TYPE ty_byte_string.

         LV_MA TYPE C,

           LV_F TYPE C.

     DATA: ls_data1 type ZMANAG_TABLE,

          lt_data1 type TABLE OF ZMANAG_TABLE.

      DATA: lv_user_date TYPE d,

           it_data TYPE truxs_t_text_data,

            GV_FILE TYPE IBIPPARMS-PATH,

            P_FILE TYPE rlgrap-filename.
```

```
lv_user_date = ZEMPLO_TABLE-DATE_OF_JOIN.using System.Collections.Generic;
 select   *
  from ZMANAG_TABLE
  into CORRESPONDING FIELDS OF TABLE lt_data1
  where MANAGER_ID = ZEMPLO_TABLE-MANAGER_ID.
  READ TABLE lt_data1 into ls_data1 INDEX 1.
  IF SY-SUBRC EQ 0.
    ZEMPLO_TABLE-MANAGER_NAME = LS_DATA1-manager_name.
    ZEMPLO_TABLE-manag_email = LS_DATA1-manag_email.
  ENDIF.
  LS_DATA-manager_id = ZEMPLO_TABLE-MANAGER_ID.
  LS_DATA-employee_id = ZEMPLO_TABLE-EMPLOYEE_ID.
  LS_DATA-employee_name = ZEMPLO_TABLE-EMPLOYEE_NAME.
  LS_DATA-designation = ZEMPLO_TABLE-DESIGNATION.
  LS_DATA-email = ZEMPLO_TABLE-EMAIL.
  LS_DATA-location = ZEMPLO_TABLE-LOCATION.
  LS_DATA-phone_no = ZEMPLO_TABLE-PHONE_NO.
  LS_DATA-blood_group = ZEMPLO_TABLE-BLOOD_GROUP.
  if LV_MA = 'X'.
    LS_DATA-gender = 'MALE'.
  ELSEIF LV_F = 'X'.
    LS_DATA-gender = 'FEMALE'
```

```
CASE SY-UCOMM.

 WHEN 'SUBMIT'. "when submit button

    IF lv_user_date > sy-datum.
     clear:ZEMPLO_TABLE-DATE_OF_JOIN.
     MESSAGE ' Date cannot be beyond today.' TYPE 'E'.
    ELSE.
     LS_DATA-date_of_join = ZEMPLO_TABLE-DATE_OF_JOIN.
    ENDIF.

  if LS_DATA-manager_id is not INITIAL and  "field validation for all the fields
     LS_DATA-employee_id is not INITIAL and
     LS_DATA-employee_name is not INITIAL and
     LS_DATA-designation  is not INITIAL and
     LS_DATA-email is not INITIAL and
     LS_DATA-date_of_join  is not INITIAL and
     LS_DATA-location   is not INITIAL and
     LS_DATA-phone_no is not INITIAL and
     LS_DATA-blood_group   is not INITIAL and
     LS_DATA-manag_email is not INITIAL and
     LS_DATA-manager_name is not INITIAL and
     LS_DATA-manager_id is not INITIAL and
     LS_DATA-gender is not INITIAL.

     CLEAR:LS_dATA1.
     CALL SCREEN 9001 STARTING AT 40 20  "calling the dialog box.
               ENDING AT 100 40.
  else.
    message 'all fields required' type 'E'.
  endif.

 WHEN 'CLEAR'.  "this is for clear button
  clear : ZEMPLO_TABLE-EMPLOYEE_ID,
          ZEMPLO_TABLE-MANAGER_ID,
          ZEMPLO_TABLE-EMPLOYEE_NAME,
          ZEMPLO_TABLE-DESIGNATION,
          ZEMPLO_TABLE-EMAIL,
          ZEMPLO_TABLE-DESIGNATION,
          ZEMPLO_TABLE-DATE_OF_JOIN,
          ZEMPLO_TABLE-LOCATION,
          ZEMPLO_TABLE-PHONE_NO,
          ZEMPLO_TABLE-BLOOD_GROUP,
          ZEMPLO_TABLE-MANAGER_NAME,
          ZEMPLO_TABLE-manag_email.
```

```
    if ZEMPLO_TABLE-EMPLOYEE_ID is not initial and lv_xstring is not initial.
      ls_pdf-employee_id = ZEMPLO_TABLE-EMPLOYEE_ID.
      ls_pdf-pdf = lv_xstring.
      ls_pdf-pdf_name = GV_FILE.
      if ls_pdf is not INITIAL.
        insert into ZPDF_TABLE VALUES ls_pdf.
        clear:ls_pdf.
      else.
        MESSAGE 'Work area dose not have data' type 'E'.
      endif.
    else.
      MESSAGE 'employe id is empty and file is not attached' type 'E'.
     endif.


ENDCASE.

ENDMODULE.                 " USER_COMMAND_9000  INPUT
```

CLAIM FORM CODE:

```
*---------------------------------------------------------------------
-------*
***INCLUDE ZCLAIM_FORM_USER_COMMAND_90I01.
*---------------------------------------------------------------------
-------*
*&---------------------------------------------------------------------
-------*
*&      Module  USER_COMMAND_9000  INPUT
*&---------------------------------------------------------------------
-------*
*   purpose:this a claim form program where based on the button
click the
*           the operation is going to perform when clicked on Re
lease button
*           the status is going to updated as relised and date ,
claim date ,claim end date
*           is going to be stored in database. and same for canc
el button also
*  package:YHEMANTH
*---------------------------------------------------------------------
-------*
MODULE user_command_9000 INPUT.
  DATA:ls_final TYPE zclaim_table,
       lt_final TYPE TABLE OF zclaim_table.

  DATA:ls_data1 TYPE zemplo_table,
       ls_limit TYPE zlimit_table,
       obj TYPE REF TO zclaim_cl,
       lv_fin TYPE zrelease_num.
  ls_data-employee_id = zclaim_table-employee_id.
  SELECT SINGLE *
    FROM zclaim_table
    INTO CORRESPONDING FIELDS OF ls_final
    WHERE employee_id =  zclaim_table-employee_id.

  IF zclaim_table-employee_id = ls_final-employee_id.
    zclaim_table-claim_end_date = ls_final-claim_end_date.
    zclaim_table-employee_name = ls_final-employee_name.
    zclaim_table-manager_id = ls_final-manager_id.
    zclaim_table-manager_name = ls_final-manager_name.
    zclaim_table-date_of_travel = ls_final-date_of_travel.
    zclaim_table-manag_email = ls_final-manag_email.
  ELSE.
```

```
IF zclaim_table-date_of_travel > sy-datum.
     CLEAR:zclaim_table-date_of_travel.
     MESSAGE ' Date cannot be beyond today.' TYPE 'E'.
   ELSE.
     ls_data-date_of_travel = zclaim_table-date_of_travel.
   ENDIF.
   SELECT SINGLE
   employee_id
   employee_name
   email
   designation
   manager_id
   manag_email
   manager_name
   FROM zemplo_table
   INTO CORRESPONDING FIELDS OF ls_data1
   WHERE employee_id = zclaim_table-employee_id.
   zclaim_table-employee_name = ls_data1-
employee_name."employe name
   ls_data-employee_name = ls_data1-employee_name.
   zclaim_table-manager_id = ls_data1-
manager_id."manager id
   ls_data-manager_id = ls_data1-manager_id.
   zclaim_table-manager_name = ls_data1-
manager_name."manager name
   ls_data-manager_name = ls_data1-manager_name.
   zclaim_table-manag_email =  ls_data1-
manag_email. "manager mail ID
   ls_data-manag_email = ls_data1-manag_email.
   zclaim_table-email = ls_data1-email. " employee mail id
   zclaim_table-claim_end_date = ls_data-
date_of_travel + 90."claim end date
   ls_data-claim_end_date = ls_data-date_of_travel + 90
```

```
  SELECT SINGLE
  designation
  limit_days
  limit_amount
  FROM zlimit_table
  INTO CORRESPONDING FIELDS OF ls_limit
  WHERE designation = ls_data1-designation.
  zclaim_table-travel_to_date = zclaim_table-date_of_travel + ls_limit-limit_days.
  ls_data-travel_to_date = zclaim_table-date_of_travel + ls_limit-limit_days.
ENDIF.
CASE sy-ucomm.
  WHEN 'RELEASE'. " when clicked on release
    IF  zclaim_table-employee_id IS NOT INITIAL AND
        zclaim_table-employee_name IS NOT INITIAL AND
        zclaim_table-manager_id IS NOT INITIAL AND
        zclaim_table-manager_name IS NOT INITIAL AND
        zclaim_table-manager_name IS NOT INITIAL AND
        zclaim_table-manag_email IS NOT INITIAL AND
        zclaim_table-email IS NOT INITIAL AND
        zclaim_table-date_of_travel IS NOT INITIAL AND
        zclaim_table-travel_from_date IS NOT INITIAL AND
;
```

```
 IF ls_data IS NOT INITIAL.
  INSERT INTO zclaim_table VALUES ls_data."inserting cancel status to data base
    IF sy-subrc EQ 0.
      MESSAGE 'Data inserted successfully' TYPE 'S'.
    ELSE.
      MESSAGE 'Data not Inserted' TYPE 'E'.
    ENDIF.
  ELSE.
    MESSAGE 'work Area is empty' TYPE 'E'.
  ENDIF.
 ENDIF.
CALL METHOD obj->empmail "sending mail to employee
  EXPORTING
    ls_data = ls_data.
IF sy-subrc EQ 0.
  MESSAGE 'Mail sent to employee' TYPE 'S'.
ELSE.
  MESSAGE 'mail not sent' TYPE 'E'.
ENDIF
```

```
CALL METHOD obj->manemail   "sending mail to manager
        EXPORTING
          ls_data = ls_data.
       IF sy-subrc EQ 0.
        MESSAGE 'Mail sent to manager' TYPE 'S'.
       ELSE.
        MESSAGE 'mail not sent to manager' TYPE 'E'.
       ENDIF.
       CALL METHOD obj->hremail "sending mail to HR.
        EXPORTING
          ls_data = ls_data.
       IF sy-subrc EQ 0.
        MESSAGE 'Mail sent to HR' TYPE 'S'.
       ELSE.
        MESSAGE 'mail not sent HR' TYPE 'E'.
       ENDIF.
     ELSE.
      MESSAGE 'All the field are required' TYPE 'E'.
     ENDIF.
     APPEND ls_data TO lt_data.
*     cl_demo_output=>display( lt_data ).
     CLEAR: ls_data,lt_data.
```

4.2 SNAPSHOTS

Join Form:

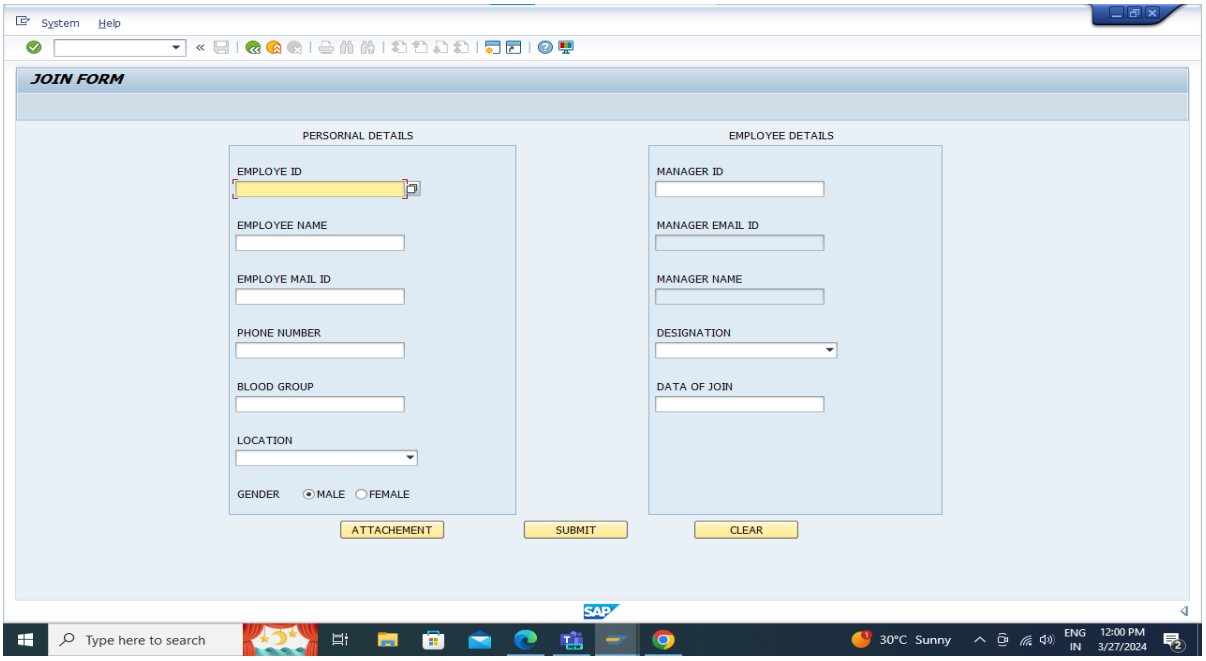

Fig 4.2.1 : main screen of join form

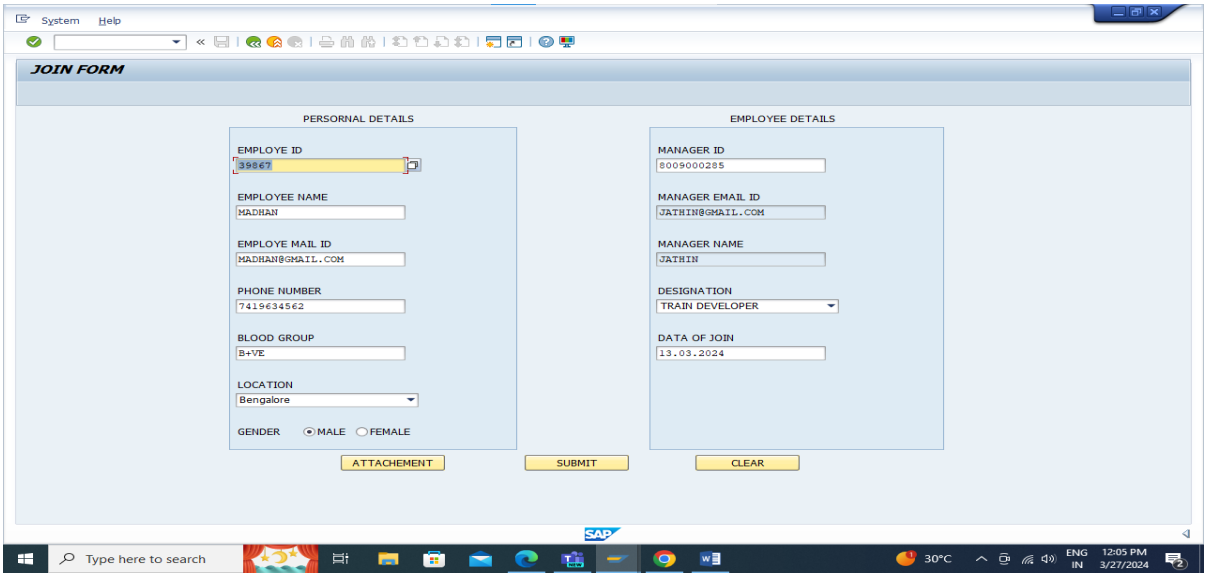

Fig:4.2.2 Details filled screen

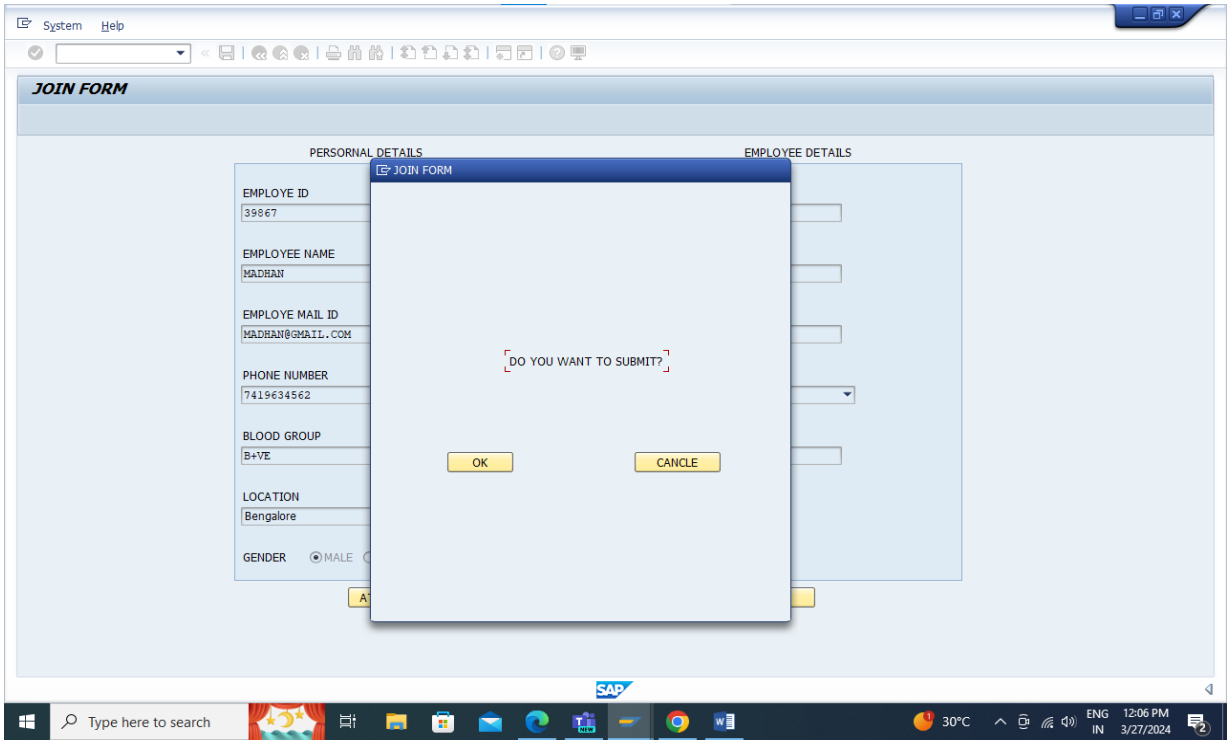

Fig: 4.2.3 : Asking for storing the data

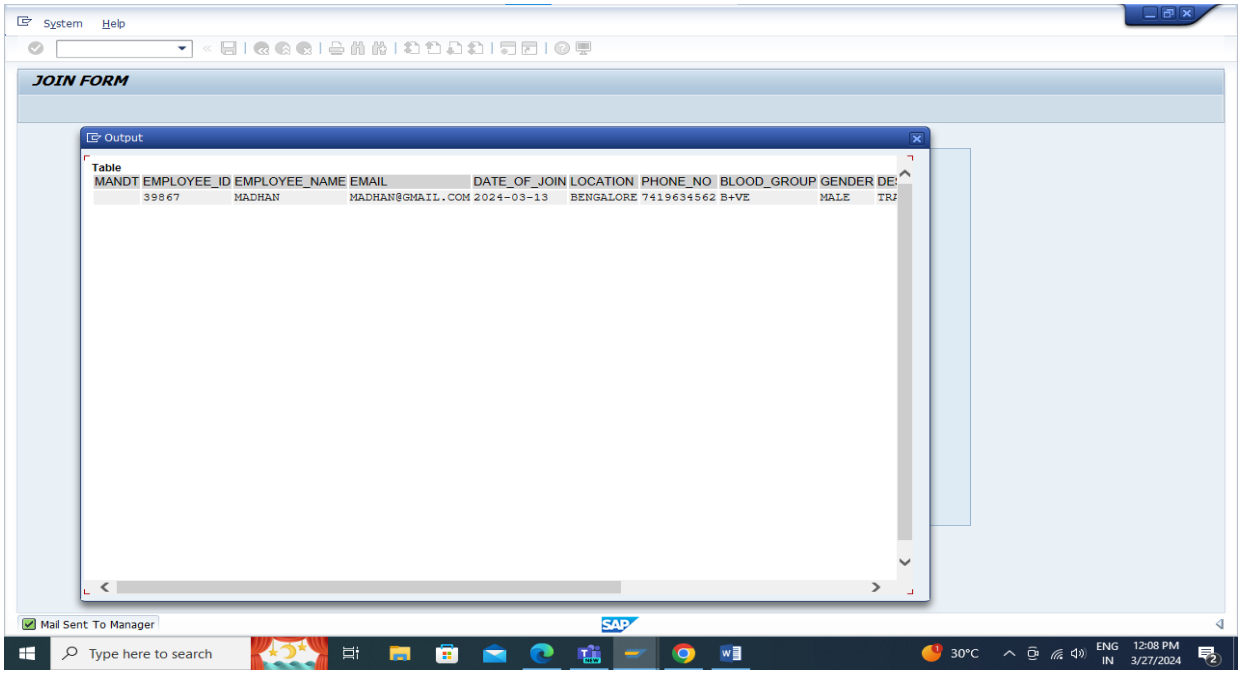

Fig:4.2.4 : Storing the details in database

Claim form:

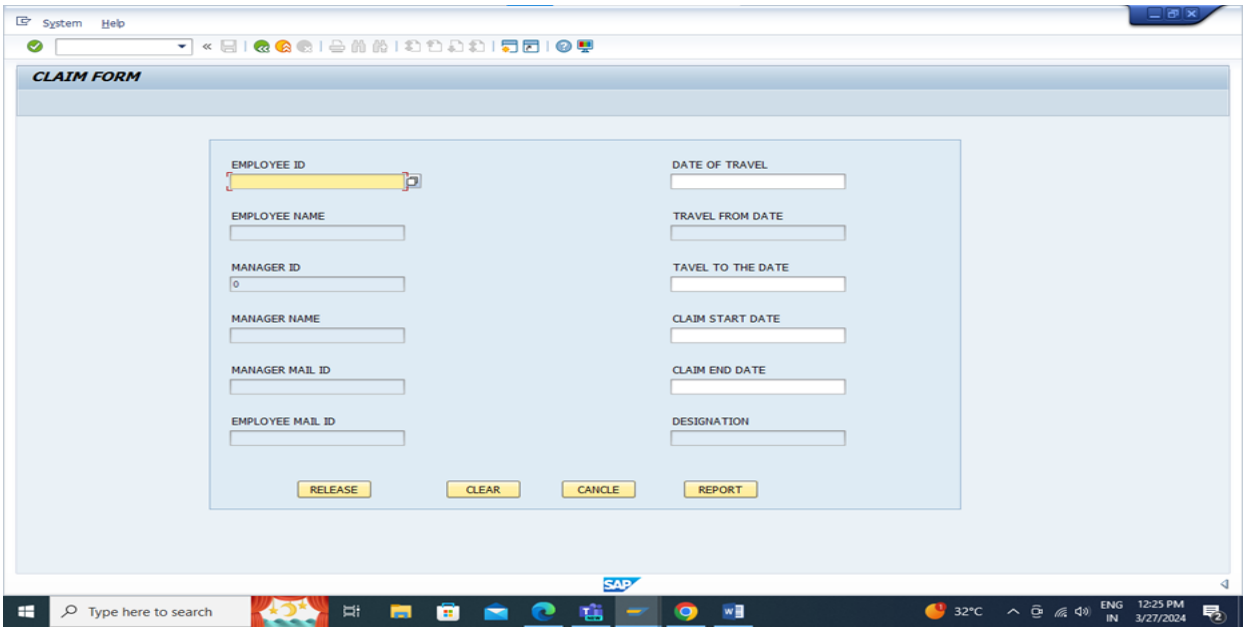

Fig 4.2.5: Main page of claim form

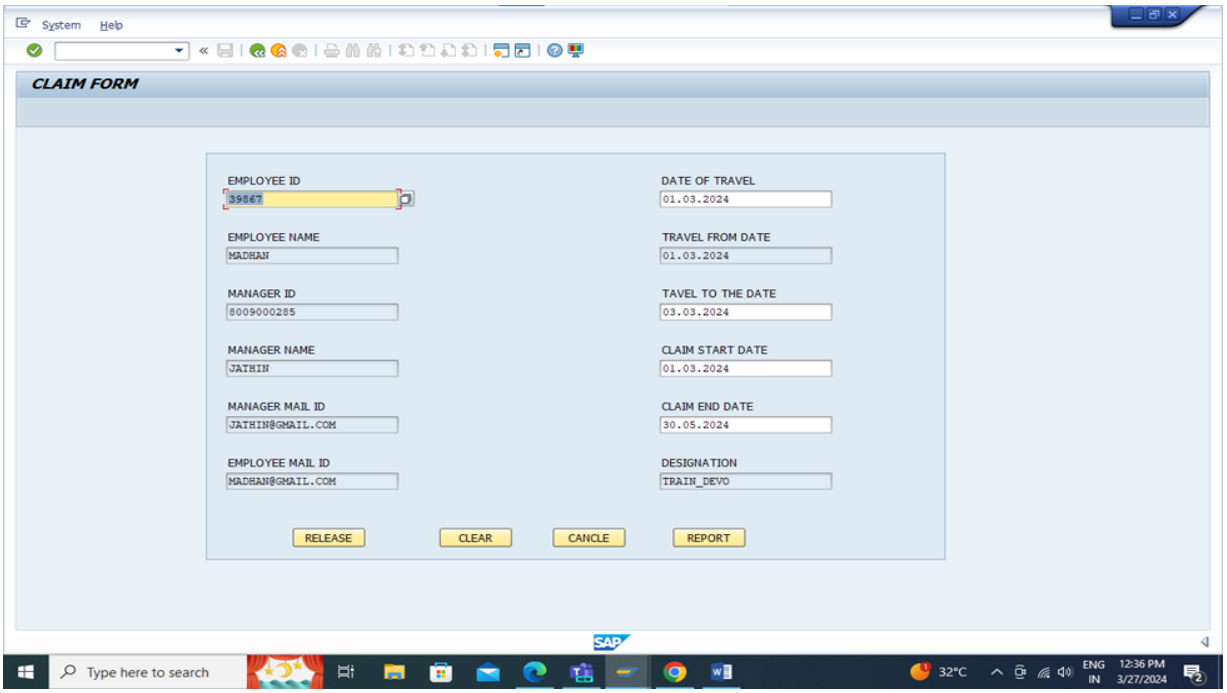

Fig 4.2.6: details entery

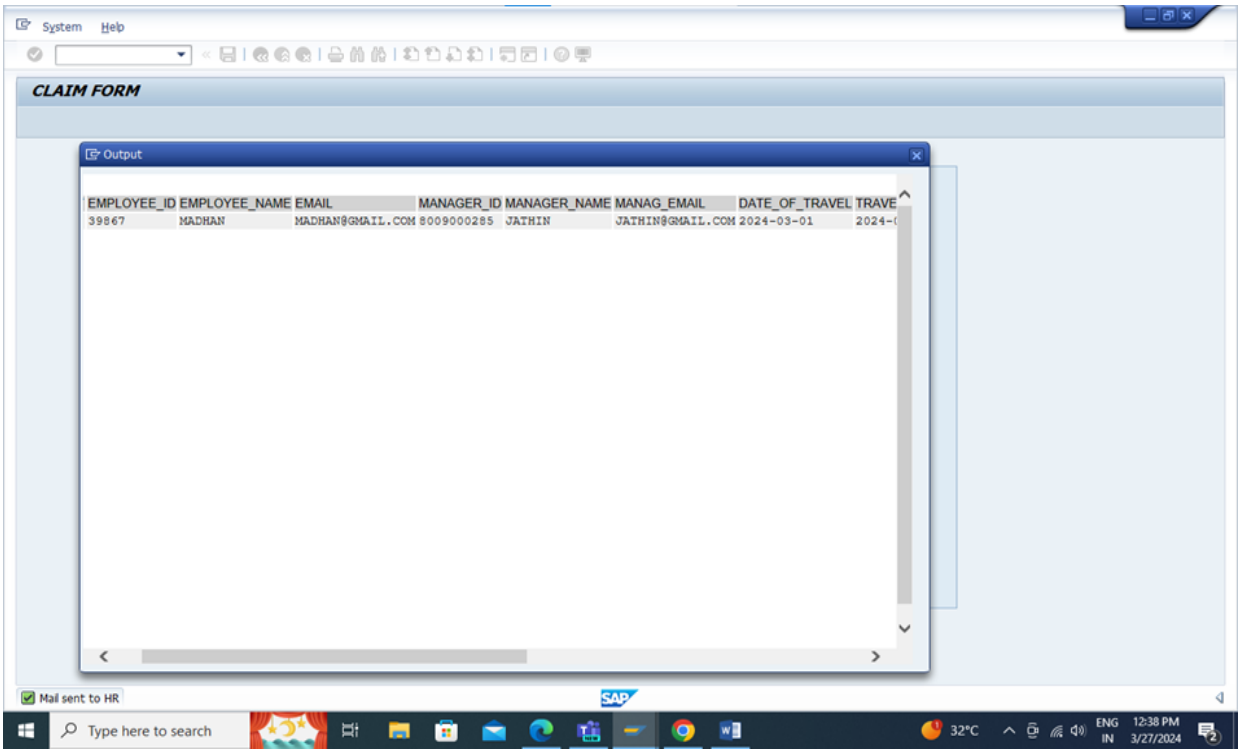

Fig 4.2.7: data stored in DataBase

HR ALV REPORT:

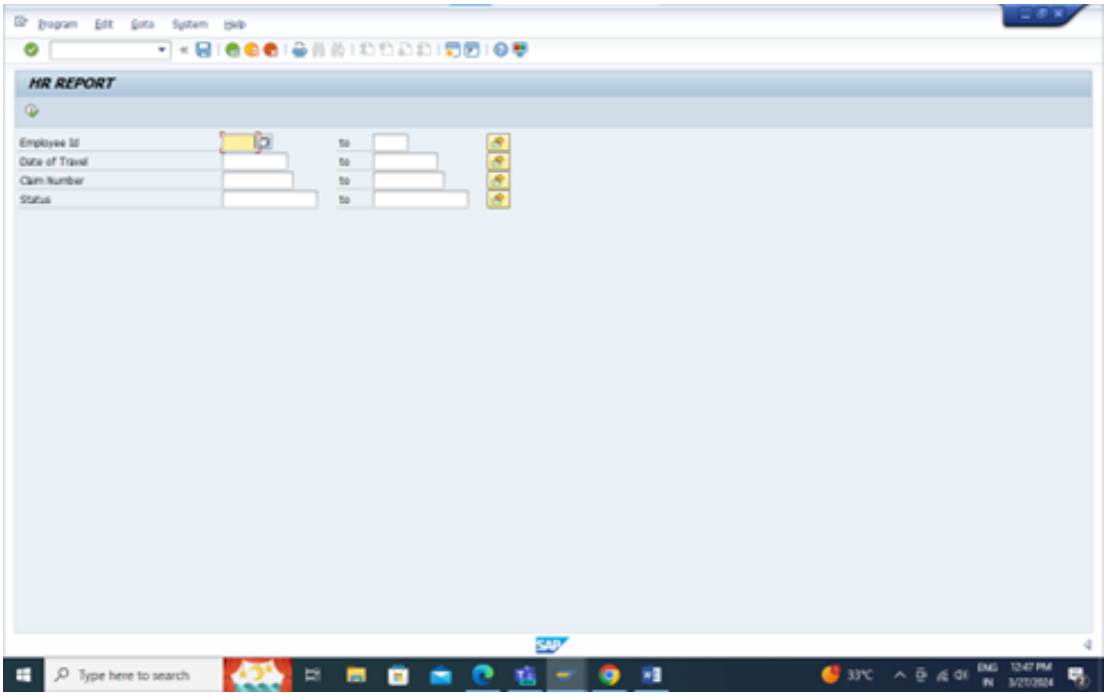

Fig 4.2.8: Main page of HR ALV

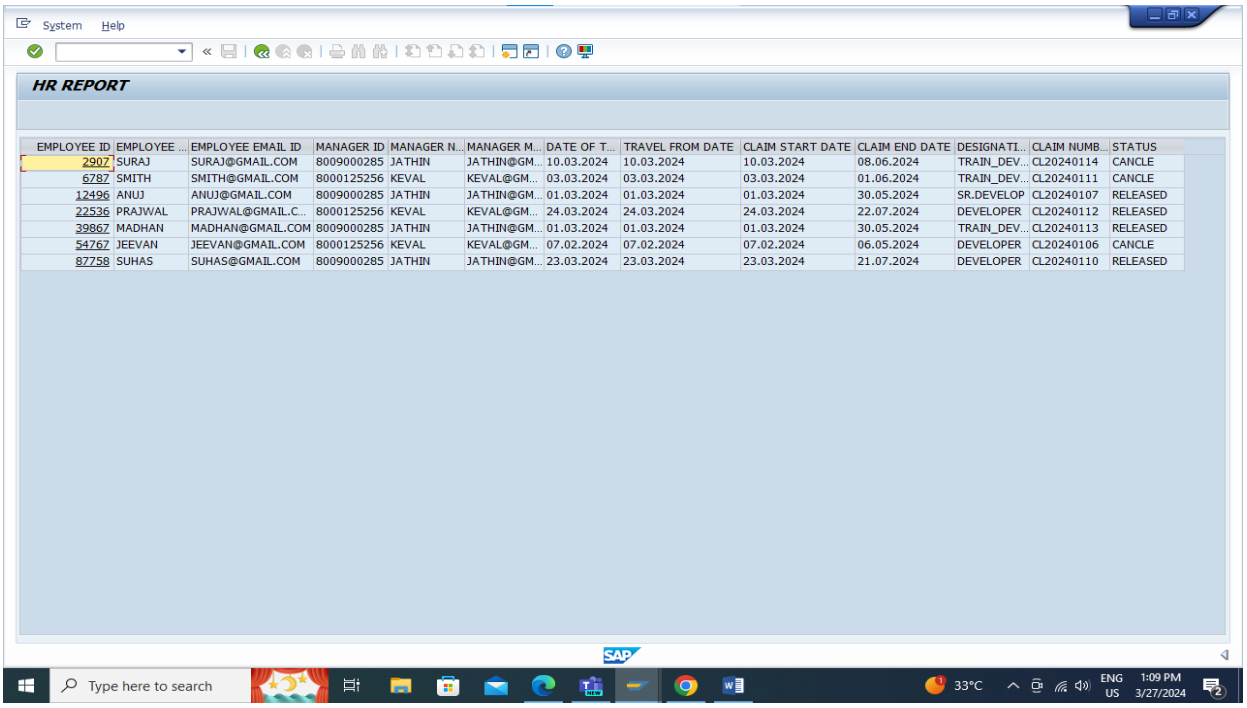

Fig :4.2.9 : ALV report of the claim form

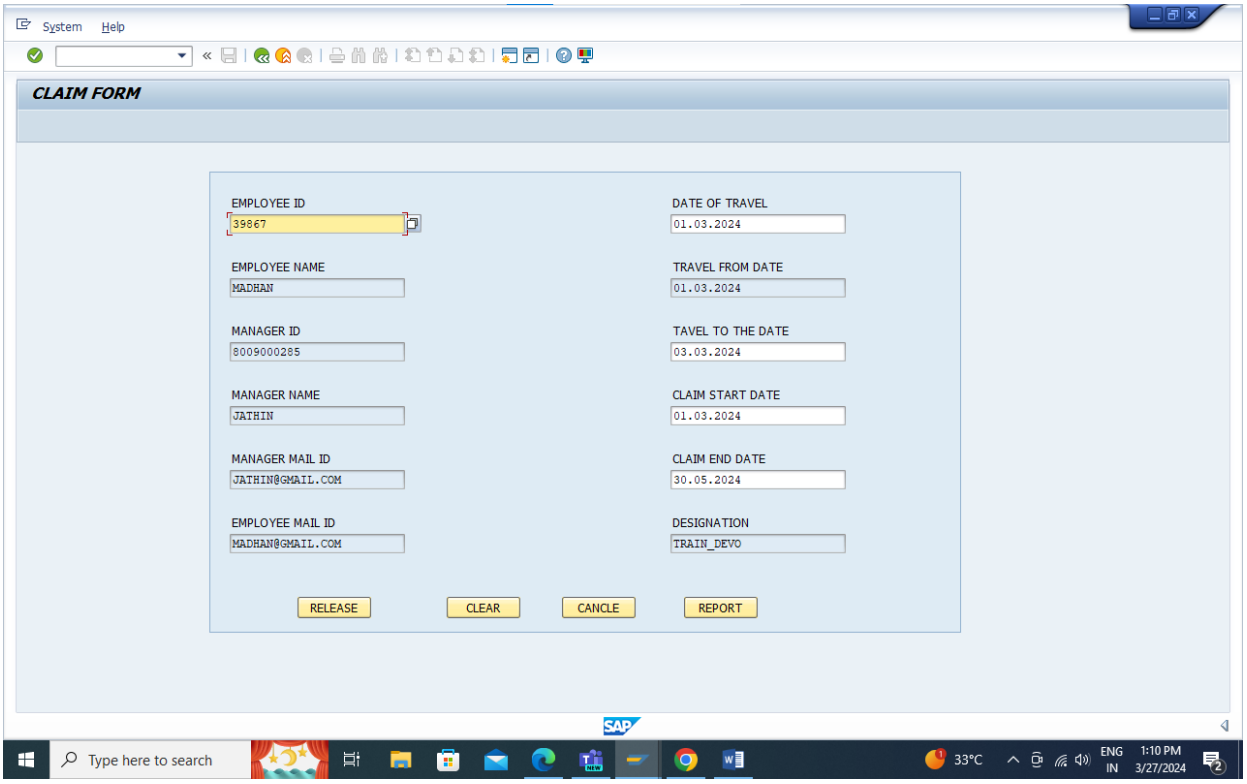

Fig:4.2.10: Hotsport click on Employee ID

CHAPTER 5

INTERNSHIP BENEFITS

Interning at Exalca presents a unique opportunity to immerse oneself in the dynamic world of business solutions and services, particularly in SAP technology. As an intern, I gain invaluable hands-on experience in a cutting-edge industry, honing skills and deepening your understanding of SAP solutions. Mentorship from seasoned professionals provides guidance and support, facilitating your personal and professional growth. Networking opportunities with colleagues and industry experts open doors to potential career prospects. Additionally, internship at Exalca enhances practical experience and dedication to professional development. Successful completion of the internship may even lead to offering a promising pathway to a rewarding career in the field.

CHAPTER 6

CONCLUSION

In summary, the internship experience at Exalca offers a profound journey of growth and discovery within the realm of business solutions and services. Through hands-on involvement in projects and collaboration with seasoned professionals, interns gain invaluable insights into the practical application of cutting-edge technologies, particularly in SAP. Beyond technical proficiency, the internship fosters the development of essential soft skills and a deeper understanding of industry dynamics. As interns conclude their experience at Exalca, they depart with not only enhanced capabilities but also a sense of empowerment and readiness to contribute meaningfully to the ever-evolving landscape of business solutions