

# **ONLINE EXAMINATION**

## **APPLICATION**

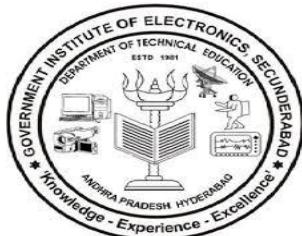
A Project Report submitted in partial fulfillment of the requirements for the  
Award of

**SPECIAL DIPLOMA IN ELECTRONICS WITH SPECIALIZATION**  
**IN**  
**COMPUTER PROGRAMMING**

By

**PANDUGA BHAVITHA**

**17054-CP-039**



**GOVERNMENT INSTITUTE OF ELECTRONICS**

EAST MARREDPALLY, SECUNDERABAD-500026



**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING**

HYDERABAD, TELANGANA

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November 2020 – May 2021

Under the guidance of

**Mrs. P. ARUNA**

Senior Manager





**ELECTRONICS CORPORATION OF INDIA LIMITED**  
(A Government of India Enterprise)

**INFORMATION TECHNOLOGY SERVICES DIVISION**

**ECIL, HYDERABAD-500062  
TELANGANA, INDIA.**

Phone: 04027186244.  
EMAIL: [sravank@ecil.co.in](mailto:sravank@ecil.co.in)

---

## **CERTIFICATE**

PANDUGA BHAVITHA bearing PIN: **17054-CP-039** student of final year in **SPECIAL DIPLOMA IN ELECTRONICS WITH SPECIALIZATION IN COMPUTER PROGRAMMING** from **GOVERNMENT INSTITUTE OF ELECTRONICS, SECUNDERABAD** has undergone industrial training for a period of six months from 11-11-2020 to 10-05-2021 at **ITSD** division, **INFORMATION TECHNOLOGY AND TELECOM GROUP, ELECTRONICS CORPORATION OF INDIA LIMITED, HYDERABAD.**

This project entitled "**ONLINE EXAMINATION APPLICATION**" is a bonafide work done by the candidate and the Project Report has been prepared under our guidance as part of their special diploma in electronics. She is very sincere and hardworking and her conduct is very good.

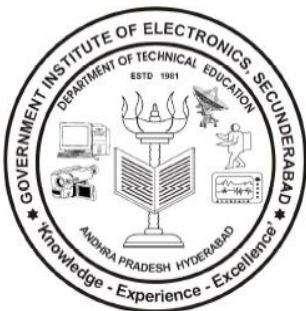
*P.D.Ramya Teja*

**PROJECT GUIDE:**

P D RAMYA TEJA  
TECHNICAL OFFICER,  
ITSD, IT&TG,  
ECIL, HYDERABAD.

**SECTION IN-CHARGE:**

P. ARUNA  
SENIOR MANAGER,  
ITSD, IT&TG,  
ECIL, HYDERABAD.



## GOVERNMENT INSTITUTE OF ELECTRONICS

East Marredpally,  
Secunderabad - 500 026,  
TELANGANA, INDIA.

### CERTIFICATE

This is to certify that the project entitled "**ONLINE EXAMINATION APPLICATION**" is a bonafide work done by **PANDUGA BHAVITHA** bearing PIN: **17054-CP-039** in partial fulfillment for the award of **SPECIAL DIPLOMA IN ELECTRONICS** with specialization in **COMPUTER ENGINEERING** to **STATE BOARD OF TECHNICAL EDUCATION AND TRAINING**.

Certified further that to the best of knowledge the work presented in this has not been submitted to any other college/ institute for the award of any degree or diploma.

**Smt. K. RADHIKA**

HEAD OF THE DEPARTMENT,  
GOVT.INSTITUTE OF ELECTRONICS,  
EAST MARREDPALLY,  
SECUNDERABAD-500026,  
TELANGANA, INDIA.

**Shri G. VENKATESHWARA PRASAD**

PRINCIPAL,  
GOVT.INSTITUTE OF ELECTRONICS,  
EAST MARREDPALLY,  
SECUNDERABAD-500026,  
TELANGANA, INDIA.

## **ACKNOWLEDGEMENT**

With great pleasure, I want to take this opportunity to express my heartfelt gratitude to all the people who helped in making this project a success. I thank the almighty for giving us the courage and the perseverance in completing the project.

I thank the **Electronics Corporation Of India Limited** for giving me an opportunity to undertake this project as a part of my **Special Diploma in Electronics with Specialization in Computer Programming**.

I would like to express my gratitude to **Shri. K. Sravan Kumar** for allowing us to undertake this project and permitting us to use the necessary infrastructure.

I am deeply indebted to **Smt. P. D. Ramya Teja**, who has incorporated towards the completion of our project realistic deadline set by her to keep me on toes due to which we could complete our project in time.

I seem it to be a great honor to thank **Shri. G. Venkateshwara Prasad** (Guru), Principal, **GOVERNEMENT INSTITIUTE OF ELECTRONICS** who in an axle behind my studies and for having given me a chance to do my Special Diploma in this esteemed institution.

My sincere thanks to **Smt. Radhika** (Guru), Head of the Department for her excellent expert support rendered to me during my tenure in the institute.

My special thanks to **Dr. Ch. Vidya Sagar** (Guru), Placement Officer of **GOVERNMENT INSTITUTE OF ELECTRONICS** for his excellent support rendered to me during my tenure in the institute.

**PANDUGA BHAVITHA**

**(17054-CP-039)**

## **DECLARATION**

I hereby declare that this project report entitled "**ONLINE EXAMINATION APPLICATION**" is the result of training given to us during **6 Months Industrial Training** in **Electronics Corporation Of India Limited** for the award of **Special Diploma in Electronics with Specialization in Computer Programming by STATE BOARD OF TECHNICAL EDUCATION AND TRAINING, Hyderabad, Telangana.**

I hereby declare that this project report is the outcome of my effort and it hasn't been submitted to any other university for the award of any degree or diploma.

**PANDUGA BHAVITHA**

**(17054-CP-039)**

## **ORGANIZATIONAL PROFILE**

**Electronics Corporation of India Limited (ECIL)** is a Public Enterprise under the Department of Atomic Energy. Established in 1967 primarily to meet the Control and Instrumentation requirements of India's nuclear power program, **ECIL** has played a pioneering role in spurring the growth of indigenous electronics industry in the country. Ranging from miniature components to complex systems and encompassing Instrumentation, Communication and Computer technologies, **ECIL** is a **multi-product, multi-disciplinary and multi-technology organization providing cutting-edge technology solutions to the strategic users in Defense, Atomic Energy, Aerospace, Electronic Security, IT & e-Governance.**

**ECIL** pioneered the development of a number of products in India earning it the name and fame as the torch-bearer of Electronics and IT revolution in the country. These products include Black & White TV, Digital Computers, Control and Instrumentation products for Nuclear Power Plants, Automatic Message Switching Systems, Programmable Logic Controllers and Electronic Voting Machines.

**ECIL's** state-of-the-art infrastructure, manufacturing and quality systems meet all the requirements of Defense, Nuclear and Space. The infrastructure includes facilities for CAD, ASIC/VLSI design; Hybrid Microcircuits and PCB manufacture, Automatic SMD Insertion Machines, On-line PCB Test Equipment, calibration and characterization of Radiation Instruments, Environmental Testing and Calibration Laboratories and IT enabled processes. These are being augmented by Compact Antenna Test Range facility, High Density Interconnect facility & EMI/EMC Test facility.

All the business divisions of **ECIL** are certified for ISO 9000:2008 Quality Management System and the company is certified for ISO 14001:2004 Environmental Management System and ISO 18001:2007 for Occupational Health and Safety. The ISO 27001 for Information Security is under implementation and is under certification process.

**ECIL** has been the proud recipient of MoU Excellence Awards for the year 2006-07 and 2007-08 in the Electronics and Communication Sector from Department of Public Enterprises and the SCOPE Award for Excellence and Outstanding Contribution to the Public Sector Management 2007-08 in the Medium PSE Category.

In line with its Vision and Mission, the company is currently focusing on High Technology and Low Volume projects of national importance in the chosen areas of Strategic Electronics and the activities are organized as following verticals:

1. Nuclear
2. Defense
3. Aerospace
4. Security
5. IT & e-Governance

### **Atomic Energy:**

ECIL came into being with the mandate of meeting all the Control and Instrumentation requirements of the country's Atomic Energy Programmed. Since inception, ECIL has been supplying radiation monitoring & process control and instrumentation systems to all the Nuclear Power Plants and several allied facilities like Heavy Water , Ore Processing, Fuel Fabrication and Fuel Recycling Plants. The capabilities acquired in meeting the above requirements resulted in products and systems such as Distributed Control Systems, SCADA, PLC, Plant Simulators which could be used in other areas such as Thermal Power Plants, Refineries and Pipelines, Steel and other process industries.

## **Defense:**

ECIL has played an important role in meeting the strategic requirements of the Armed Forces. Electronic Warfare, Radios, Communication Intelligence, Encryption, Antennas, SATCOM, C4I systems and Simulators are some of the systems supplied to the Defense sector.

ECIL is the preferred supplier of precision electro-mechanical systems, inertial navigation systems and electronic Fuses.

## **Aerospace:**

ECIL is an established supplier of Antenna products and SATCOM systems to the Information and Broadcasting, Telecom, Aerospace and Defense sectors. The 32 meter DSN Antenna for Chandrayaan, designed developed & installed by ECIL is a testimony to the company's competency and track record. ECIL has built-up valuable product development and manufacturing capability spanning Civil, Mechanical, Control, RF and Network domains required for successful design and implementation of the antenna systems.

## **Security Systems and Solutions:**

ECIL is India's premier security systems integrator and solutions architect. Systems designed and engineered by ECIL protect vital installations and premises all around the country. ECIL also produces state-of-the art radiation detectors deployed in CBRN based security solutions. The integrated security systems include IP camera based video surveillance with advanced analytics, personnel and vehicle access control and anti-terrorist gadgetry. As recognition of ECIL's competency in this area, the prestigious assignment for the Integrated Security Systems for Commonwealth Games 2010 (CWG 2010) was awarded to ECIL by the Govt. of India and it was successfully completed in time for CWG 2010, Delhi.

## **IT, Telecom & e-Governance:**

ECIL has been pioneering the development of Encryption systems for the Armed forces, Paramilitary forces and other Government agencies including DAE. The solution includes indigenous design of algorithm; implementation of algorithm in FPGA based hardware, approvals by Ministry of Defense agencies for cryptographic strength and certification for accurate implementation. Core groups developed for this purpose at Bangalore and Hyderabad have churned out quite a good number of products for our various customers. These products include Voice encryption for handheld two way radios, Voice, Data, Fax encryption for land line

Satellite links, Bulk Encryption from 64kbps up to STM16, Ethernet/IP encryption from 10Mbps to 10Gbps. Some of the equipment have been deployed and are operational in the field for the past four years

**ECIL** has provided end-to-end IT & e-Governance solutions to the Banking, Commercial Taxes, Road Transport Authority, Municipal Corporations, Public Transport utilities, **Healthcare & Hospital Management communities.**

**ECIL's Electronic Voting Machines** have helped simplify the electoral process and strengthen democracy, setting a bench mark around the world.

**ECIL** is also a consortium partner in creating the **National Population Register (NPR National)** for the 57Crore population of 9 coastal states and Union territories in India. The job involves Bilingual data entry in secure data centers followed by Biometric data capture (photograph, 10 finger prints & iris) using laptops for all residents and preparing block wise local register of usual residents. The processed data is then sent to Registrar General of India and National Population Register is built up. Personalized cards are prepared for residents above 18 years and distributed.

**ECIL** has emerged as a Total Solution provider in the chosen areas of Strategic Electronics and is endeavoring to become a global player in the near future.

## **PROFILE OF ITSD (IT&TG)**

**Electronics Corporation of India Limited** is India's foremost electronics company established in 1967 with major operation in Computers and Information Technology, Communications, Control Systems, Instruments and Strategic Electronics.

Focused thrust areas have enabled **ECIL** to pioneer state-of-the-art products and complex solutions for specific applications in energy, petroleum, space, defense, steel, transportation, banking, health, education and factory automation, thereby playing a major role in the growth of **electronics and information technology in the world.**

**INFORMATION TECHNOLOGY SERVICES DIVISION** addresses the hardware & software solutions to Corporate Business and Government sectors to local markets. The Division offers solutions that match international standards and provides services that span **Project Consultancy, Information Systems Planning, Customized Software Development, System Integration, BOOT Projects and Application Re-engineering.** The **Software Engineers** of the Division are well versed in system analysis, design, coding, testing and Installation and support of application systems in the following areas.

RDBMS: ORACLE, ORACLE 10G

Languages: C, C++, JAVA, Dot NET and Embedded Systems

GUI: Windows, Visual Basic, and VC ++

Environment: Client/Server Computing, LAN, WAN and LINUX

## **ABSTRACT**

Online Examination Application helps the candidates for appearing the exams online. Its mission is to offer a quick and easy way to appear for the exam and it also provides the result immediately after the exam. The overhead of correcting the answer sheets manually and the scope of human errors are greatly reduced. It fully automates the previous manual process of taking written exams. The system is user-friendly for the new users also. It provides security, it verifies password of the user before allowing to logging in.

It is developed using the SAP software an ERP package which stands for Systems, Applications and Products in data processing. It is a world's leading provider of business software, offering applications and services that enable companies of all sizes.

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# **1. INTRODUCTION**

Online Examination Application is very helpful to users. The objective of this project is to provide efficient, secure and easy way to appear the exam. The candidates are required to register in order to take the assessment. Online examination through Online Examination Application can be taken in different topics and sub-topics. The online examination application automatically adds the marks allocated for each question to determine the total marks for the test. Candidates are allowed to review their answers in a particular menu after the completion of assessment.

## **1.1 Purpose**

The main purpose of the system “Online Examination Application” is to conduct assessments effortlessly and to reduce human effort, reduces administrative burden, saves paper, time, and the overhead of correcting the answer sheets manually and the scopes of human errors are greatly reduced. This computerized system also provides security as it is a user specific system. It calculates all the results automatically without any errors. People from different parts of the world can register. It is made in such a manner that all the users can understand all the options in it very easily. It is made in a quick and easy referential manner.

## **1.2 Scope**

Online examination system can be used in private institutes as well as educational institution. These online examination applications are aimed at coaching the students for competitive exams in engineering, medicine, law, finance, government sector, etc. These online assessments are targeted towards working professionals also; they assist users in skill enhancement, proficiency improvement, and competency development through online certification.

It can be a powerful tool to educate students from diverse backgrounds and locations. As it is user friendly application it can be used anywhere and anytime.

## **2. ANALYSIS**

System analysis is the process of gathering and interpreting facts, diagnosing problems and using the information for the recommended improvement to the system. In brief, we can say that analysis specifies what the system should do. System analysis is thus a management technique, which helps in designing a new system or improving an existing system. This process of studying a procedure or business in order to identify its goals and purposes helps create systems and procedures that will achieve them in an efficient way. The analyst has to understand the functioning and concept of the system in detail, before designing the appropriate computer based system that will meet all the requirements of the existing system. The system analyst has to carry out a customary approach to use the computer for problem solving.

### **2.1 Considerations for system analysis**

1. Types of Outputs Concerned: The objectives or goals are to be determined at first. This is achieved by determining the outputs that the system is supposed to generate. This helps to find out the purpose of the proposed system. This makes a clear understanding of the aim for which a system is to be approached for development. The objectives are however identified in terms of needs. Needs are the actual determinants of the output of the system.
2. Types of Inputs concerned: Based on the output needed to be generated by the project, inputs needed for the project are determined. Inputs also depend on the constraint like accuracy, correctness and timeliness etc. all these considerations help to determine the necessary inputs to be fed into the system for processing.
3. Types of Storage concerned: Types of storages are also needed to be determined as they are the most important point taken into consideration. Different systems have different types of storages. Database systems or file systems are generally used for storing data concerned with the system.

4. Types of Processing concerned: This deals with procedures needed to develop the system and also how these procedures are to be implemented. It involves the logical steps involved for the development of the system.

## **2.2 Existing system**

The existing system requires manual entry of the details of a person who is registered. Also it requires each person to come to the exam center which is difficult for candidates from far distances to reach the exam center. It is mandatory to print registration/application forms, question papers for all the candidates which are waste of paper. Calculation of number of candidates registered and verification of details of these candidates manually is very difficult and requires quite a lot of time and manpower. Another factor which is to be considered is the possibility of errors in manual intervention. The existing system is not secure as any candidate can make quick entries manually if the responsible person is not present.

## **2.3 Proposed system**

This modern computerized system, Online Examination Application is developed to overcome the drawbacks of the existing system. Candidate can attend the exam from any part of the world. This application allows registering and then logging in for giving the assessment whereas the administrator is created directly in the database table i.e. only user registration is allowed in the system. The topic and sub-topic for the assessment are selected and exam id is generated before proceeding to give the assessment. After the assessment the result is processed and displayed whereas candidates can also view results along with the answers marked by them against the correct answer to each of the question. It also allows administrator /Examination controller to prepare the assessment after registering the topic and sub-topic i.e. the assessment can be given topic and subtopics wise, the assessment can be prepared that way by the administrator. Also the administrator is allowed to decide the weightage of each question in the assessment according to which the result is calculated.

### **2.3.1 Advantages**

It reduces the manual paperwork for the administration, as it gives proper information about the assessment and is automated in case of producing results and stores all the data about the candidate's results and assessments with security maintained. The administrator can also edit the assessment at any time. Administrator can also choose the weightage of each question and the rewards would be awarded accordingly. It saves administrator's effort and time. The users find no difficulty in using the application as it is very user friendly.

### **2.4 Identification of need**

Identification of need is generally concerned with the user's requirements and expectations from the system. The following are the needs for the development of the proposed system:

1. Reduce human effort as it is automated.
2. User-friendly and easy handled.
3. Result is automated so correcting the answer sheets manually and the scopes of human errors are greatly reduced.
4. Can attend the assessment from anywhere securely.
5. The results from the candidates are securely stored for further reference avoiding the pile up of the answer sheets in the organization.
6. It prevents unnecessary wastage of money as it doesn't require more manpower.
7. The administration is allowed to easily organize the assessments in less time.

### **2.5 Tools/ Technologies required**

1. SAP software
2. ABAP editor
3. Programming Languages: ABAP

### **3. FEASIBILITY STUDY**

Feasibility study means the analysis of problem to determine if it can be solved effectively. In other words it is the study of the possibilities of the proposed system. It studies the work ability, impact on the ability of the organization to meet user's need and efficient use of resources.

#### **3.1 Types of feasibility**

The feasibility report of the project holds the advantages and flexibility of the project. Three aspects in which the system has to be feasible are divided into these sections:

1. Technical Feasibility
2. Economic Feasibility
3. Legal Feasibility
4. Operational Feasibility
5. Schedule Feasibility

##### **3.1.1 Technical Feasibility**

The assessment is based on the outline design of system requirements in terms of input, process, output, fields, programs, and procedures. This can be quantified in terms of volumes of data, trends, frequency of updating, etc. in order to estimate where the new system will perform adequately. Technical Feasibility is carried out to determine whether the company has the capability, in terms of software, hardware, personnel and expertise, to handle the completion of the project.

### **3.1.2 Economic Feasibility**

Economic Feasibility is the most frequently used method for evaluating the effectiveness of the new system. More commonly known as cost/benefit analysis, the procedure is determining the benefits and savings that are expected from a candidate and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system.

### **3.1.3 Legal Feasibility**

Determines the proposed system conflicts with legal requirements e.g. a data processing system must comply with the local protection acts.

### **3.1.4 Operational Feasibility**

A project will fail if it takes too long to be completed before it is used. Typically this means estimating how long the system will take to develop and if it can be completed in a given time period using so many methods like pay-back period. Schedule feasibility is a measure of how responsible the project timetable is.

## **4. SYSTEM DESIGN**

Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. Design is the first step in the development phase for any engineering product or system. The designer's goal is to produce a model or representation of an entity that will later be built. Beginning, once system requirement have been specified and analysed, system design is the first of the three technical activities which are required to build and verify software, they are:

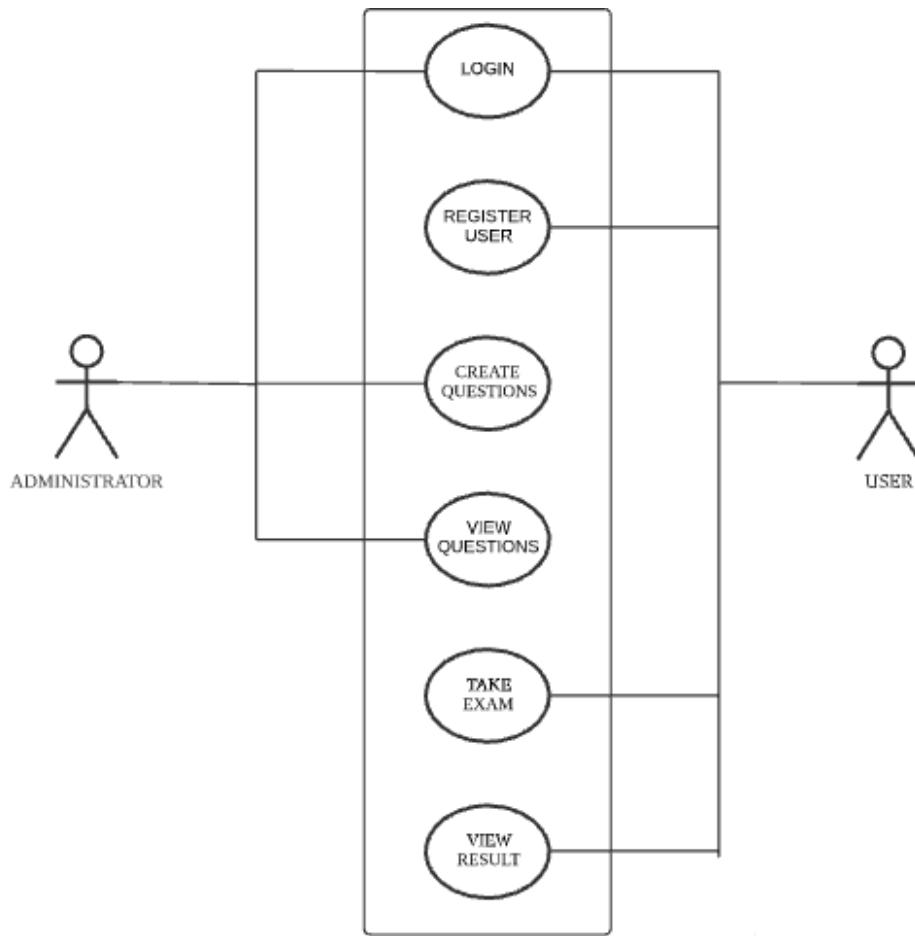
1. Design
2. Code
3. Testing

### **4.1 UML Diagrams**

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The goal is for UML to become a common language for creating models of object-oriented computer software. In its current form, UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML. The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of the software system, as well as for business and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems. The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

#### 4.1.1 Use Case Diagram

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.



**Fig 1: Use Case Diagram**

#### 4.1.2 Activity Diagram

We use Activity Diagrams to illustrate the flow of control in a system and refer to the steps involved in the execution of a use case. We model sequential and concurrent activities using activity diagrams. So, we basically depict workflows visually using an activity diagram. An activity diagram focuses on the condition of flow and the sequence in which it happens. We describe or depict what causes a particular event using an activity diagram. UML models basically are three types of diagrams, namely, structure diagrams, interaction diagrams, and behavior diagrams. An activity diagram is a behavioral diagram i.e. it depicts the behavior of a system.

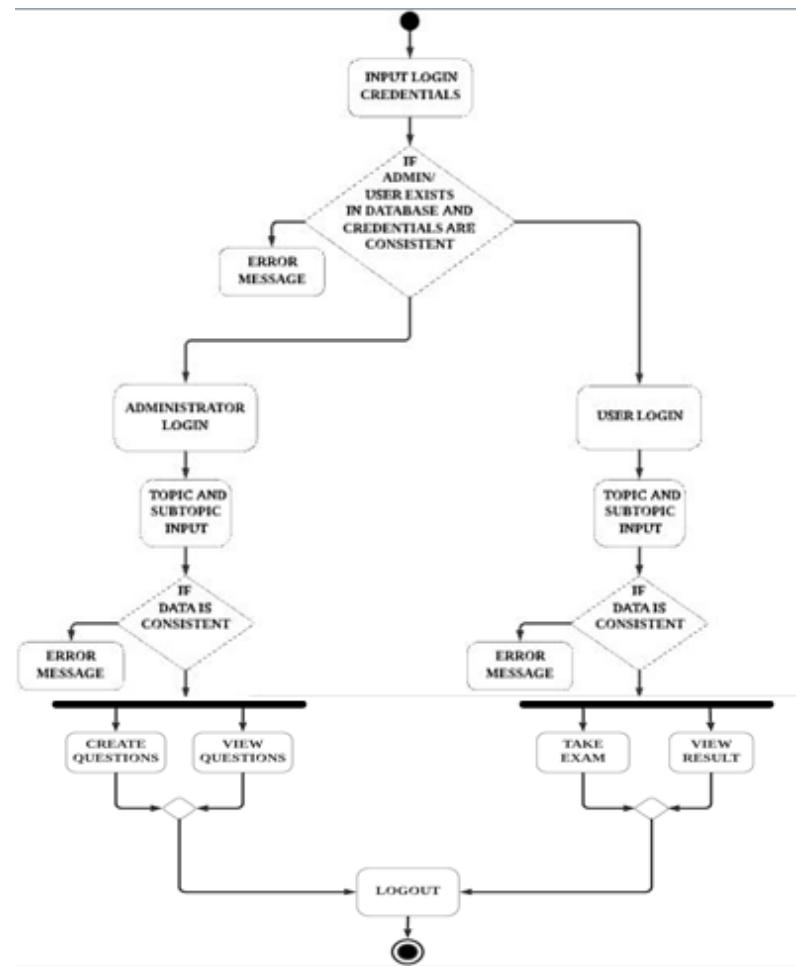


Fig 2: Activity diagram

## **5. IMPLEMENTATION**

This project is implemented using SAP ERP, an enterprise resource planning software developed by the German company SAP SE. SAP allows all data to be well integrated with various databases. For this reason, this system is able to streamline business processes so that companies can collect data more easily and efficiently. SAP ABAP is an ERP programming language.

ABAP (Advanced Business Application Programming) is a high-level programming language for programming the SAP NetWeaver Application Server, which is part of the SAP NetWeaver platform for building business applications.

## 5.1 Tools/Technologies used

### 5.1.1 Editor used

The **ABAP Editor** in SAP GUI, i.e. the Program Editor (SE38), Function Builder (SE37), and the source code-based Class Builder (SE24) is a source code editing tool designed to handle the specifics of ABAP coding. It is one of the main components of the ABAP Workbench. You use the ABAP Editor to write and edit ABAP programs, class methods, function modules, screen flow logic, type groups, and logical databases.

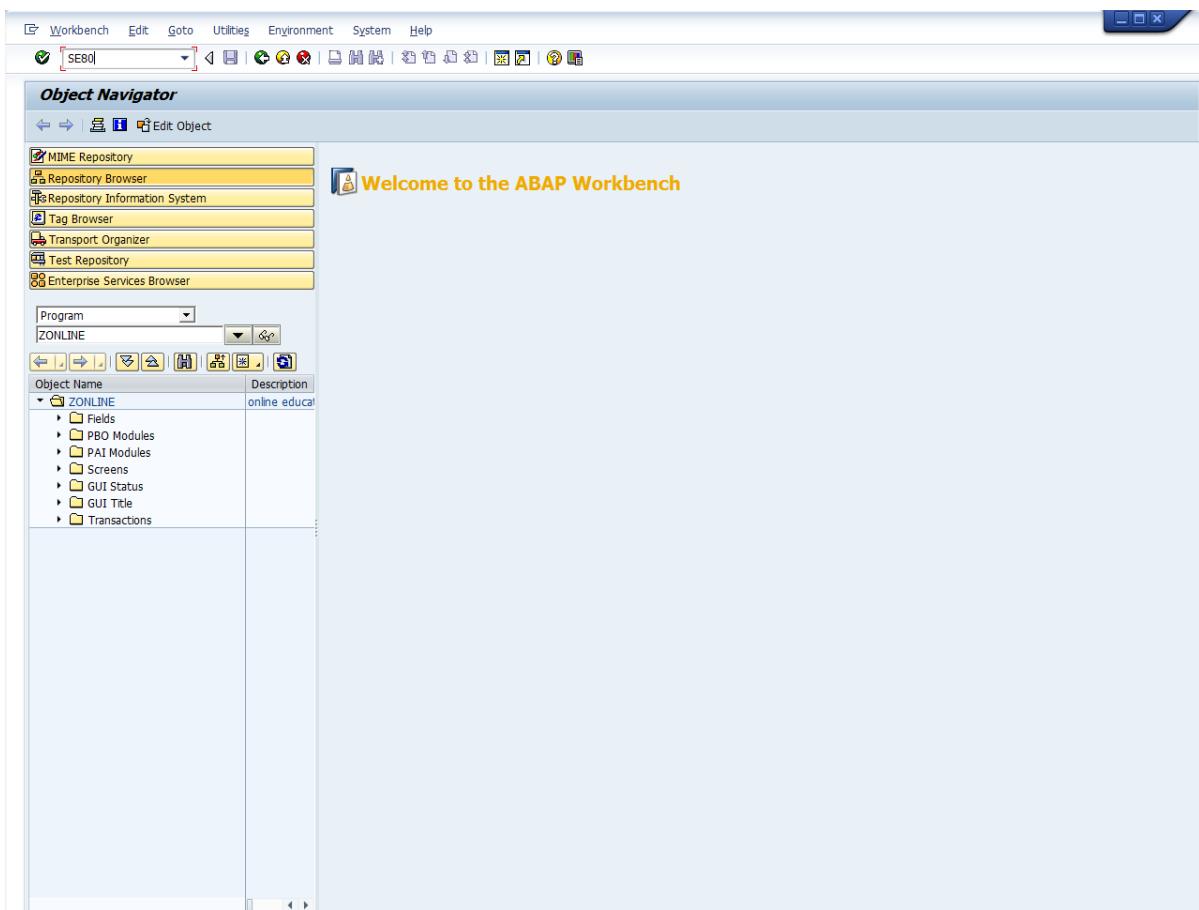
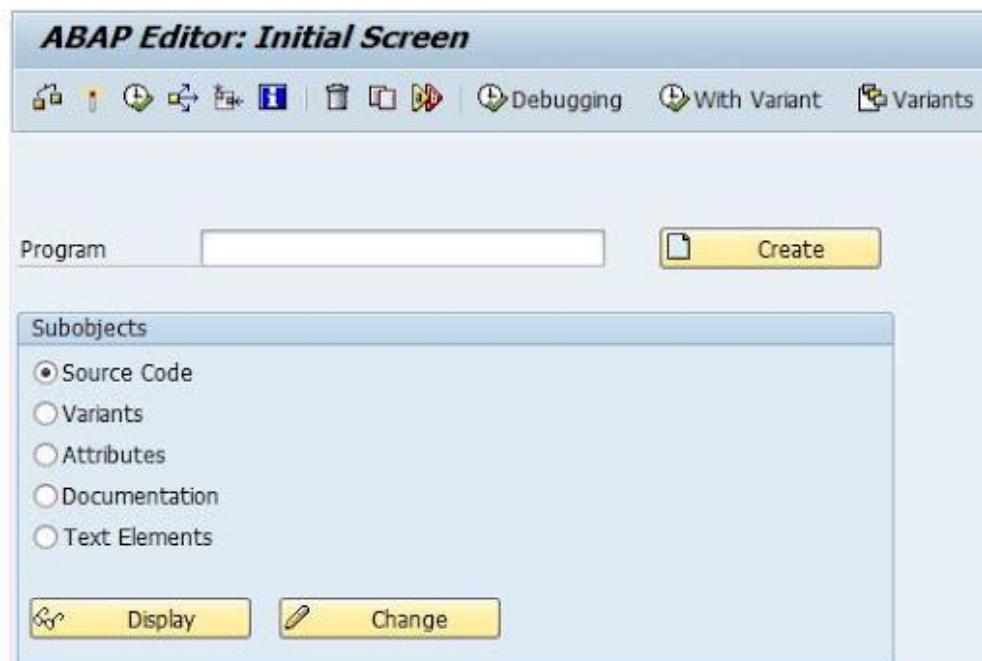


Fig 3: ABAP Workbench



**Fig 4: ABAP Editor (SE38)**

### 5.1.2 SAP

SAP is an Enterprise resource planning software which stands for Systems, Applications and Products in data processing developed by the German company SAP SE. It is the software catering to the business needs of an enterprise beginning with finance, HR, supply chain, production, sales, quality, maintenance, etc. SAP is the world's leading provider of business software, offering applications and services that enable companies of all sizes and in more than 25 industries to become best-run businesses. It is written in SAP's proprietary language ABAP.



**Fig 5: SAP logo**



**Fig 6: SAP icon on desktop**

### **5.1.3 ABAP**

ABAP stands for Advanced Business Application Programming. ABAP is one of the many application-specific fourth-generation languages (4GLs) first developed in the 1980s. It is a high-level programming language which is extracted from the base computing languages Java, C, C++ and Python. ABAP's code is written in an interpretive language similar to COBOL in syntax. The language can be coded to look almost like COBOL. According to the text, it is a COBOL and Pascal cross-breed. Its use allows SAP customers to extend the functionality of the base product.

#### **5.1.3.1 Basic Syntax**

ABAP source program consists of comments and ABAP statements. Every statement in ABAP begins with a keyword and ends with a period, and ABAP is ‘Not’ case sensitive.

The first non-comment line in a program begins with the word REPORT. The Report will always be the first line of any executable program created. The statement is followed by the program name which was created previously. The line is then terminated with a full stop.

The syntax is –

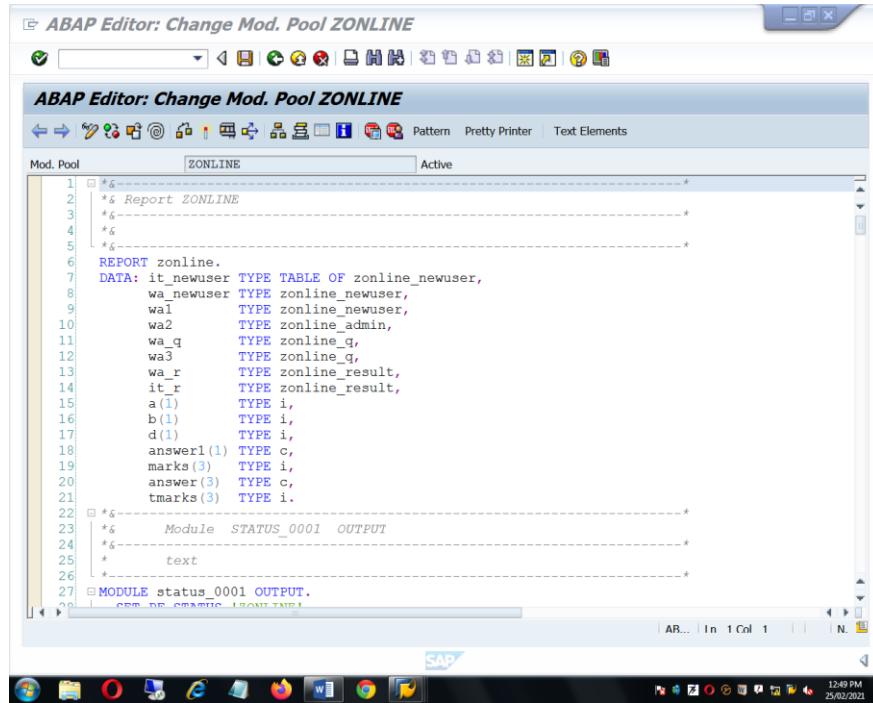
REPORT [Program\_Name].

[Statements...].

Statements consist of a command and any variables and options, ending with a period. As long as the period appears at the end of the statement, no problems will arise. It is this period that marks where the statement finishes.

Four things to consider while writing statements –

1. The write statement writes whatever is in quotes to the output window.
2. The ABAP editor converts all text to uppercase except text strings, which are surrounded by single quotation marks.
3. Unlike some older programming languages, ABAP does not care where a statement begins on a line. You may take advantage of this and improve the readability of your program by using indentation to indicate blocks of code.
4. ABAP has no restrictions on the layout of statements. That is, multiple statements can be placed on a single line, or a single statement may stretch across multiple lines.



The screenshot shows the SAP ABAP Editor interface with the title bar "ABAP Editor: Change Mod. Pool ZONLINE". The main area displays the ABAP code for the ZONLINE program. The code includes declarations for data types like it\_newuser, wa\_newuser, wa1, wa2, wa3, wa\_q, wa\_r, it\_r, a(1), b(1), d(1), answer1(1), marks(3), answer(3), and tmarks(3). It also contains sections for REPORT zonline, DATA declarations, and a MODULE STATUS\_0001 OUTPUT block. The code is well-formatted with indentation and line numbers.

```

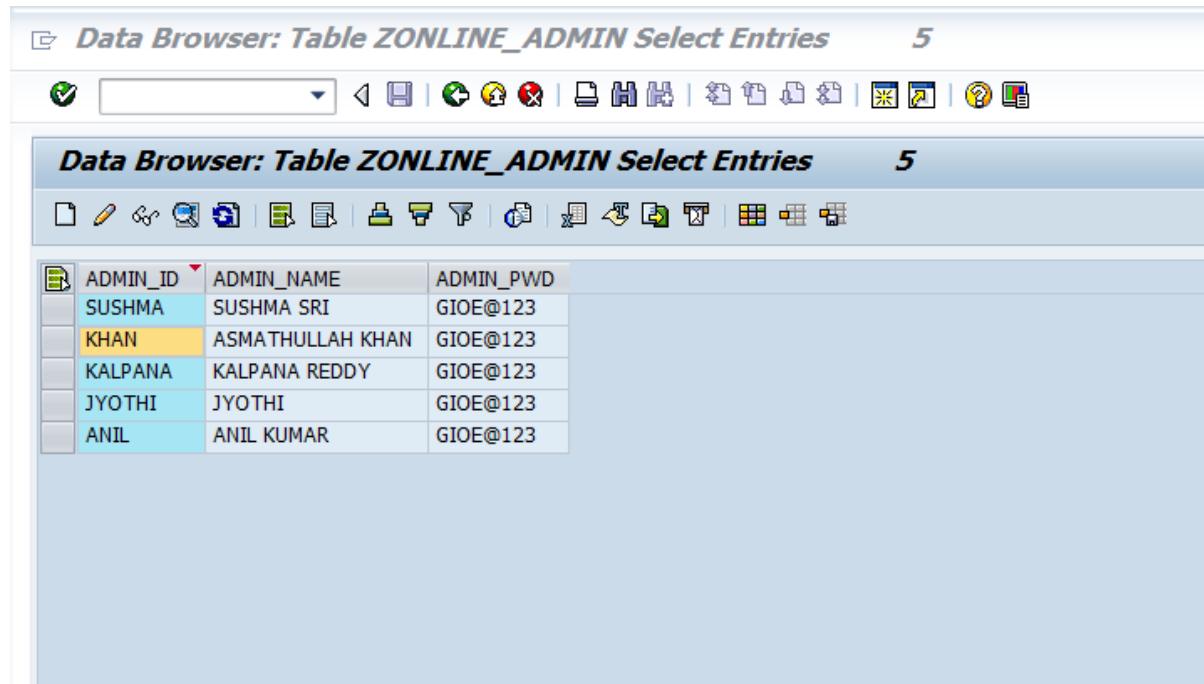
1. *->
2. *& Report ZONLINE
3. *->
4. *->
5. *->
6. REPORT zonline.
7. DATA: it_newuser TYPE TABLE OF zonline_newuser,
8.       wa_newuser TYPE zonline_newuser,
9.       wa1      TYPE zonline_newuser,
10.      wa2     TYPE zonline_admin,
11.      wa3     TYPE zonline_q,
12.      wa_q    TYPE zonline_q,
13.      wa_r    TYPE zonline_result,
14.      it_r    TYPE zonline_result,
15.      a(1)   TYPE i,
16.      b(1)   TYPE i,
17.      d(1)   TYPE i,
18.      answer1(1) TYPE c,
19.      marks(3)  TYPE i,
20.      answer(3)  TYPE c,
21.      tmarks(3) TYPE i.
22. *->
23. |*& Module STATUS_0001 OUTPUT
24. *->
25. |
26. |
27. |MODULE status_0001 OUTPUT.

```

**Fig 7: ABAP program in ABAP editor**

## 5.2 Database tables

### 5.2.1 Administrator Database



The screenshot shows the Oracle SQL Data Browser interface with the title "Data Browser: Table ZONLINE\_ADMIN Select Entries". The table has 5 rows of data:

ADMIN_ID	ADMIN_NAME	ADMIN_PWD
SUSHMA	SUSHMA SRI	GIOE@123
KHAN	ASMATHULLAH KHAN	GIOE@123
KALPANA	KALPANA REDDY	GIOE@123
JYOTHI	JYOTHI	GIOE@123
ANIL	ANIL KUMAR	GIOE@123

Fig 8: Administrator Database

## 5.2.2 Question paper database

**Data Browser: Table ZONLINE\_Q Select Entries 35**

Topic	Subtopic	Int	Character 100	A	B
.NET	BASICS OF .NET	1	CLR STANDS FOR _____.	COMMON LEAGUE RUNTIME	COMM
.NET	BASICS OF .NET	2	.NET FRAMEWORK SUPPORTS _____ LANGUAGES.	41	43
C PROGRAMMING LANGUAGE	FUNCTIONS	1	SCANF IS A _____ FUNCTION?	USER DEFINED	PRE-DEF
C PROGRAMMING LANGUAGE	FUNCTIONS	2	INT ADD(INT, INT) REPRESENTS.	CALLING OF A FUNCTION	DEFINIT
C PROGRAMMING LANGUAGE	FUNCTIONS	3	THE FUNCTION CALLING ITSELF IS CALLED AS _____ FUNCTION.	CALLED	LOOPIN
C PROGRAMMING LANGUAGE	INTRODUCTION	1	WHO DISCOVERED C LANGUAGE _____?	JAMES GOSLING	DENNIS
C PROGRAMMING LANGUAGE	INTRODUCTION	2	WHICH OF THE FOLLOWING IS NOT A BASIC DATATYPE IN C LANGUAGE ____?	FLOAT	INT
C PROGRAMMING LANGUAGE	INTRODUCTION	3	A FORMAT IDENTIFIER '%d' IS USED FOR _____ DATATYPE ?	CHAR	INT
C PROGRAMMING LANGUAGE	INTRODUCTION	4	WHICH OF THE FOLLOWING ARE THEMSELVES A COLLECTION OF DIFFERENT DATATYPE ____.	STRING	STRUCT
C PROGRAMMING LANGUAGE	INTRODUCTION	5	IN WHICH CATEGORY THE 'INT' DATATYPE BELONGS TO ____.	PRIMARY	DERIVEI
COMPUTER HARDWARE & NETWORKING	NETWORKING	1	A DEVICE USED TO CONNECT THE NODES IN A NETWORK.	HUB	ROUTER
COMPUTER HARDWARE & NETWORKING	NETWORKING	2	TCP/IP IS A _____ LAYER PROTOCOL SUITE.	7	5
COMPUTER HARDWARE & NETWORKING	NETWORKING	3	SMTP IS A _____ LAYER PROTOCOL.	TRANSPORT	DATA L
COMPUTER SECURITY	SECURITY ATTACKS	1	ACTIVE ATTACK INVOLVES _____?	MODIFICATION OF MESSAGE	READIN
COMPUTER SECURITY	SECURITY ATTACKS	2	TRAFFIC ANALYSIS IS AN EXAMPLE OF _____ ATTACK.	ACTIVE	PASSIV
DIGITAL IC DESIGN	VERILOG HDL	1	VERILOG HDL IS USED FOR _____.	DESIGNING DIGITAL CIRCUITS	DESIGN
DIGITAL IC DESIGN	VERILOG HDL	2	VERILOG HDL IS A _____ LANGUAGE.	OBJECT-ORIENTED	CASE IN
INFORMATION TECHNOLOGY	HTML	1	HTML STANDS FOR _____.	HYPER TEXT MAKEUP LANGUAGE	HYPER
INFORMATION TECHNOLOGY	HTML	2	</BR> TAG IS _____.	ENTRY COMMAND	EXIT CO
INFORMATION TECHNOLOGY	HTML	3	CSS IS USED FOR _____?	STYLING OF SHEETS	AS A BA
INFORMATION TECHNOLOGY	JAVA	1	WHO DISCOVERED JAVA ____?	JAMES GOSLING	DENNIS
INFORMATION TECHNOLOGY	JAVA	2	WHAT IS THE SIZE OF 'INT' DATATYPE ____?	16 BITS	32 BITS
INFORMATION TECHNOLOGY	JAVA	3	IN JAVA BYTE, SHORT, INT AND LONG BELONGS TO ____.	SIGNED	UNSIGN
INFORMATION TECHNOLOGY	JAVA	4	THE SMALLEST INTEGER TYPE IS _____ AND ITS SIZE ____ BITS.	SHORT,8	BYTE,8
INFORMATION TECHNOLOGY	JAVA	5	IN JAVA , THE WORD TRUE IS _____.	JAVA KEYWORD	BOOLEA
INFORMATION TECHNOLOGY	JAVA	6	JAVA IS A _____ LANGUAGE.	WEAKLY TYPED	STRONG
INFORMATION TECHNOLOGY	JAVA	7	WHICH OF THE FOLLOWING IS THE FEATURE OF JAVA ____?	ROBUST	SIMPLE
INFORMATION TECHNOLOGY	JAVA	8	WHICH OF THESE CLASSES ENCAPSULATE RUNTIME STATE OF AN OBJECT ?	CLASS	SYSTEM
INFORMATION TECHNOLOGY	JAVA	9	WHAT IS THE DIFFERENCE BETWEEN QUEUE AND STACK	LIFO , FIFO	FIFO , L
INFORMATION TECHNOLOGY	JAVA	10	WHAT IS THE CORRECT METHODS USED TO INSERT AND DELETE ITEMS FROM STACK	PUSH AND POP	INSERT
MICROCONTROLLER	8051 MICROCONTROLLER	1	8051 MICROCONTROLLER IS A _____ PIN IC.	40	32
MICROCONTROLLER	8051 MICROCONTROLLER	2	WHICH OF THE FOLLOWING IS NOT THE PORT OF 8051 MC.	PORT A	PORT B
MICROCONTROLLER	8051 MICROCONTROLLER	3	8051 POSSESS _____ SIZE OF ROM.	2KB	4TB
MICROCONTROLLER	8051 MICROCONTROLLER	4	WHICH PORT IS USED AS BOTH DATA AND ADDRESS BUS?	PORT 0	PORT 1
MICROCONTROLLER	8051 MICROCONTROLLER	5	TCON STANDS FOR _____.	TIMER CONTROL	TIMER/0

Fig 9.1: Question paper Database

Table Entry Edit Goto Settings System Help

Data Browser: Table ZONLINE\_Q Select Entries 35

Topic Subtopic Int\_B C D CRT\_ANS Q\_MARKS

Topic	Subtopic	Int_B	C	D	CRT_ANS	Q_MARKS
.NET	BASICS OF .NET	1	COMMON LANGUAGE RUNTIME	NONE	B	1
.NET	BASICS OF .NET	2	43	44	C	1
C PROGRAMMING LANGUAGE	FUNCTIONS	1	PRE-DEFINED	BOTH	B	1
C PROGRAMMING LANGUAGE	FUNCTIONS	2	DEFINITION OF A FUNCTION	DECLARATION OF A FUNCTION	BOTH B AND C	1
C PROGRAMMING LANGUAGE	FUNCTIONS	3	LOOPING	CALLING	RECURSIVE	1
C PROGRAMMING LANGUAGE	INTRODUCTION	1	DENNIS RITCHIE	STROUSTRUPH	DANNIEL	1
C PROGRAMMING LANGUAGE	INTRODUCTION	2	INT	REAL	CHAR	1
C PROGRAMMING LANGUAGE	INTRODUCTION	3	INT	FLOAT	DOUBLE	1
C PROGRAMMING LANGUAGE	INTRODUCTION	4	STRUCTURE	CHAR	ARRAY	1
C PROGRAMMING LANGUAGE	INTRODUCTION	5	DERIVED	USER DEFINED	NONE OF THESE	1
COMPUTER HARDWARE & NETWORKING	NETWORKING	1	ROUTER	MODEM	SWITCH	1
COMPUTER HARDWARE & NETWORKING	NETWORKING	2	5	4	6	1
COMPUTER HARDWARE & NETWORKING	NETWORKING	3	DATA LINK	NETWORK	APPLICATION	1
COMPUTER SECURITY	SECURITY ATTACKS	1	READING OF MESSAGE	B ONLY	BOTH A AND B	1
COMPUTER SECURITY	SECURITY ATTACKS	2	PASSIVE	BOTH A AND B	NONE OF THESE	1
DIGITAL IC DESIGN	VERILOG HDL	1	DESIGNING ANALOG CIRCUITS	BOTH	NONE	1
DIGITAL IC DESIGN	VERILOG HDL	2	CASE INSENSITIVE	CASE SENSITIVE	NONE	1
INFORMATION TECHNOLOGY	HTML	1	HYPYER TEXT MANIPULATE LANGUAGE	HYPYER TEXT MARKUP LANGUAGE	HYPYER TEXT MAKEOVER LANGUAGE	1
INFORMATION TECHNOLOGY	HTML	2	EXIT COMMAND	BOTH A AND B	NONE OF THESE	1
INFORMATION TECHNOLOGY	HTML	3	AS A BACKUP FOR OUR WEBPAGE	TO COMBINE THE SHEETS	NONE	1
INFORMATION TECHNOLOGY	JAVA	1	DENNIS RITCHIE	STROUSTRUPH	DANNIEL	1
INFORMATION TECHNOLOGY	JAVA	2	32 BITS	64 BITS	NONE	1
INFORMATION TECHNOLOGY	JAVA	3	UNSIGNED	BOTH A AND B	NONE	1
INFORMATION TECHNOLOGY	JAVA	4	BYTE,8	SHORT,16	NONE OF THESE	1
INFORMATION TECHNOLOGY	JAVA	5	BOOLEAN LITERAL	SAME AS VALUE 1	SAME AS VALUE 0	1
INFORMATION TECHNOLOGY	JAVA	6	STRONGLY TYPED	MODERATE TYPED	NONE OF THESE	1
INFORMATION TECHNOLOGY	JAVA	7	SIMPLE AND EASY	PORTABLE	ALL OF THE ABOVE	1
INFORMATION TECHNOLOGY	JAVA	8	SYSTEM	RUNTIME	CACHE	1
INFORMATION TECHNOLOGY	JAVA	9	FILO , LILO	FILO , FILO	NONE OF THESE	1
INFORMATION TECHNOLOGY	JAVA	10	INSERT AND DELETE	ADD AND REMOVE	ALL OF THESE	1
MICROCONTROLLER	8051 MICROCONTROLLER	1	32	50	52	1
MICROCONTROLLER	8051 MICROCONTROLLER	2	PORT B	PORT D	PORT E	1
MICROCONTROLLER	8051 MICROCONTROLLER	3	4TB	4KB	2TB	1
MICROCONTROLLER	8051 MICROCONTROLLER	4	PORT 1	PORT 2	PORT 3	1
MICROCONTROLLER	8051 MICROCONTROLLER	5	TIMER/COUNTER	BOTH A AND B	NONE OF THESE	1

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22/02/2021

Fig 9.2: Question paper Database

### 5.2.3 Candidate's login details Database

The screenshot shows the SAP Data Browser interface for a table named ZONLINE\_NEWUSER. The title bar reads "Data Browser: Table ZONLINE\_NEWUSER Select Entries 12". The table has four columns: char8, Date in Format YYYYMMDD, 30 Characters, and 30 Characters. The data consists of 12 rows, each containing a name, a date of birth, and two email addresses. The first row, BHARGAVI, has a red box around it, indicating it is selected.

char8	Date in Format YYYYMMDD	30 Characters	30 Characters
BHARGAVI	02.11.2001	BHARGAVI	BHARGAVI@123
KRANTHI	08.10.2001	KRANTHI	KRANTHI@123
KUMAR	12.02.2002	KUMAR	KUMAR@123
MAHEEN	03.01.2002	SHIFA MAHEEN	MAHEEN
NAVEEN	03.07.1984	NAVEEN	ECIL@123
NIKITA	16.05.2002	NIKITA	NIKITA@123
PANDU	30.05.2002	BHAVITHA	PANDU
PDRTEJA	03.10.1989	RAMYA	ECIL@123
RAMYA	12.01.2001	RAMYA	RAMYA@123
SOWJANYA	15.03.2001	SOWJANYA	SOWJU
SRAVAN	12.09.1999	SRAVAN	SRAVAN@123
VIJITHA	03.11.2001	VIJITHA	VIJITHA@123

**Fig 10: Candidate's login details Database**

## 5.2.4 Result Database

**Data Browser: Table ZONLINE\_RESULT Select Entries 44**

char8	30 Characters	30 Characters	Q_NO	ANSWER	30 Characters
BHARGAVI	.NET	BASICS OF .NET	1 B	BHARGAVI20210222161610	
BHARGAVI	.NET	BASICS OF .NET	2 C	BHARGAVI20210222161610	
KRANTHI	C PROGRAMMING LANGUAGE	INTRODUCTION	1 B	KRANTHI20210222155544	
KRANTHI	C PROGRAMMING LANGUAGE	INTRODUCTION	2 C	KRANTHI20210222155544	
KRANTHI	C PROGRAMMING LANGUAGE	INTRODUCTION	3 B	KRANTHI20210222155544	
KRANTHI	C PROGRAMMING LANGUAGE	INTRODUCTION	4 B	KRANTHI20210222155544	
KRANTHI	C PROGRAMMING LANGUAGE	INTRODUCTION	5 A	KRANTHI20210222155544	
KRANTHI	COMPUTER SECURITY	VERILOG HDL	1	KRANTHI20210222161327	
MAHEEN	COMPUTER SECURITY	SECURITY ATTACKS	1 D	MAHEEN20210222160759	
MAHEEN	COMPUTER SECURITY	SECURITY ATTACKS	2 B	MAHEEN20210222160759	
MAHEEN	DIGITAL IC DESIGN	VERILOG HDL	1 A	MAHEEN20210222160955	
MAHEEN	DIGITAL IC DESIGN	VERILOG HDL	2 C	MAHEEN20210222160955	
NIKITA	DIGITAL IC DESIGN	VERILOG HDL	1 A	NIKITA20210222160655	
NIKITA	DIGITAL IC DESIGN	VERILOG HDL	2 C	NIKITA20210222160655	
PANDU	MICROCONTROLLER	8051 MICROCONTROLLER	1 A	PANDU20210222161506	
PANDU	MICROCONTROLLER	8051 MICROCONTROLLER	2 D	PANDU20210222161506	
PANDU	MICROCONTROLLER	8051 MICROCONTROLLER	3 C	PANDU20210222161506	
PANDU	MICROCONTROLLER	8051 MICROCONTROLLER	4 A	PANDU20210222161506	
PANDU	MICROCONTROLLER	8051 MICROCONTROLLER	5 A	PANDU20210222161506	
PDRTAJA	C PROGRAMMING LANGUAGE	FUNCTIONS	1 A	PDRTAJA20210223092410	
PDRTAJA	C PROGRAMMING LANGUAGE	FUNCTIONS	2 B	PDRTAJA20210223092410	
PDRTAJA	C PROGRAMMING LANGUAGE	FUNCTIONS	3 D	PDRTAJA20210223092410	
SOWJANYA	COMPUTER HARDWARE & NETWORKING	NETWORKING	1 A	SOWJANYA20210222162015	
SOWJANYA	COMPUTER SECURITY	SECURITY ATTACKS	1 D	SOWJANYA20210222160317	
SOWJANYA	COMPUTER SECURITY	SECURITY ATTACKS	2 B	SOWJANYA20210222160317	
SOWJANYA	DIGITAL IC DESIGN	VERILOG HDL	1 A	SOWJANYA20210222161100	
SOWJANYA	MICROCONTROLLER	8051 MICROCONTROLLER	1 A	SOWJANYA20210223103101	
SOWJANYA	MICROCONTROLLER	8051 MICROCONTROLLER	2 D	SOWJANYA20210223103101	
SOWJANYA	MICROCONTROLLER	8051 MICROCONTROLLER	3 C	SOWJANYA20210223103101	
SOWJANYA	MICROCONTROLLER	8051 MICROCONTROLLER	4 D	SOWJANYA20210223103101	
SOWJANYA	MICROCONTROLLER	8051 MICROCONTROLLER	5 A	SOWJANYA20210223103101	
VDITHA	COMPUTER HARDWARE & NETWORKING	NETWORKING	1 A	VDITHA20210223120818	
VDITHA	COMPUTER HARDWARE & NETWORKING	NETWORKING	2 C	VDITHA20210223120818	
VDITHA	COMPUTER HARDWARE & NETWORKING	NETWORKING	3 D	VDITHA20210223120818	
VDITHA	INFORMATION TECHNOLOGY	JAVA	1 A	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	2 A	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	3 A	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	4 B	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	5 B	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	6 B	VDITHA20210222101849	
VDITHA	INFORMATION TECHNOLOGY	JAVA	7 D	VDITHA20210222101849	

Fig 11: Result Database

### 5.3 Source code

```
*&-----*
*& Report ZONLINE
*&-----*
*&
*&-----*
REPORT zonline.

DATA: it_newuser TYPE TABLE OF zonline_newuser,
      wa_newuser TYPE zonline_newuser,
      wa1      TYPE zonline_newuser,
      wa2      TYPE zonline_admin,
      wa_q     TYPE zonline_q,
      wa3      TYPE zonline_q,
      wa_r     TYPE zonline_result,
      it_r     TYPE zonline_result,
      a(1)    TYPE i,
      b(1)    TYPE i,
      d(1)    TYPE i,
      answer1(1) TYPE c,
      marks(3)  TYPE i,
      answer(3)  TYPE c,
      tmarks(3)  TYPE i.

*&-----*
*&  Module STATUS_0001 OUTPUT
*&-----*
```

```

MODULE status_0001 OUTPUT.
SET PF-STATUS 'ZONLINE'.
SET TITLEBAR 'ZONLINE'.
ENDMODULE.

*&-----*
*& Module USER_COMMAND_0001 INPUT
*&-----*

MODULE user_command_0001 INPUT.

CASE sy-ucomm."on_click
WHEN 'HOME'.
CLEAR: wa_newuser.
CALL SCREEN 0003.

WHEN 'LOGIN'.
* BREAK-POINT.
IF wa_newuser-user_name = '' AND wa_newuser-password = ''.
MESSAGE 'Fill out the required details.' TYPE 'E'.
ENDIF.

SELECT SINGLE * FROM zonline_newuser INTO wa1 WHERE user_name =
wa_newuser-user_name.

IF wa1 IS NOT INITIAL.
IF wa1-password = wa_newuser-password.
CALL SCREEN 0012.

ELSE.
MESSAGE 'Incorrect password.' TYPE 'E' DISPLAY LIKE 'E'.
ENDIF.

ENDIF.

```

```

SELECT SINGLE * FROM zonline_admin INTO wa2 WHERE admin_id =
wa_newuser-user_name.

IF wa2 IS NOT INITIAL.

  IF wa2-admin_pwd = wa_newuser-password.

    CALL SCREEN 0005.

  ELSE.

    MESSAGE 'Incorrect password.' TYPE 'E' DISPLAY LIKE 'E'.

  ENDIF.

  ELSE.

    MESSAGE 'User does not exist.' TYPE 'E'.

  ENDIF.

WHEN 'RESET'.

  CLEAR : wa_newuser.

  MODIFY SCREEN.

ENDCASE.

ENDMODULE.

MODULE status_0002 OUTPUT.

  SET PF-STATUS 'ZONLINE'.

  SET TITLEBAR 'ZONLINE'.

ENDMODULE.

*&-----*
*&  Module USER_COMMAND_0002 INPUT
*&-----*

MODULE user_command_0002 INPUT.

CASE sy-ucomm."on_click

```

```
WHEN 'HOME'.
CLEAR: wa_newuser.
LEAVE TO SCREEN 0003.

WHEN 'SAVE'.
IF wa_newuser-user_name = ' ' AND wa_newuser-password = ' '.
MESSAGE 'Fill out the required details.' TYPE 'E' DISPLAY LIKE 'E'.
b = 1.
ENDIF.

IF b = 0.
SELECT * FROM zonline_newuser INTO TABLE it_newuser.
LOOP AT it_newuser INTO wa1.
IF wa_newuser-user_name = wa1-user_name.
MESSAGE 'User already exists.' TYPE 'E' DISPLAY LIKE 'E'.
a = 1.
EXIT.
ENDIF.

ENDLOOP.

IF a = 0.
MODIFY zonline_newuser FROM wa_newuser.
IF sy-subrc = 0.
MESSAGE 'User created.' TYPE 'S' DISPLAY LIKE 'S'.
LEAVE TO SCREEN 0001.
ENDIF.
ENDIF.
ENDIF.
```

```

WHEN 'RESET'.

CLEAR: wa_newuser.

MODIFY SCREEN.

ENDCASE.

ENDMODULE.

*&-----*
*&    Module STATUS_0003 OUTPUT
*&-----*
*      text
*-----*

MODULE status_0003 OUTPUT.

SET PF-STATUS 'ZONLINE'.

SET TITLEBAR 'ZONLINE'.

ENDMODULE.

*&-----*
*&    Module USER_COMMAND_0003 INPUT
MODULE user_command_0003 INPUT.

CASE sy-ucomm."on_click

WHEN 'NEW_USER'.

CALL SCREEN 0002.

WHEN 'EXISTING_USER'.

CALL SCREEN 0001.

ENDCASE.

ENDMODULE.

```

```
*&-----*
```

```
*& Module USER_COMMAND_0004 INPUT
```

```
*&-----*
```

```
* text
```

```
*-----*
```

```
MODULE user_command_0004 INPUT.
```

```
CASE sy-ucomm.
```

```
    WHEN 'TAKE_EXAM'.
```

```
        wa_q-q_no = 1.
```

```
        SELECT SINGLE * FROM zonline_q INTO wa_q WHERE topic = wa_q-topic  
        AND sub_topic = wa_q-sub_topic AND q_no = 1.
```

```
        CALL SCREEN 0009.
```

```
    ENDCASE.
```

```
ENDMODULE.
```

```
*&-----*
```

```
*& Module STATUS_0005 OUTPUT
```

```
*&-----*
```

```
* text
```

```
*-----*
```

```
MODULE status_0005 OUTPUT.
```

```
    SET PF-STATUS 'ZONLINE'.
```

```
    * SET TITLEBAR 'ZONLINE'.
```

```
ENDMODULE.
```

```
*&-----*
```

```
*& Module USER_COMMAND_0005 INPUT
```

```
*&-----*
```

```

MODULE user_command_0005 INPUT.

CASE sy-ucomm.

WHEN 'HOME'.

CLEAR: wa_newuser.

CALL SCREEN 0003.

WHEN 'NEXT'.

CALL SCREEN 0006.

ENDCASE.

ENDMODULE.

*&-----*
*& Module USER_COMMAND_0006 INPUT
*&-----*

MODULE user_command_0006 INPUT.

CASE sy-ucomm.

WHEN 'LOGOUT'.

CLEAR: wa_newuser, wa_q.

CALL SCREEN 0003.

WHEN 'VIEW_QUESTIONS'.

IF wa_q-topic = '' OR wa_q-sub_topic = ''.

MESSAGE 'Fill out the required details.' TYPE 'E'.

ENDIF.

SELECT SINGLE * FROM zonline_q INTO wa3 WHERE topic = wa_q-topic AND
sub_topic = wa_q-sub_topic AND q_no = 1.

IF wa3 IS INITIAL.

MESSAGE 'No questions created.' TYPE 'E'.

ENDIF.

```

```

wa_q-q_no = 1.

SELECT SINGLE * FROM zonline_q INTO wa_q WHERE topic = wa_q-topic
AND sub_topic = wa_q-sub_topic AND q_no = 1.

CALL SCREEN 0008.

WHEN 'CREATE_QUESTIONS'.

IF wa_q-topic = '' OR wa_q-sub_topic = ''.

MESSAGE 'Fill out the required details.' TYPE 'E'.

ENDIF.

MODIFY zonline_q FROM wa_q.

IF sy-subrc = 0.

MESSAGE 'Topic and Sub-topic created.' TYPE 'S' DISPLAY LIKE 'S'.

ENDIF.

wa_q-q_no = 1.

CALL SCREEN 0007.

WHEN 'RESET'.

CLEAR: wa_q.

MODIFY SCREEN.

ENDCASE.

ENDMODULE.

*&-----*
*&    Module USER_COMMAND_0007 INPUT
*&-----*

MODULE user_command_0007 INPUT.

CASE sy-ucomm.

WHEN 'BACK'.

CLEAR: wa_q.

CALL SCREEN 0006.

```

```

WHEN 'SAVE'.

MODIFY zonline_q FROM wa_q.

IF sy-subrc = 0.

MESSAGE 'Question created.' TYPE 'S'.

ENDIF.

CLEAR: wa_q-q_name, wa_q-a, wa_q-b, wa_q-c, wa_q-d, wa_q-crt_ans, wa_q-
q_marks.

wa_q-q_no = wa_q-q_no + 1.

WHEN 'RESET'.

CLEAR: wa_q-q_name, wa_q-a, wa_q-b, wa_q-c, wa_q-d, wa_q-crt_ans, wa_q-
q_marks.

ENDCASE.

ENDMODULE.

*&-----*
*&    Module USER_COMMAND_0008 INPUT
*&-----*

MODULE user_command_0008 INPUT.

CASE sy-ucomm.

WHEN 'BACK'.

CLEAR: wa_q.

CALL SCREEN 0006.

WHEN 'NEXT'.

wa_q-q_no = wa_q-q_no + 1.

SELECT SINGLE * FROM zonline_q INTO wa_q WHERE q_no = wa_q-q_no
AND topic = wa_q-topic AND sub_topic = wa_q-sub_topic.

```

```

IF sy-subrc = 0.

    MODIFY SCREEN.

    ELSE.

        MESSAGE 'No more questions.' TYPE T.

        wa_q-q_no = wa_q-q_no - 1.

    ENDIF.

ENDCASE.

ENDMODULE.

*&-----*
*&     Module STATUS_0006 OUTPUT
*&-----*
*     text
*-----*

MODULE status_0006 OUTPUT.

    SET PF-STATUS 'ZONLINE'.

    * SET TITLEBAR 'xxx'.

ENDMODULE.

*&-----*
*&     Module STATUS_0007 OUTPUT
*&-----*
*     text
*-----*

MODULE status_0007 OUTPUT.

    SET PF-STATUS 'ZONLINE'.

    * SET TITLEBAR 'xxx'.

ENDMODULE.

```

```

*&    Module STATUS_0008 OUTPUT
*&-----
*    text
*-----
MODULE status_0008 OUTPUT.

SET PF-STATUS 'ZONLINE'.

* SET TITLEBAR 'xxx'.

ENDMODULE.

*&-----
*&    Module USER_COMMAND_0009 INPUT
*&-----
*    text
*-----
MODULE user_command_0009 INPUT.

CASE sy-ucomm.

WHEN 'NEXT'.

IF wa_r-answer = wa_q-crt_ans.

marks = wa_q-q_marks + marks.

ENDIF.

wa_r-user_name = wa_newuser-user_name.

wa_r-topic = wa_q-topic.

wa_r-sub_topic = wa_q-sub_topic.

wa_r-q_no = wa_q-q_no.

MODIFY zonline_result FROM wa_r.

wa_q-q_no = wa_q-q_no + 1.

wa_r-answer = ' '.

```

```
SELECT SINGLE * FROM zonline_q INTO wa_q WHERE q_no = wa_q-q_no AND  
topic = wa_q-topic AND sub_topic = wa_q-sub_topic.
```

```
IF sy-subrc = 0.
```

```
    MODIFY SCREEN.
```

```
ELSE.
```

```
    MESSAGE 'You have completed your exam.' TYPE T.
```

```
    wa_q-q_no = wa_q-q_no - 1.
```

```
ENDIF.
```

```
WHEN 'SUBMIT'.
```

```
    IF wa_r-answer = wa_q-crt_ans.
```

```
        marks = wa_q-q_marks + marks.
```

```
    ENDIF.
```

```
    tmarks = marks.
```

```
    wa_r-user_name = wa_newuser-user_name.
```

```
    wa_r-topic = wa_q-topic.
```

```
    wa_r-sub_topic = wa_q-sub_topic.
```

```
    wa_r-q_no = wa_q-q_no.
```

```
    MODIFY zonline_result FROM wa_r.
```

```
    CALL SCREEN 0010.
```

```
ENDCASE.
```

```
ENDMODULE.
```

```
*&-----*
```

```
*& Module STATUS_0009 OUTPUT
```

```
*-----*
```

```
*     text
```

```
*-----*
```

```

MODULE status_0009 OUTPUT.

SET PF-STATUS 'zonline'.

* SET TITLEBAR 'xxx'.

ENDMODULE.

*&-----*

*& Module USER_COMMAND_0010 INPUT

*&-----*

* text

*-----*

MODULE user_command_0010 INPUT.

CASE sy-ucomm.

WHEN 'BACK'.

CLEAR: wa_q, wa_r,marks,tmarks.

CALL SCREEN 0013.

ENDCASE.

ENDMODULE.

*&-----*

*& Module USER_COMMAND_0011 INPUT

*&-----*

* text

*-----*

MODULE user_command_0011 INPUT.

CASE sy-ucomm.

WHEN 'BACK'.

CLEAR: wa_q, wa_r.

CALL SCREEN 0013.

```

WHEN 'NEXT'.

wa\_q-q\_no = wa\_q-q\_no + 1.

SELECT SINGLE \* FROM zonline\_result INTO wa\_r WHERE user\_name = wa\_newuser-user\_name AND q\_no = wa\_q-q\_no AND topic = wa\_q-topic AND sub\_topic

= wa\_q-sub\_topic.

SELECT SINGLE \* FROM zonline\_q INTO wa\_q WHERE q\_no = wa\_q-q\_no AND topic = wa\_q-topic AND sub\_topic = wa\_q-sub\_topic.

IF sy-subrc = 0.

MODIFY SCREEN.

ELSE.

MESSAGE 'No more questions.' TYPE T.

wa\_q-q\_no = wa\_q-q\_no - 1.

MODIFY SCREEN.

ENDIF.

ENDCASE.

ENDMODULE.

\*sy-datum

\*sy-timlo

\*&-----\*

\*& Module USER\_COMMAND\_0012 INPUT

MODULE user\_command\_0012 INPUT.

CASE sy-ucomm.

WHEN 'NEXT'.

CALL SCREEN 0013.

ENDCASE.

ENDMODULE.

```

*&    Module USER_COMMAND_0013 INPUT
*&-----
*    text
*-----
MODULE user_command_0013 INPUT.

CASE sy-ucomm.

WHEN 'LOGOUT'.

CLEAR: wa_newuser,wa_q,wa_r,marks,tmarks.

CALL SCREEN 0003.

WHEN 'VIEW_RESULT'.

IF wa_q-topic = '' AND wa_q-sub_topic = ''.

MESSAGE 'Fill out the required details.' TYPE 'E'.

ENDIF.

SELECT SINGLE * FROM zonline_result INTO wa_r WHERE user_name =
wa_newuser-user_name AND topic = wa_q-topic AND sub_topic = wa_q-sub_topic
AND q_no = 1.

IF wa_r IS INITIAL.

MESSAGE 'Test not attempted.' TYPE 'E'.

ELSE.

wa_q-q_no = 1.

SELECT SINGLE * FROM zonline_q INTO wa_q WHERE topic = wa_q-topic
AND sub_topic = wa_q-sub_topic AND q_no = 1.

SELECT SINGLE * FROM zonline_result INTO wa_r WHERE user_name =
wa_newuser-user_name AND topic = wa_q-topic AND sub_topic = wa_q-sub_topic
AND q_no = 1.

CALL SCREEN 0011.

ENDIF.

```

```

WHEN 'RESET'.

CLEAR: wa_q.

MODIFY SCREEN.

WHEN 'GET_EXAM_ID'.

IF wa_q-topic = '' OR wa_q-sub_topic = ''.

MESSAGE 'Fill out the required details.' TYPE 'E'.

ENDIF.

SELECT SINGLE * FROM zonline_q INTO wa3 WHERE topic = wa_q-topic AND
sub_topic = wa_q-sub_topic AND q_no = 1 .

IF wa3 IS INITIAL.

MESSAGE 'Invalid topic or Sub-topic.' TYPE 'E' .

ELSE.

SELECT SINGLE * FROM zonline_result INTO wa_r WHERE user_name =
wa_newuser-user_name AND topic = wa_q-topic AND sub_topic = wa_q-sub_topic
AND q_no = 1.

IF wa_r IS NOT INITIAL.

MESSAGE 'No attempts remaining.' TYPE 'E'.

ELSE.

CONCATENATE wa_newuser-user_name sy-datum sy-timlo INTO wa_r-
exam_id.

CALL SCREEN 0004.

ENDIF.

ENDIF.

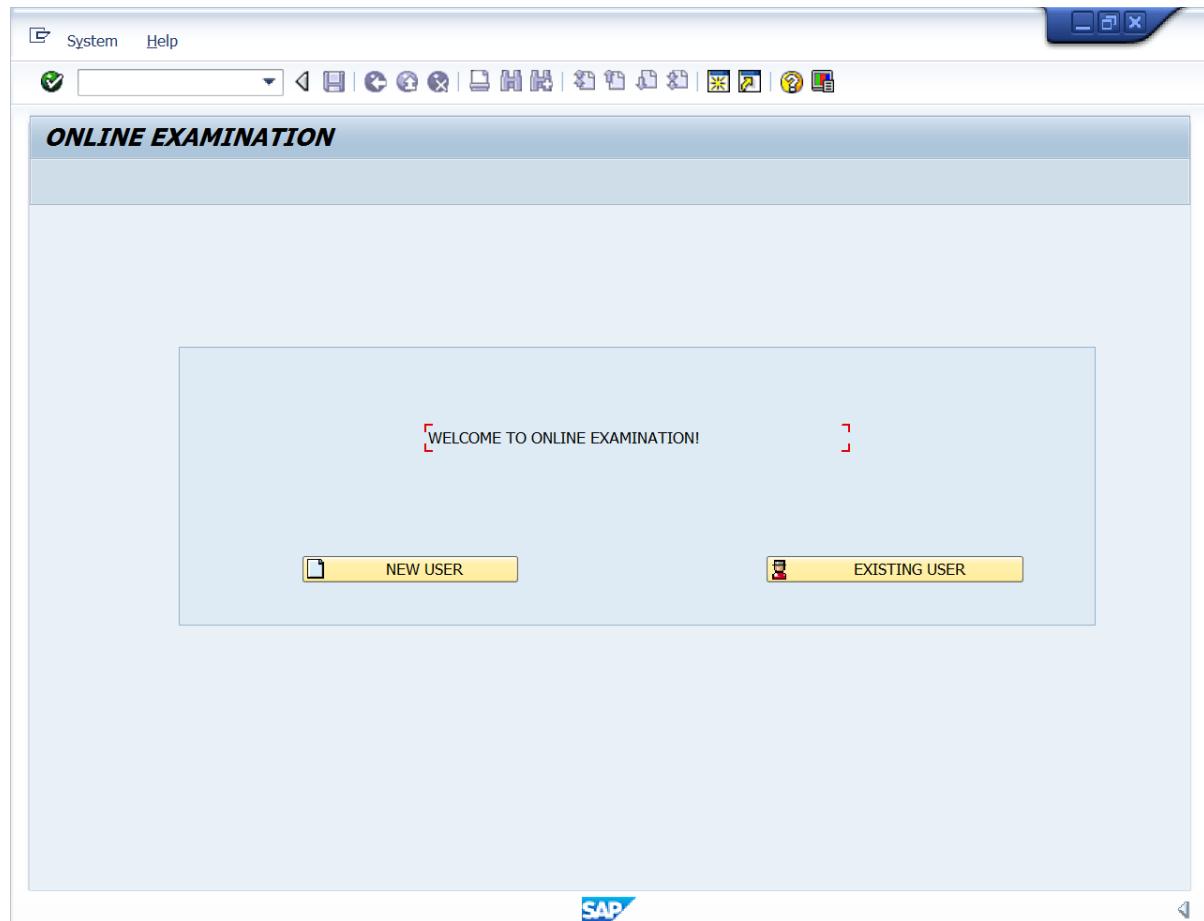
ENDCASE.

ENDMODULE.

```

## 5.4 Output Screens

### 5.4.1 Home Page



**Fig 12: Home Page**

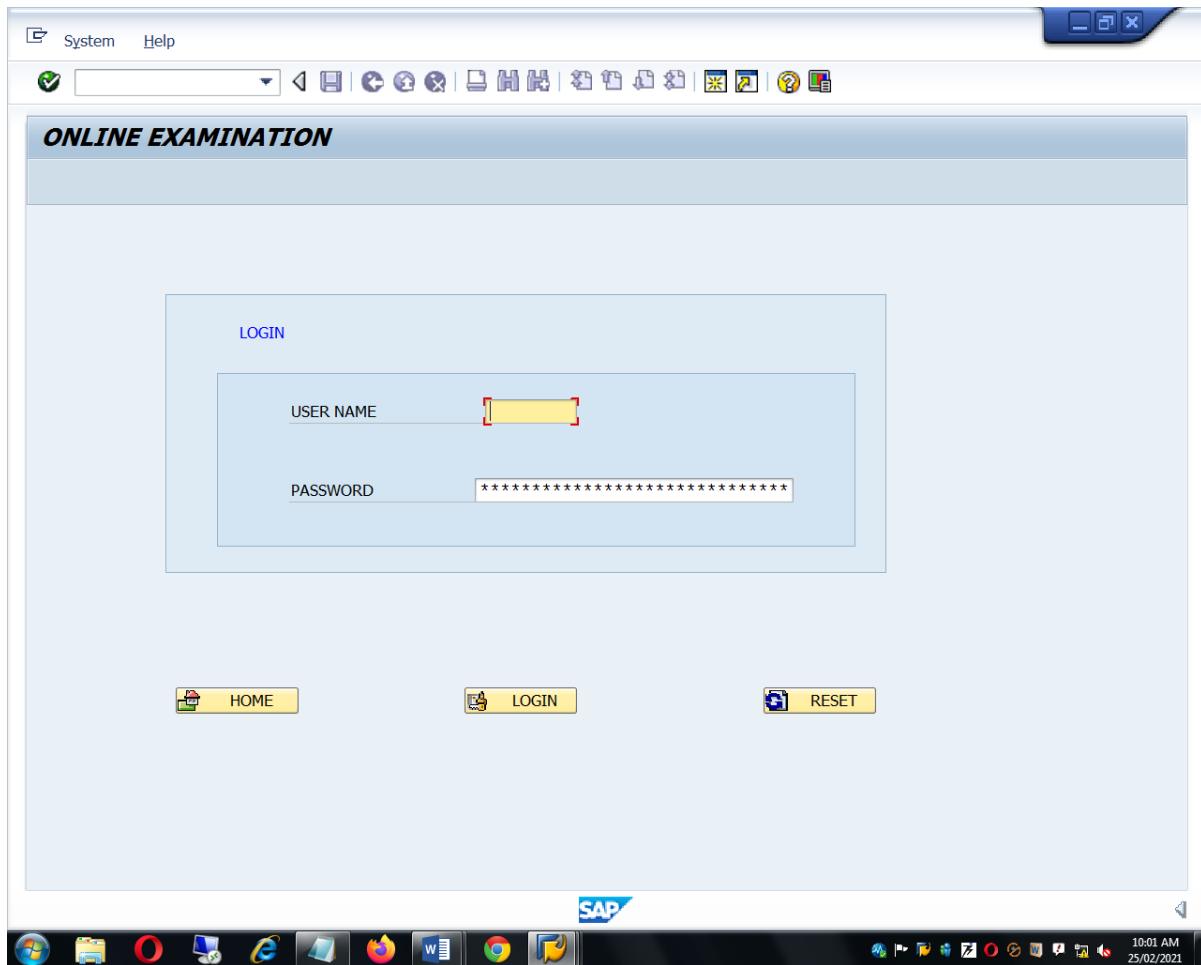
When clicked on “NEW USER”, the user is allowed to create a new candidate in Candidates login details Database, whereas clicking on “EXISTING USER”, allows the user i.e. Administrator or Candidate to login.

## 5.4.2 Create User Page

The screenshot shows a SAP graphical user interface (GUI) window titled "ONLINE EXAMINATION". The main title bar includes "System" and "Help" buttons, along with standard window control icons. Below the title bar is a toolbar with various icons. The main content area is titled "CREATE USER". It contains four input fields: "NAME" with the value "KRANTHI", "DATE OF BIRTH(DD.MM.YYYY)" with the value "08.10.2001", "USER NAME(UPTO 8 CHARACTERS)" with the value "KRANTHI" (highlighted with a red border), and "PASSWORD" with a masked value consisting of numerous asterisks. A message "Caps lock is switched on" is displayed below the password field. At the bottom of the form are two buttons: "SAVE" and "RESET". The SAP logo is visible at the bottom center of the screen, along with a taskbar containing various application icons and the system date and time (10:41 AM, 25/02/2021).

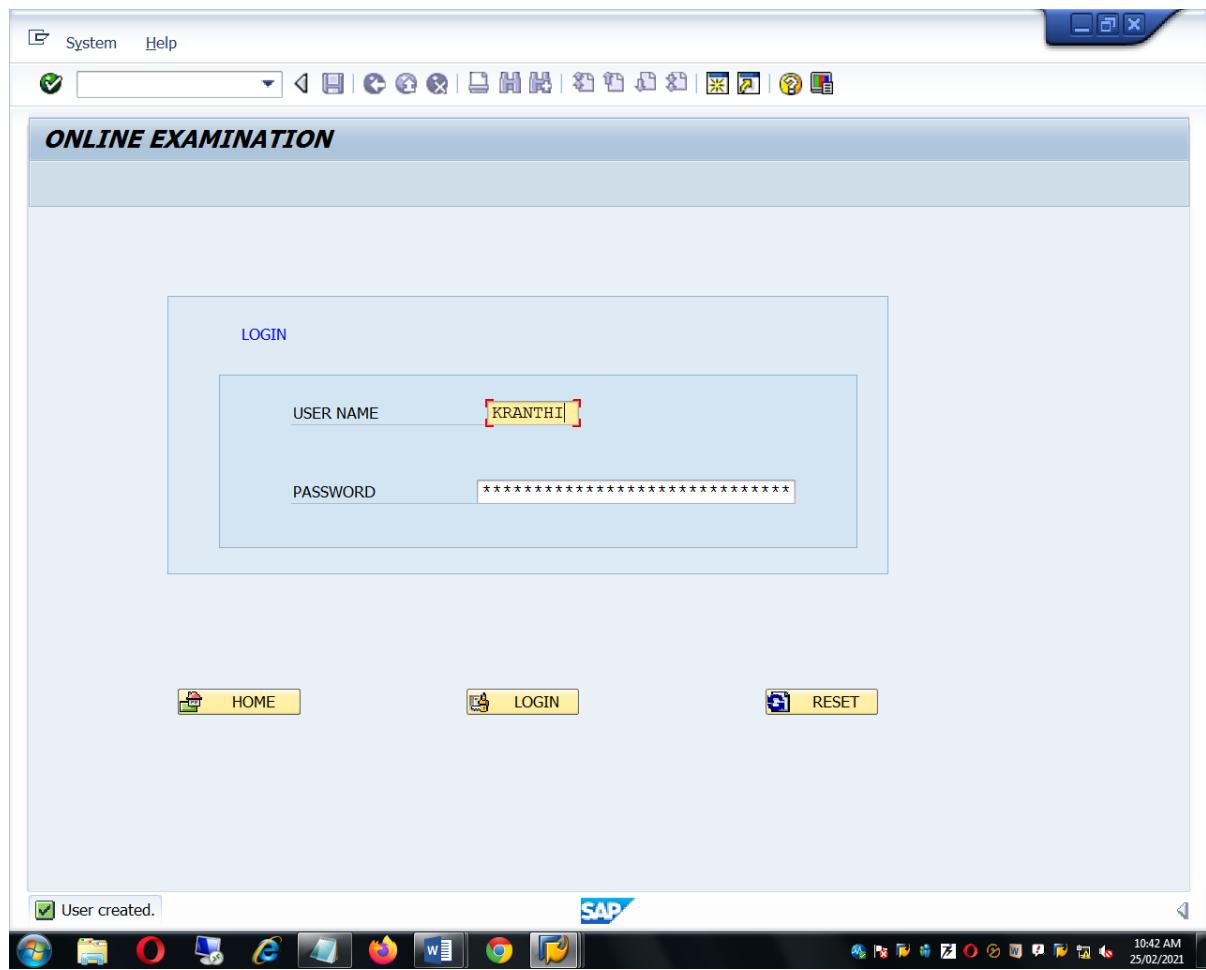
Fig 13: Create user Page

### 5.4.3 Login Page



**Fig 14: Login Page**

After entering the details in the “CREATE USER PAGE”, when clicked on “SAVE” the user is created as an entry in the candidate’s login details database and when “RESET” is clicked the details entered on the form are reset (cleared) whereas “HOME” button redirects to the “HOME PAGE”.



**Fig 15: User created**

After entering the required details in “LOGIN PAGE”, when clicked on “LOGIN”, if the credentials entered are related to administrator (are in administrator database), the Administrator’s welcome page is displayed otherwise (if the details entered are in the Candidate’s login details Database) the Candidate’s welcome page is displayed.

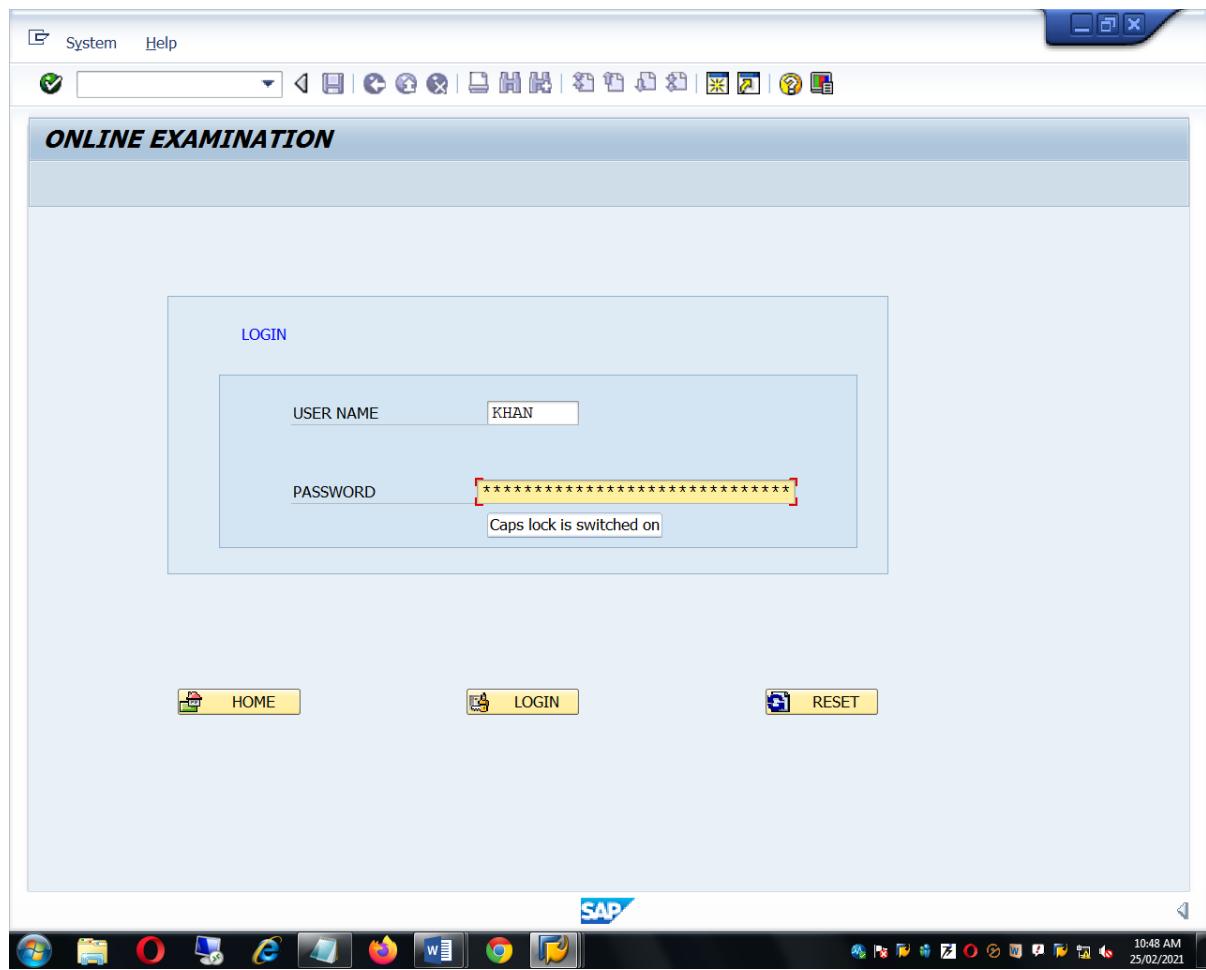
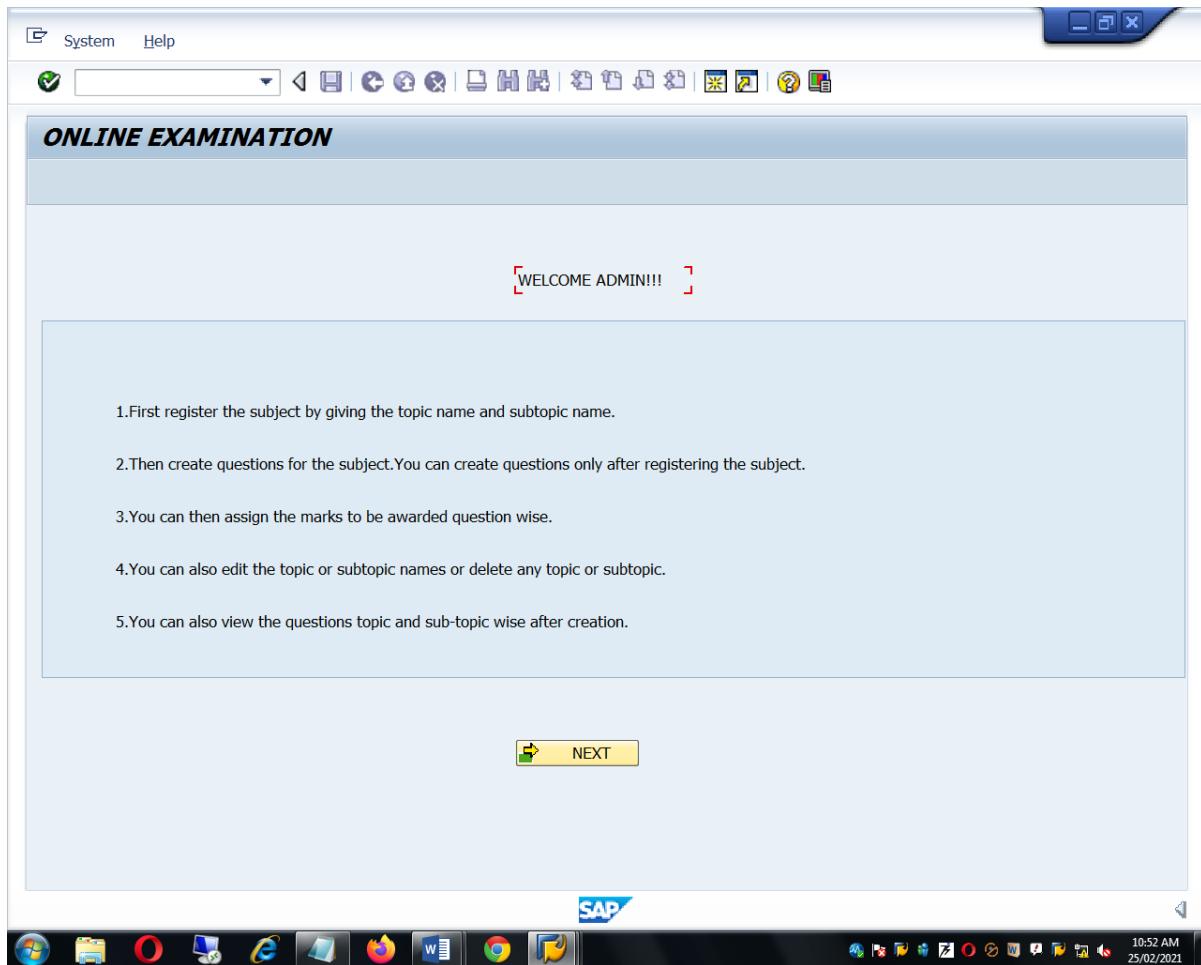


Fig 16: Administrator Login credentials in Login Page

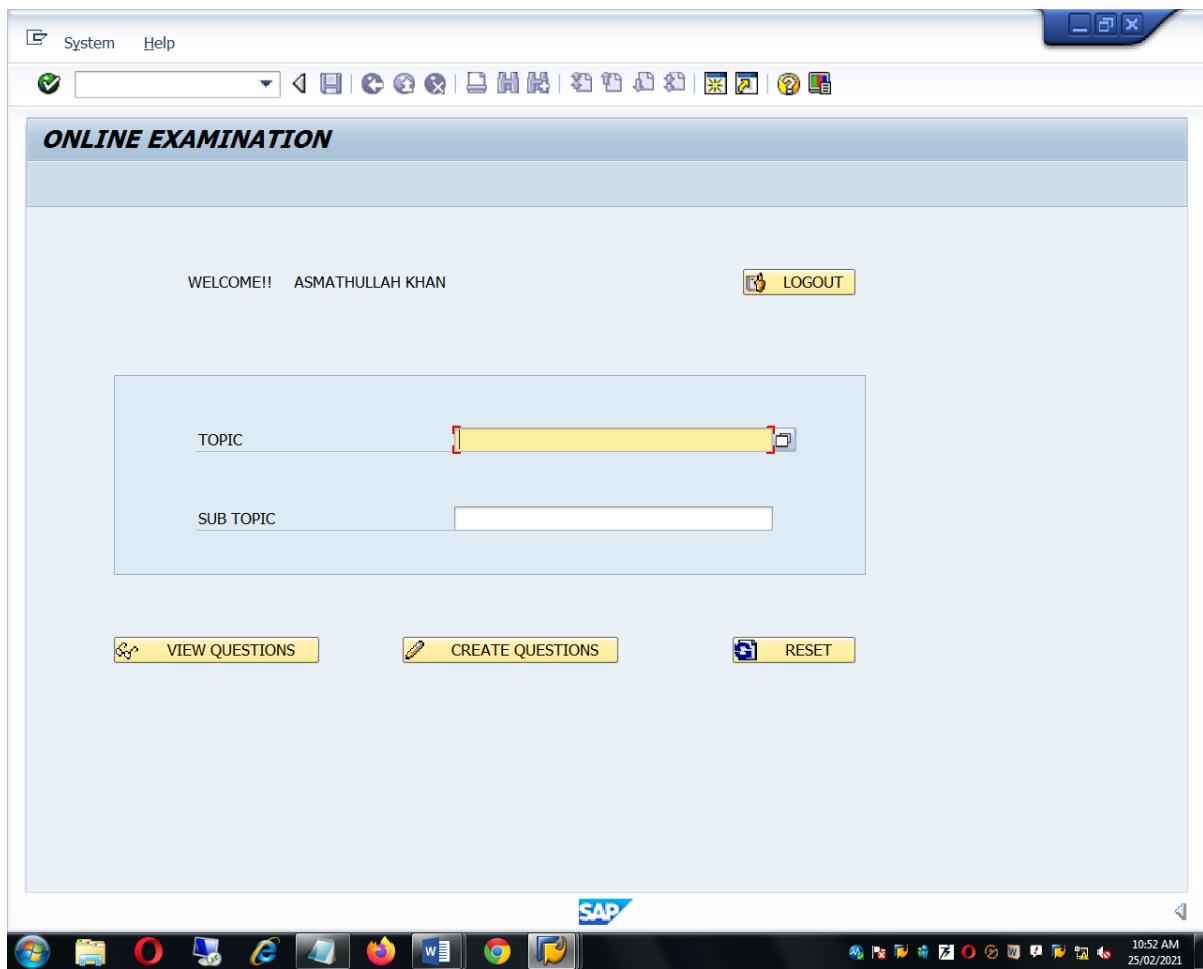
#### 5.4.4 Administrator's Welcome Page



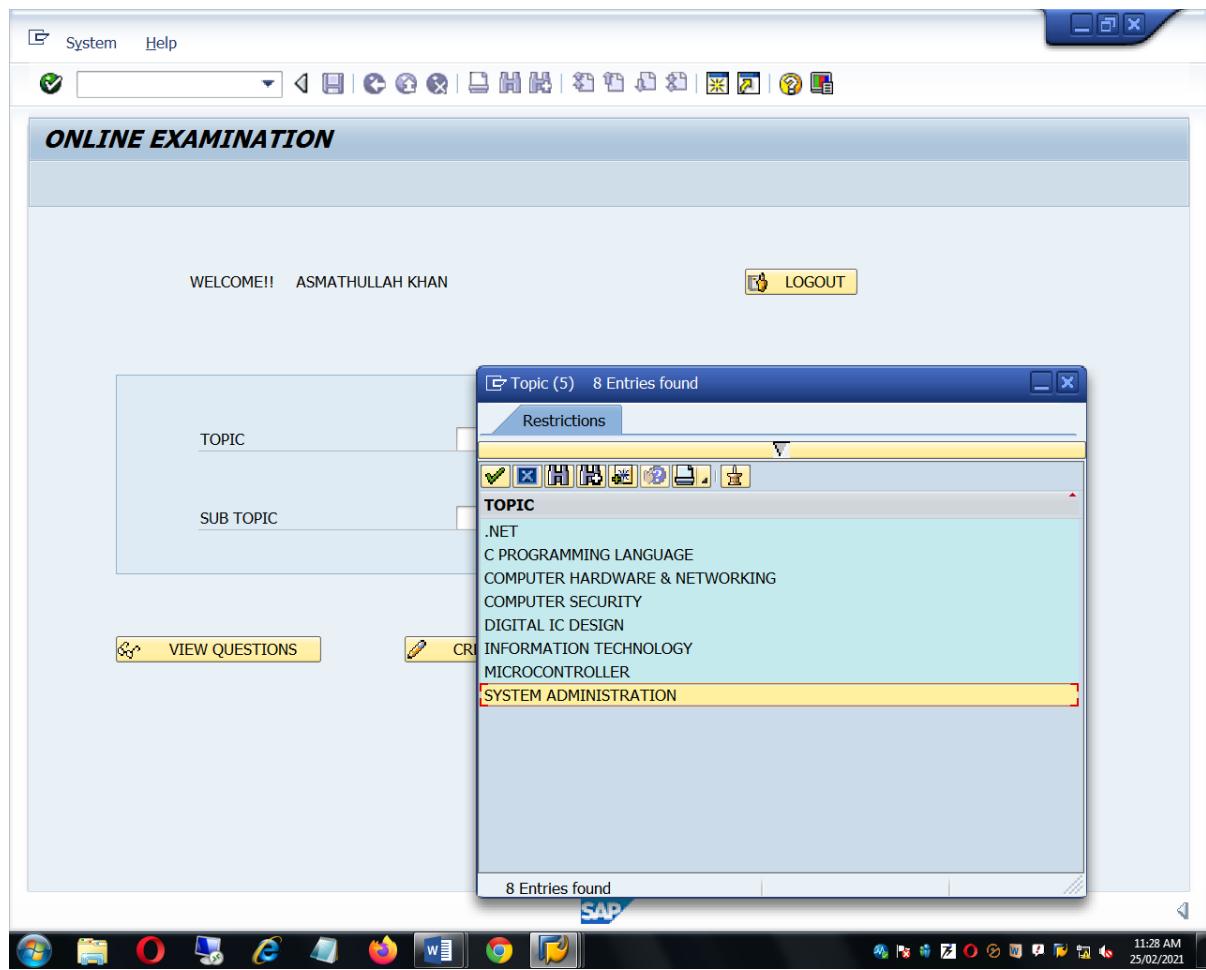
**Fig 17: Administrator's Welcome Page**

When “NEXT” is clicked, the “ADMINISTRATOR’S HOME PAGE” is displayed.

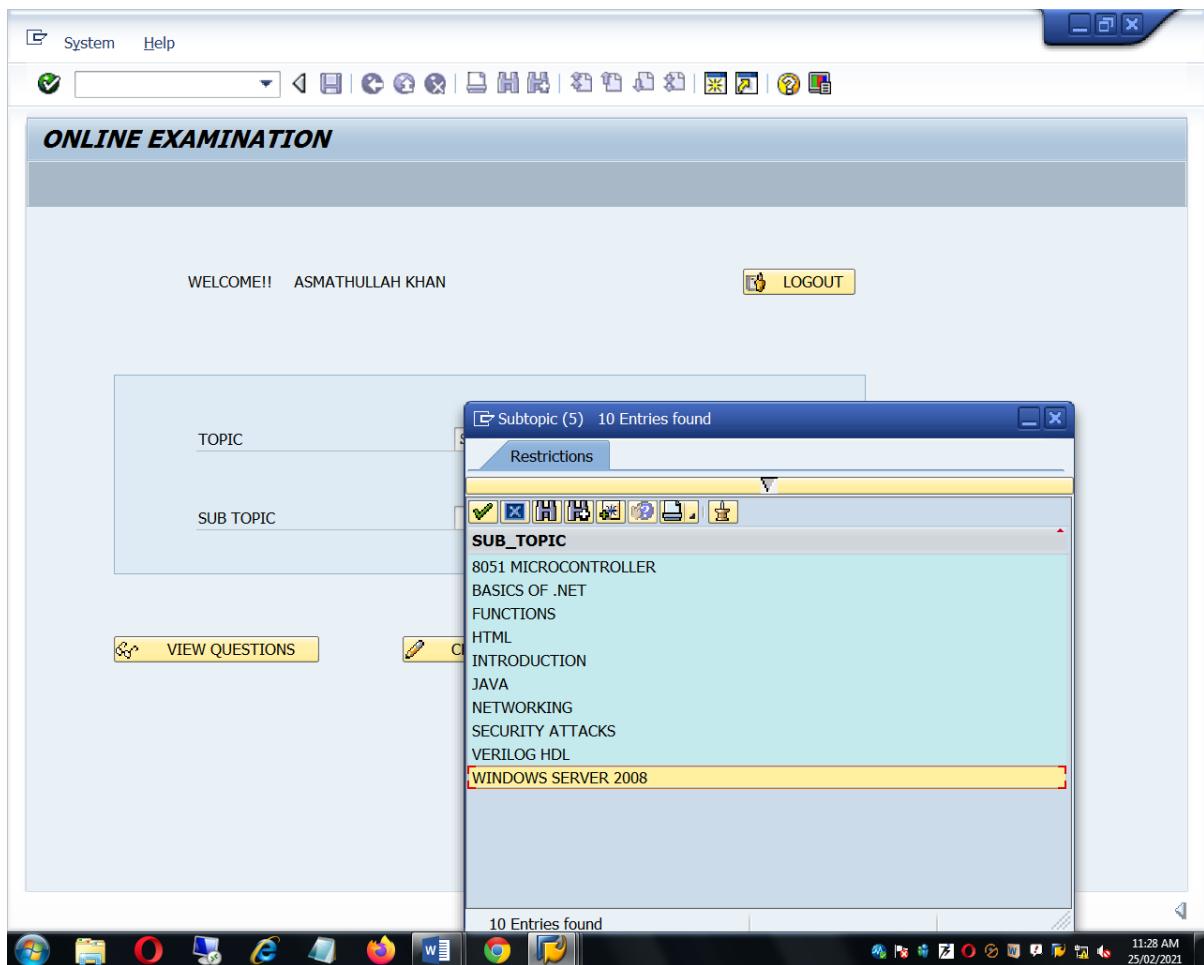
### 5.4.5 Administrator's Home Page



**Fig 18.1: Administrator's Home Page**



**Fig 18.2: Administrator's Home Page (Topic search help)**



**Fig 18.3: Administrator's Home Page (Sub-Topic search help)**

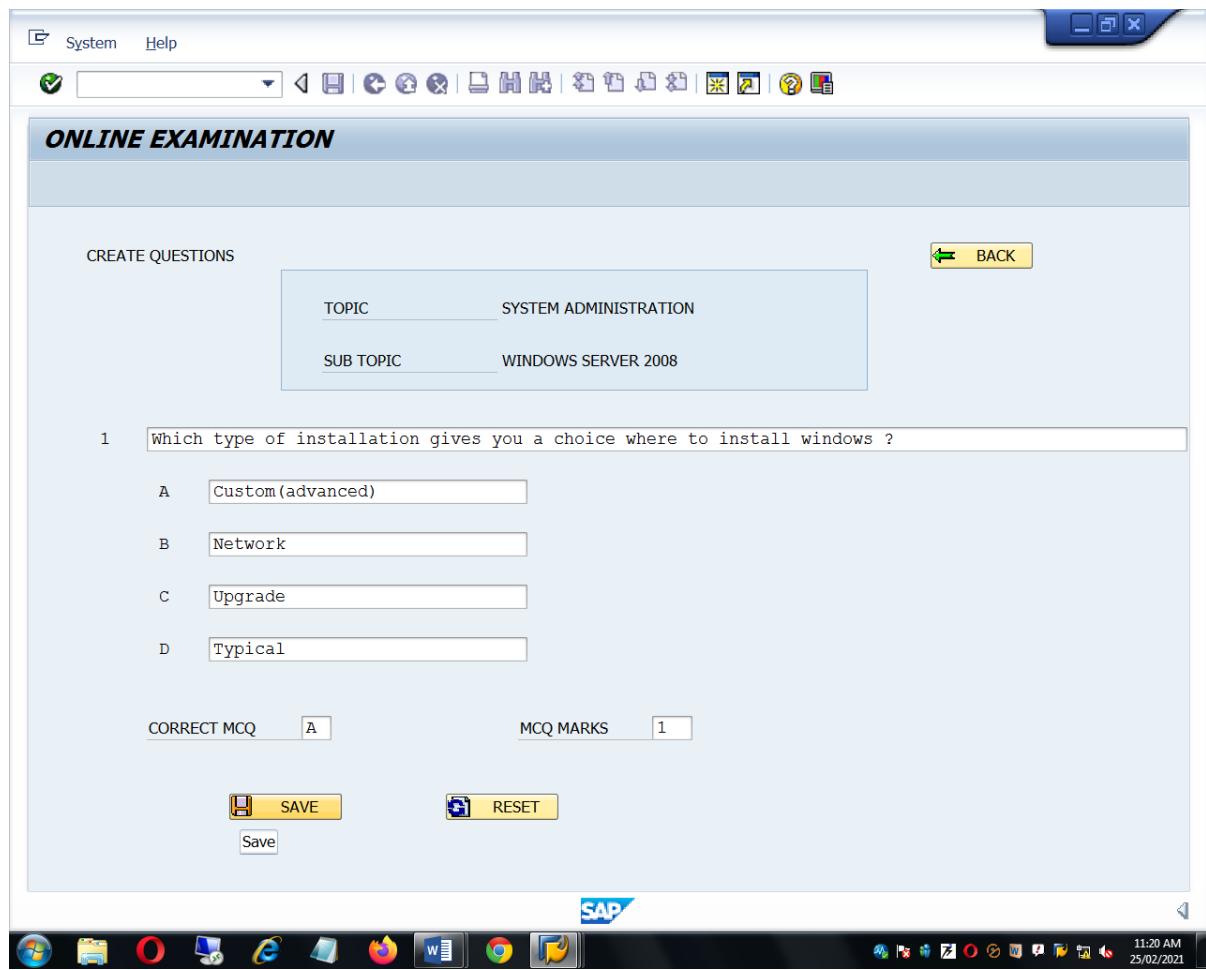
After entering the topic and sub-topic (can be entered using the search help also) in which the questions are to be registered or viewed, when clicked on “CREATE QUESTIONS” the administrator is allowed to create questions in the particular topic and sub-topic entered (displays “CREATE QUESTIONS PAGE”), when clicked on “VIEW QUESTIONS” the administrator is allowed to review the questions already registered in the entered topic and sub-topic (displays “VIEW QUESTIONS PAGE”) and when clicked on “LOGOUT” the administrator is logged out and redirected to the “HOME PAGE”.

#### 5.4.6 Create Questions Page

The screenshot shows a software interface titled "ONLINE EXAMINATION". At the top, there is a toolbar with various icons. Below the toolbar, the main title "CREATE QUESTIONS" is displayed. Underneath it, the "TOPIC" is listed as "SYSTEM ADMINISTRATION" and the "SUB TOPIC" is listed as "WINDOWS SERVER 2008". A question number "1" is shown, followed by a long yellow horizontal input field. Below this field are four options labeled A, B, C, and D, each with a corresponding empty input box. At the bottom left, there is a checkbox labeled "CORRECT MCQ" and a text input field labeled "MCQ MARKS". Below these fields are two buttons: "SAVE" and "RESET". A message at the bottom left states "Topic and Sub-topic created." with a checkmark icon. The SAP logo is visible in the bottom right corner of the window frame.

**Fig 19: Create Questions Page**

When clicked on “SAVE”, the question with respective options are saved as an entry in the Question paper Database with its related topic and sub-topic. Administrator can also go back when he/she finishes entering the questions or doesn’t want to register questions in the particular topic or sub-topic by clicking on “BACK” which redirects to the “ADMINISTRATOR’S HOME PAGE”.



**Fig 20.1: Question created**

System Help

ONLINE EXAMINATION

CREATE QUESTIONS

TOPIC SYSTEM ADMINISTRATION  
SUB TOPIC WINDOWS SERVER 2008

2 [ ]

A [ ]  
B [ ]  
C [ ]  
D [ ]

CORRECT MCQ [ ] MCQ MARKS [ ]

[ ] SAVE [ ] RESET

Question created.

SAP

11:20 AM 25/02/2021

Question created.

Fig 20.2: Question created (1)

System Help

ONLINE EXAMINATION

CREATE QUESTIONS

TOPIC SYSTEM ADMINISTRATION  
SUB TOPIC WINDOWS SERVER 2008

BACK

2 In an Active Directory tree or forest, each domain controller will store a copy of its own domain?

A True  
B False  
C Maybe  
D None

CORRECT MCQ A MCQ MARKS 1

SAVE Save RESET

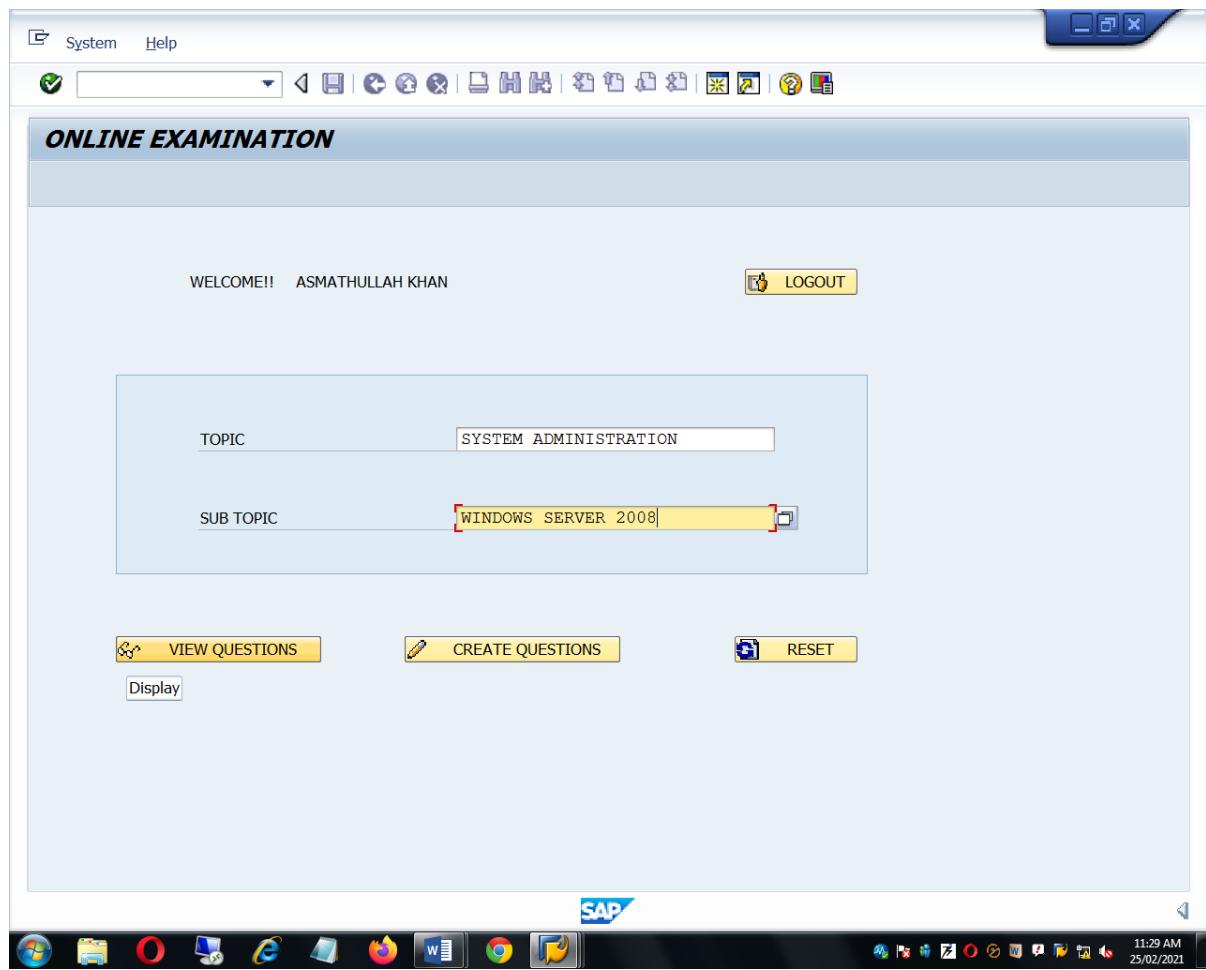
Question created.

SAP

11:22 AM 25/02/2021

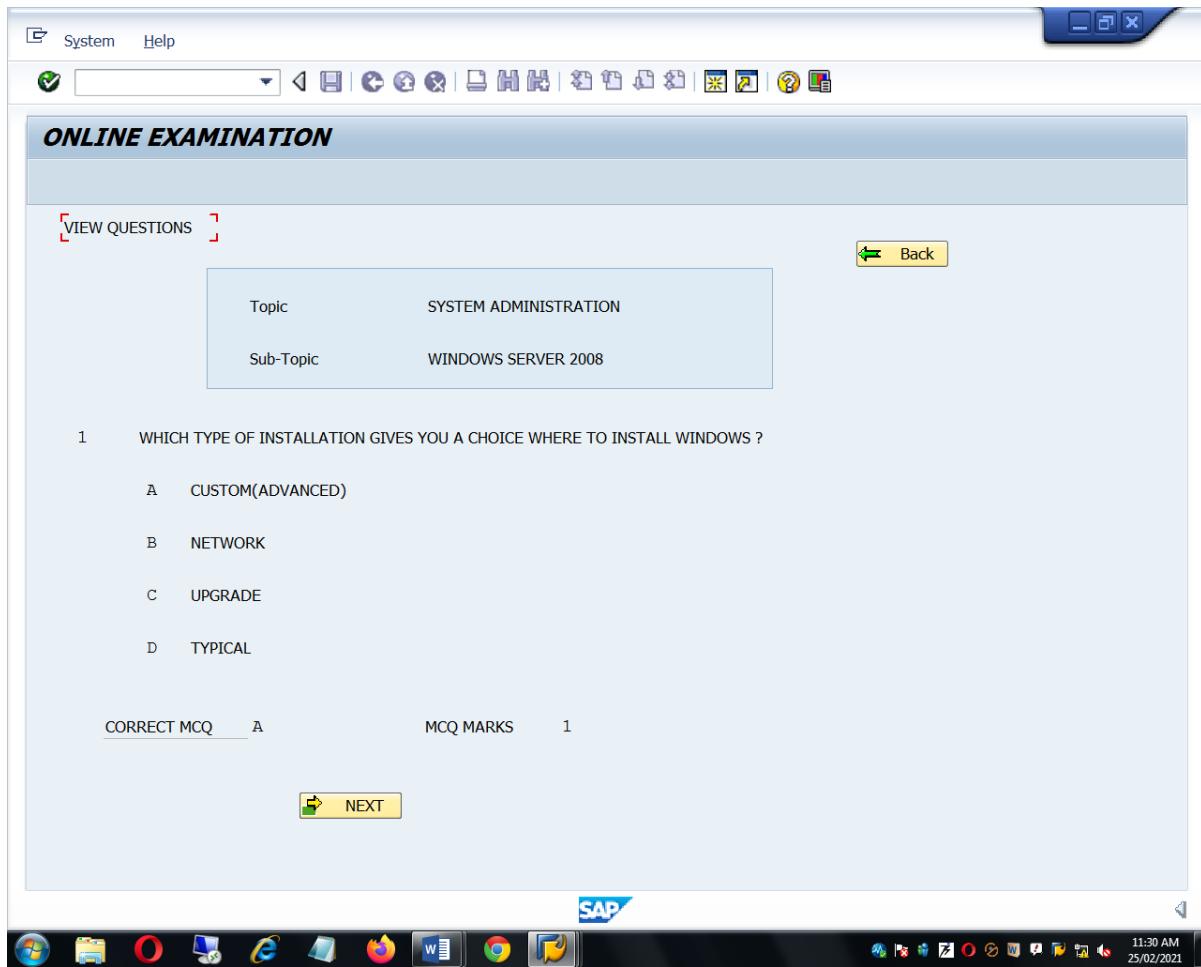
The screenshot shows a Windows desktop environment with various application icons in the taskbar. The SAP logo is visible in the system tray. The main window is titled "ONLINE EXAMINATION" and is titled "CREATE QUESTIONS". It displays a question about Active Directory and four options (A, B, C, D) for the user to select. The correct answer, "True", is selected. The question is marked as correct ("Question created.") and has 1 mark assigned. There are buttons for "SAVE" and "RESET" at the bottom of the form.

Fig 20.3: Question created (2)



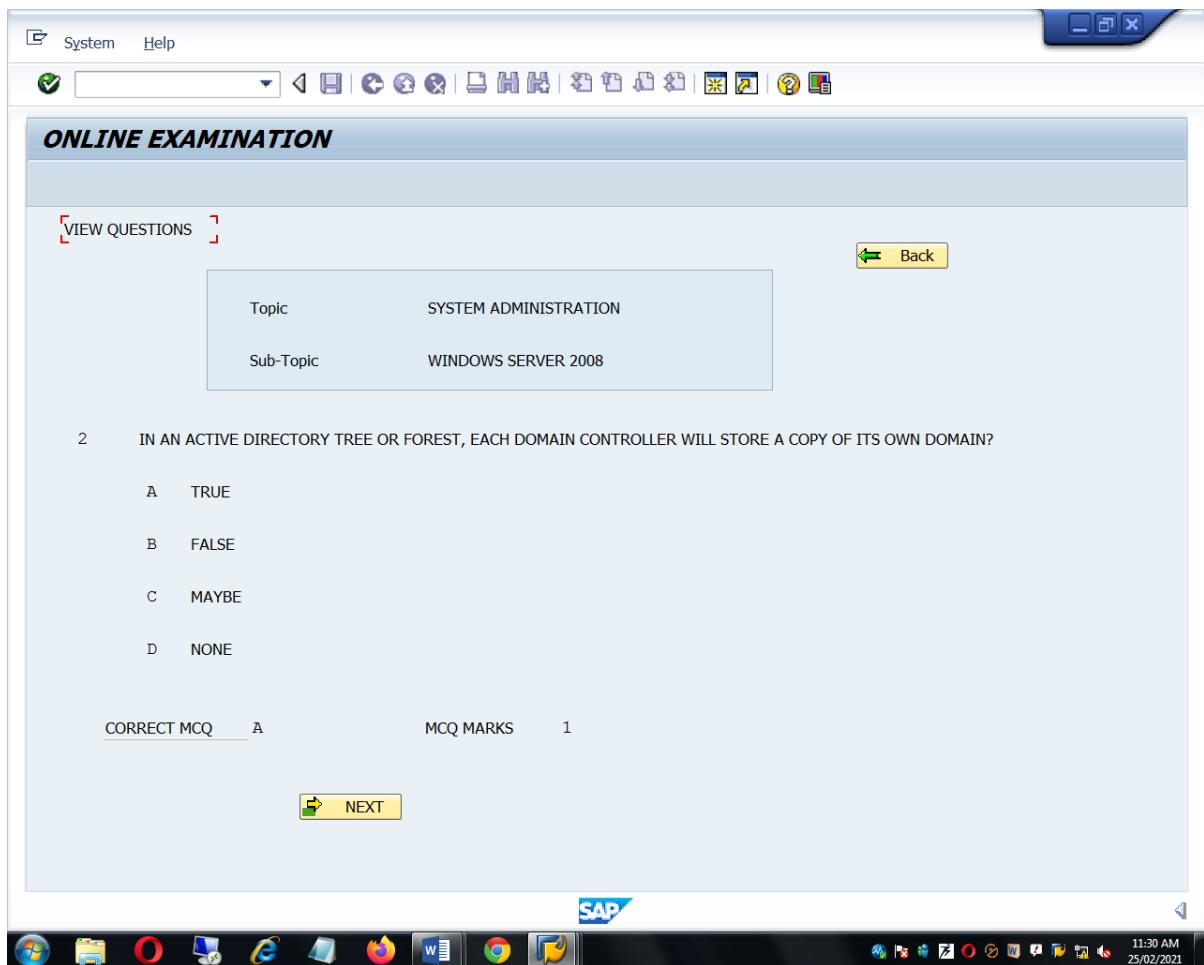
**Fig 21.1: View Questions (button)**

### 5.4.7 View Questions Page



**Fig 21.2: View Questions Page (1)**

Click on “NEXT” to view all other questions registered in the respective topic and sub-topic.



**Fig 21.3: View Questions Page (2)**

When you have viewed all the questions of the respective topic and sub topic, on clicking “NEXT” an information message pops up saying “No more questions”, then click on “BACK” to be redirected to the “ADMINISTRATOR’S HOME PAGE”.

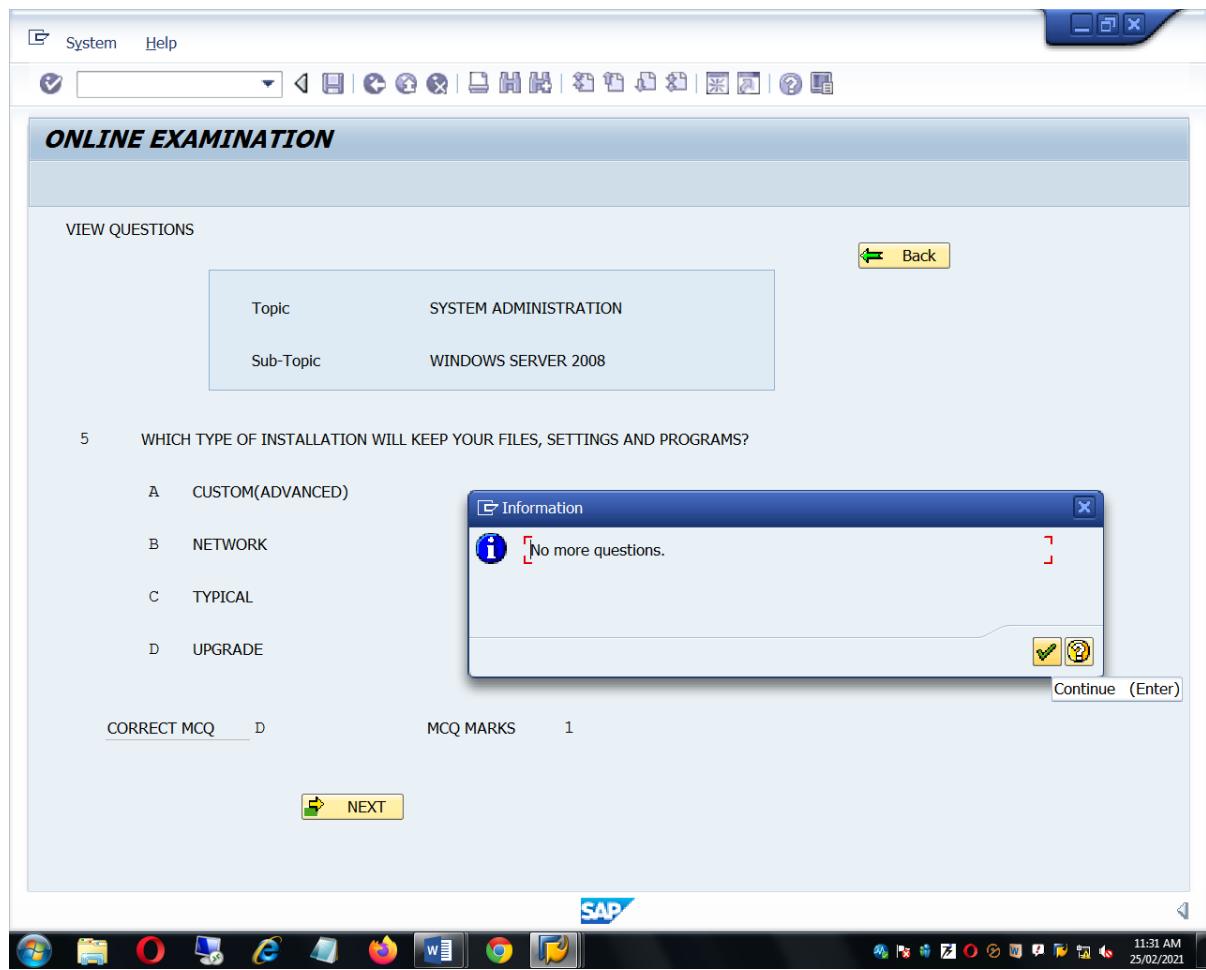
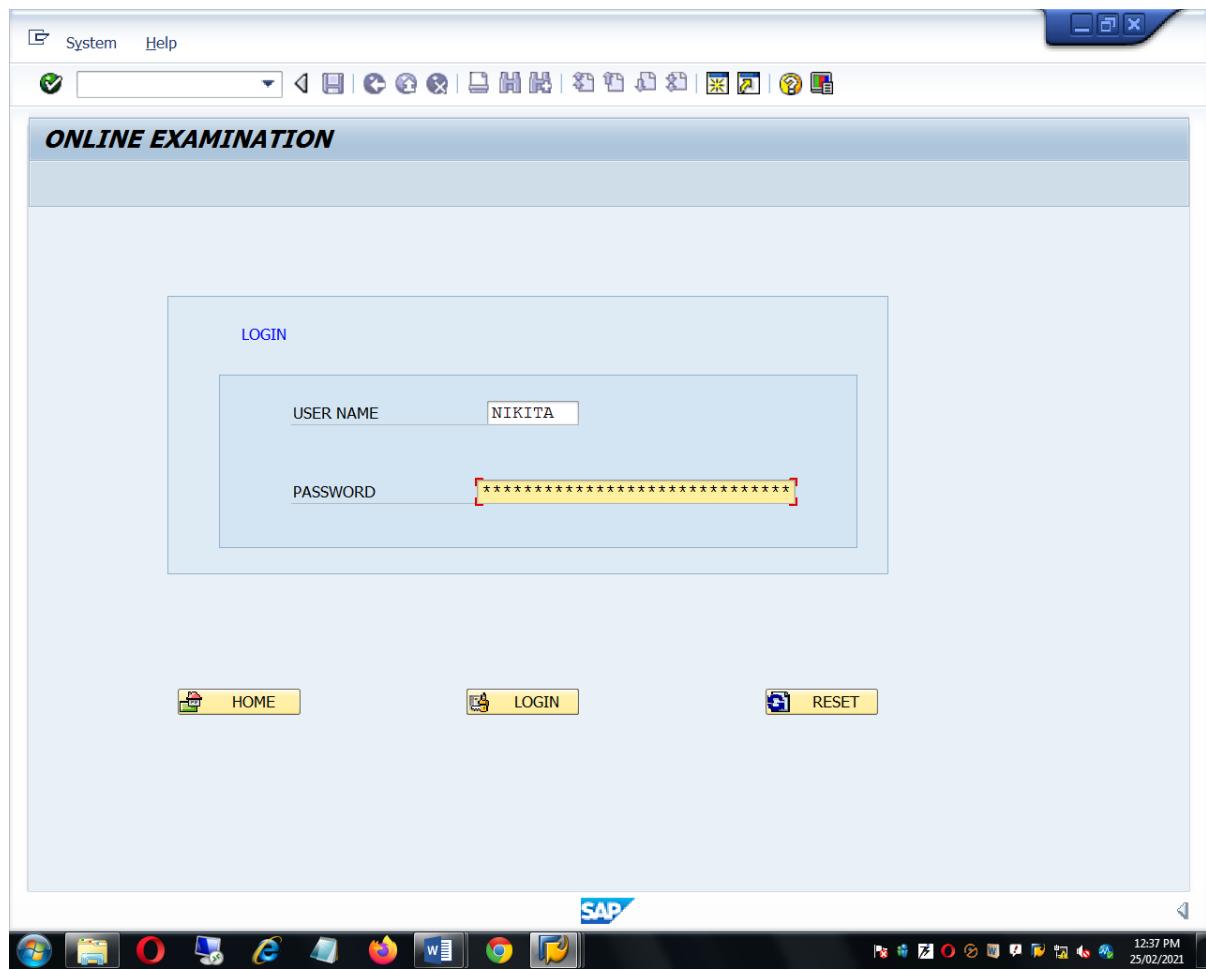
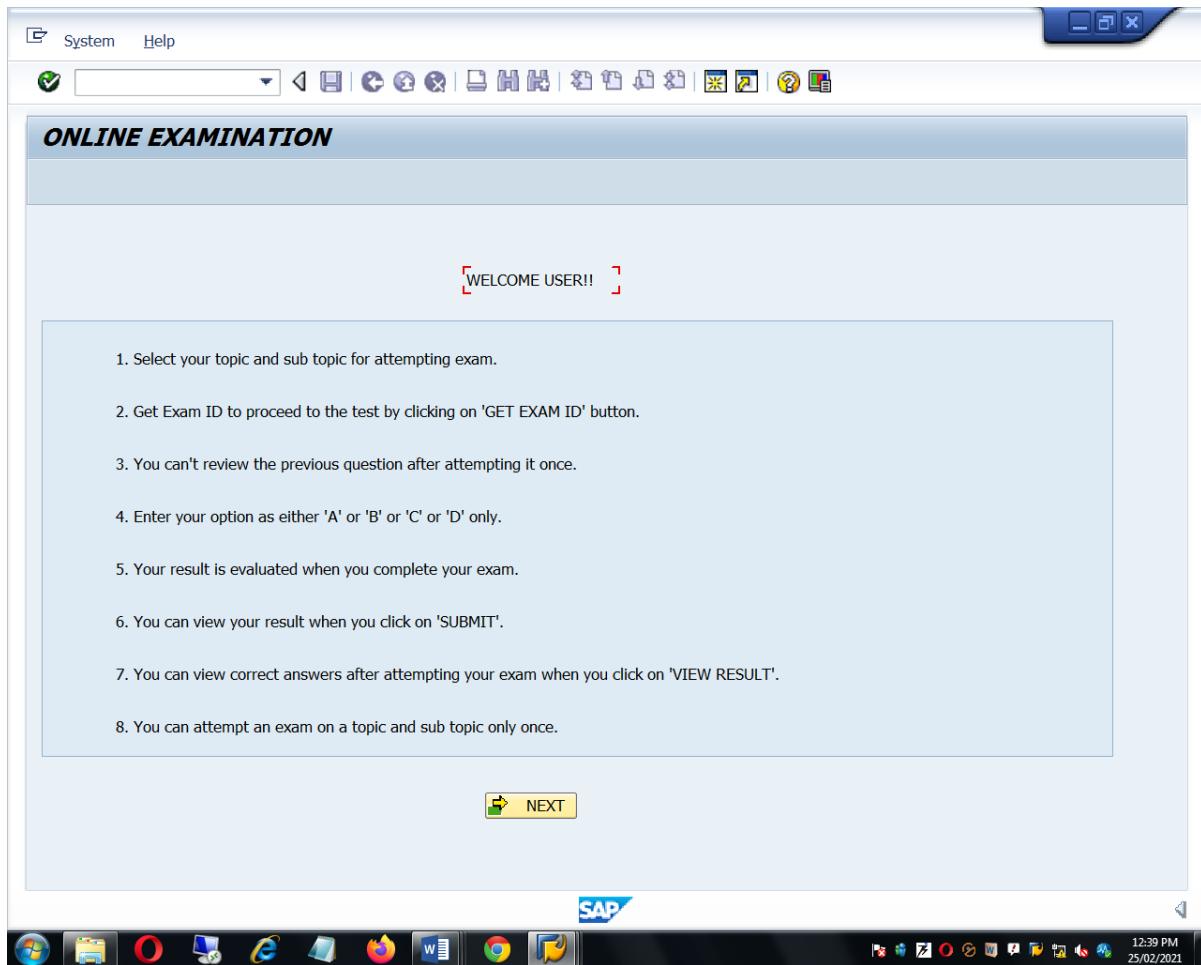


Fig 21.4: View Questions Page (Information message)



**Fig 22: Candidate's Login credentials in Login Page**

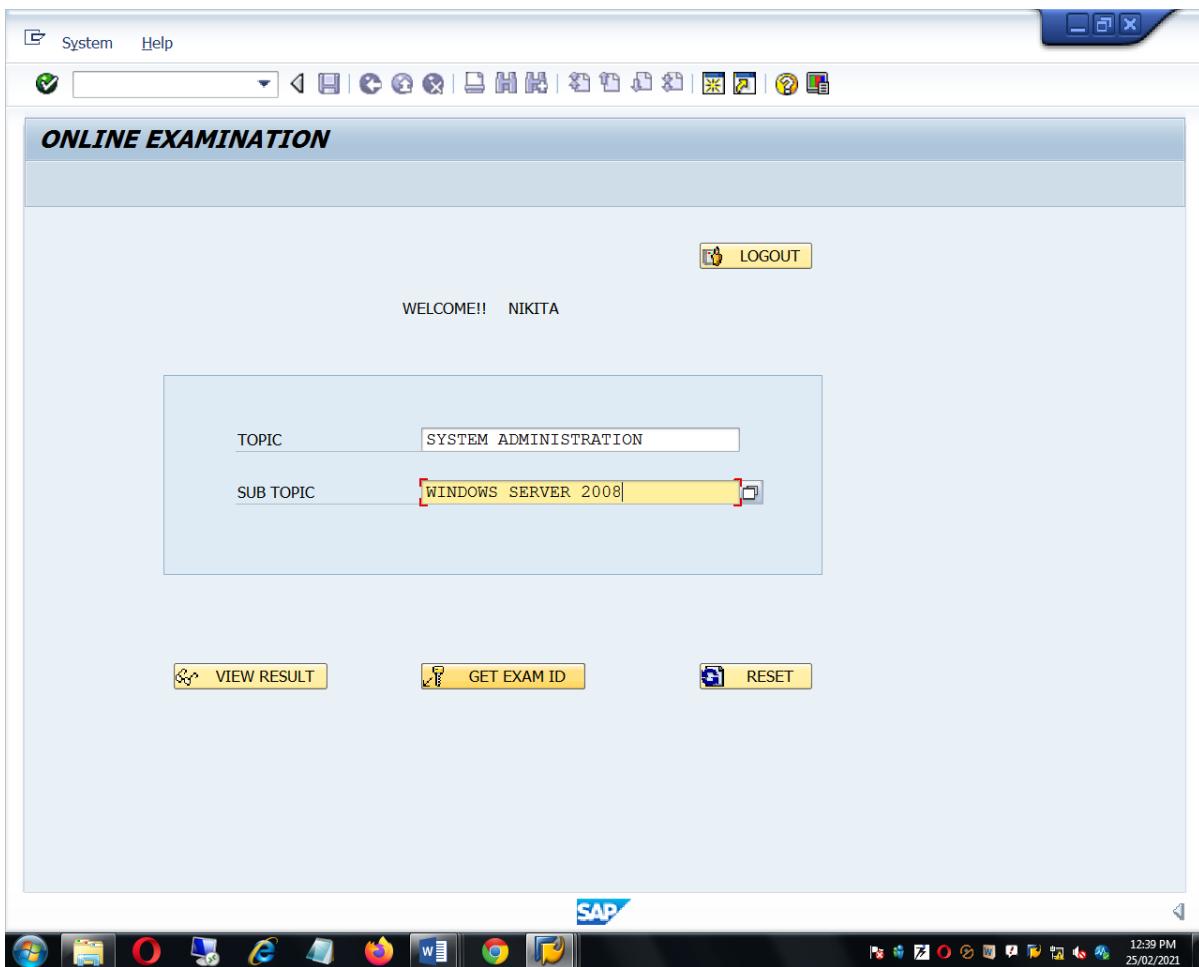
### 5.4.8 Candidate's Welcome Page



**Fig 23: Candidate's Welcome Page**

When “NEXT” is clicked, the “CANDIDATE’S HOME PAGE” is displayed.

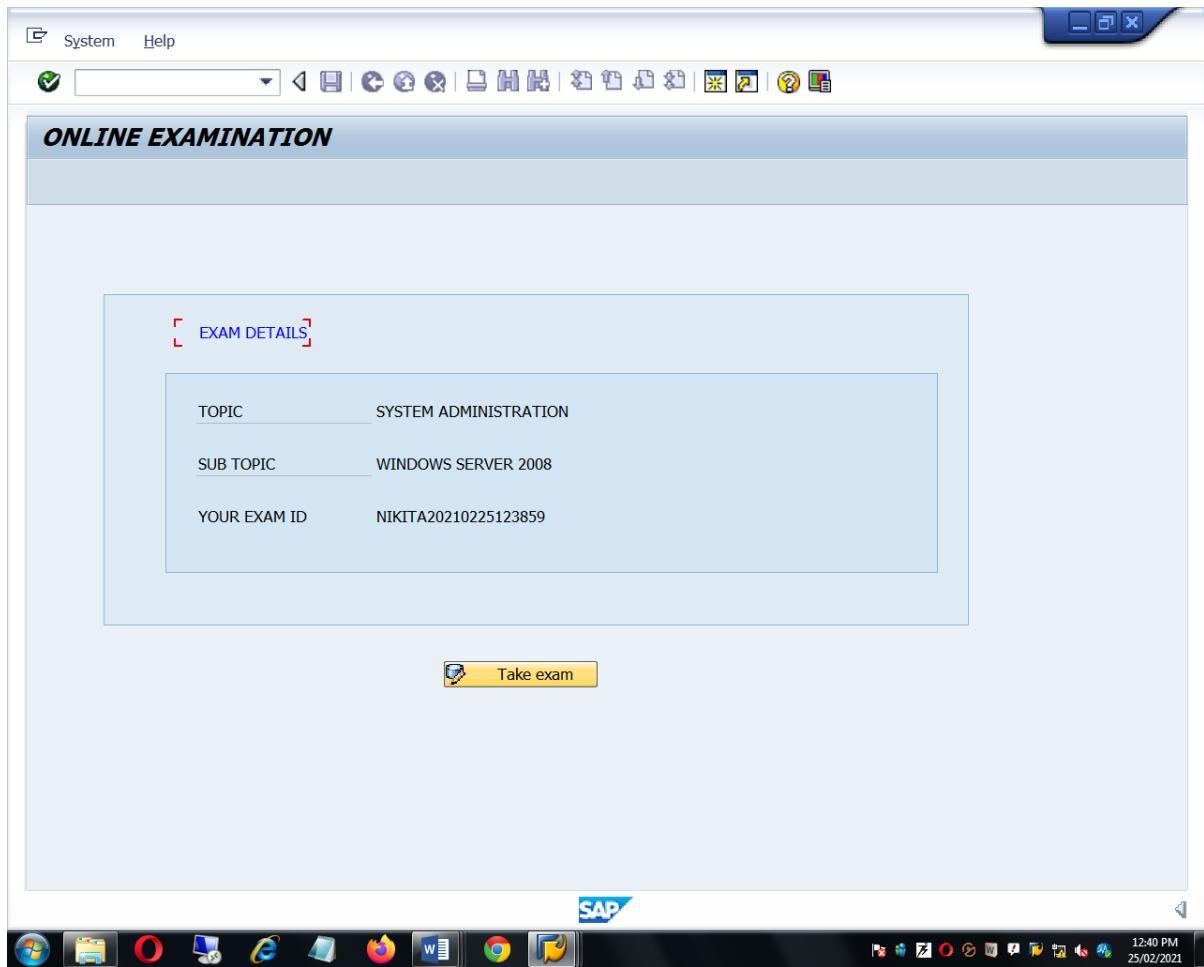
#### 5.4.9 Candidate's Home Page



**Fig 24: Candidate's Home page**

After entering the topic and sub-topic (can be entered using the search help also) for which the candidates wants to take assessment or view results , when clicked on “GET EXAM ID” the Exam ID is generated and the candidate is redirected to the “EXAM DETAILS PAGE”, when clicked on “VIEW RESULTS” the candidate is allowed to view the results of the assessment already attempted with respect to the topic and sub-topic (displays “VIEW RESULT PAGE”) and when clicked on “LOGOUT” the candidate is logged out and redirected to the “HOME PAGE”.

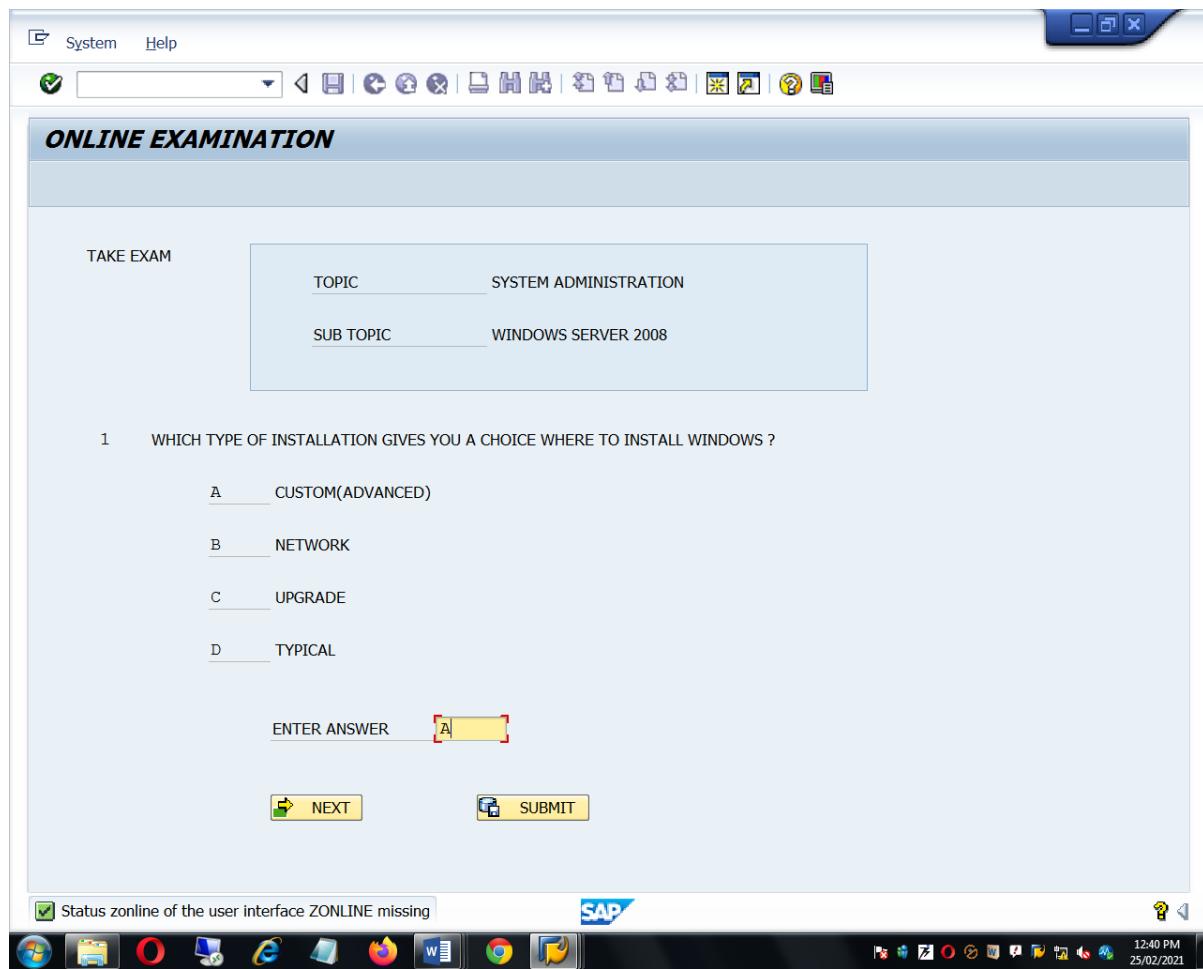
#### 5.4.10 Exam Details Page



**Fig 25: Exam Details Page**

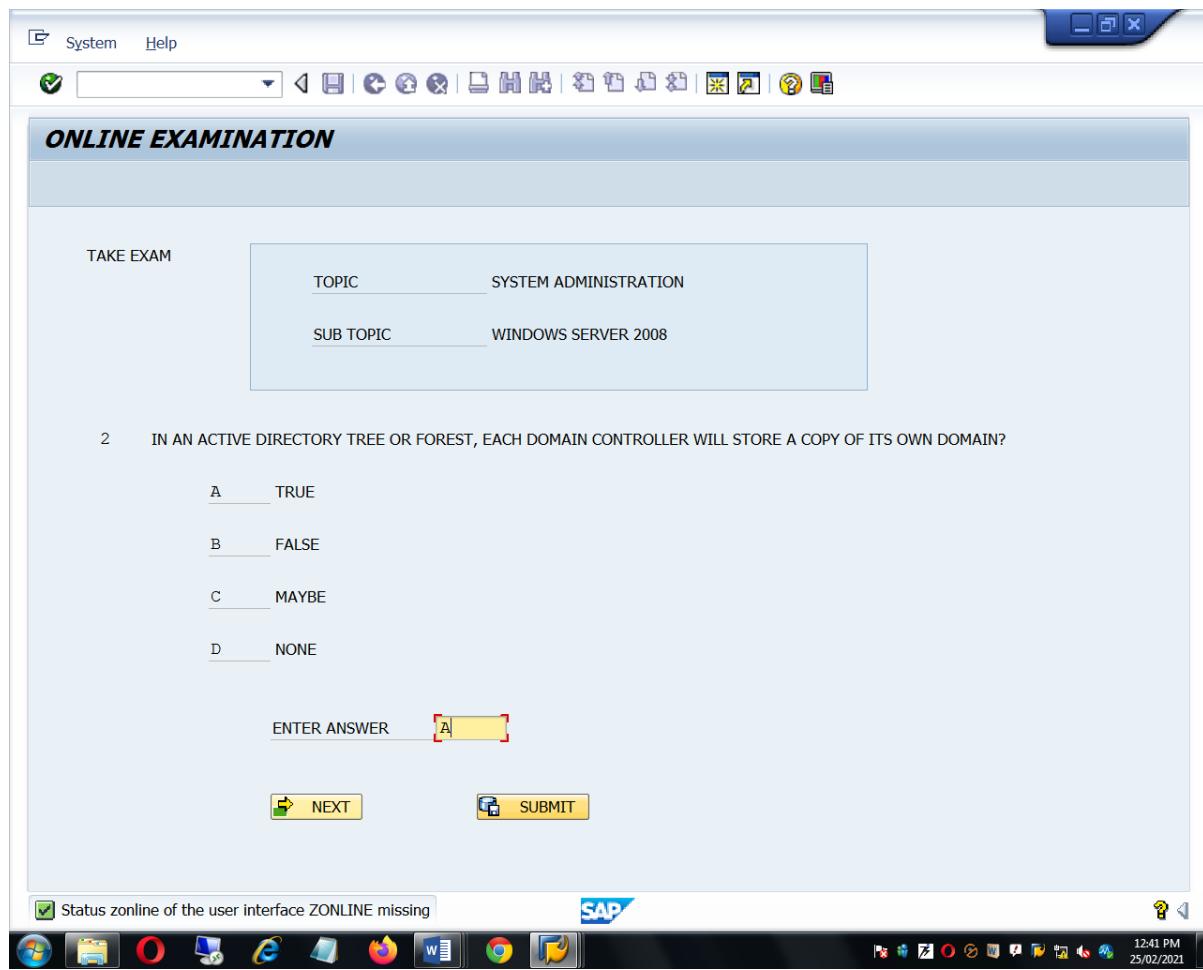
When “TAKE EXAM” is clicked the candidate can attempt the assessment in “TAKE EXAM PAGE” by entering the options in provided text box.

### 5.4.11 Take Exam Page



**Fig 26.1: Take Exam Page (1)**

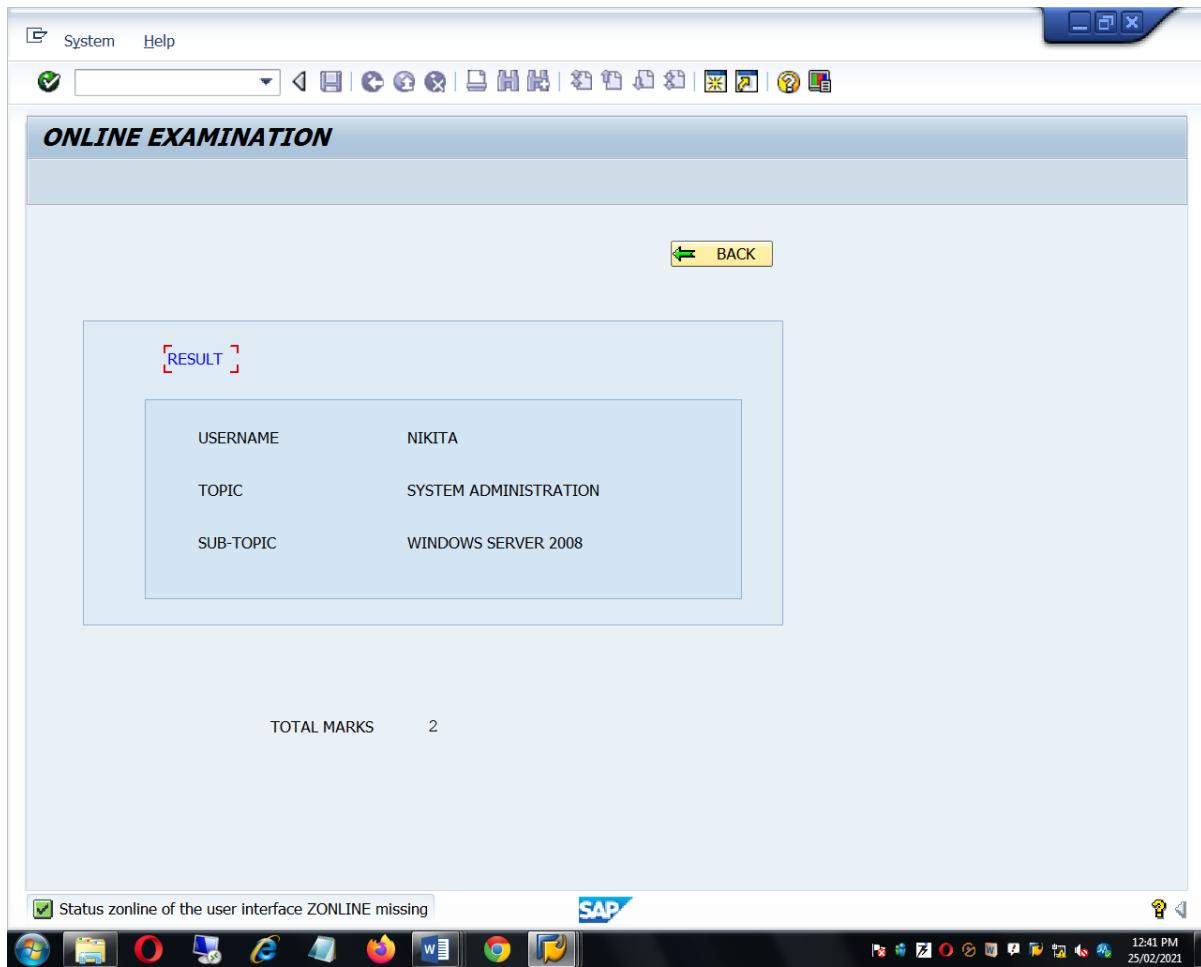
When clicked on “NEXT” the candidate’s option for particular question is saved in the result database along with the topic, sub-topic, question number and the exam ID and also redirects the candidate to the next question.



**Fig 26.2: Take Exam Page (2)**

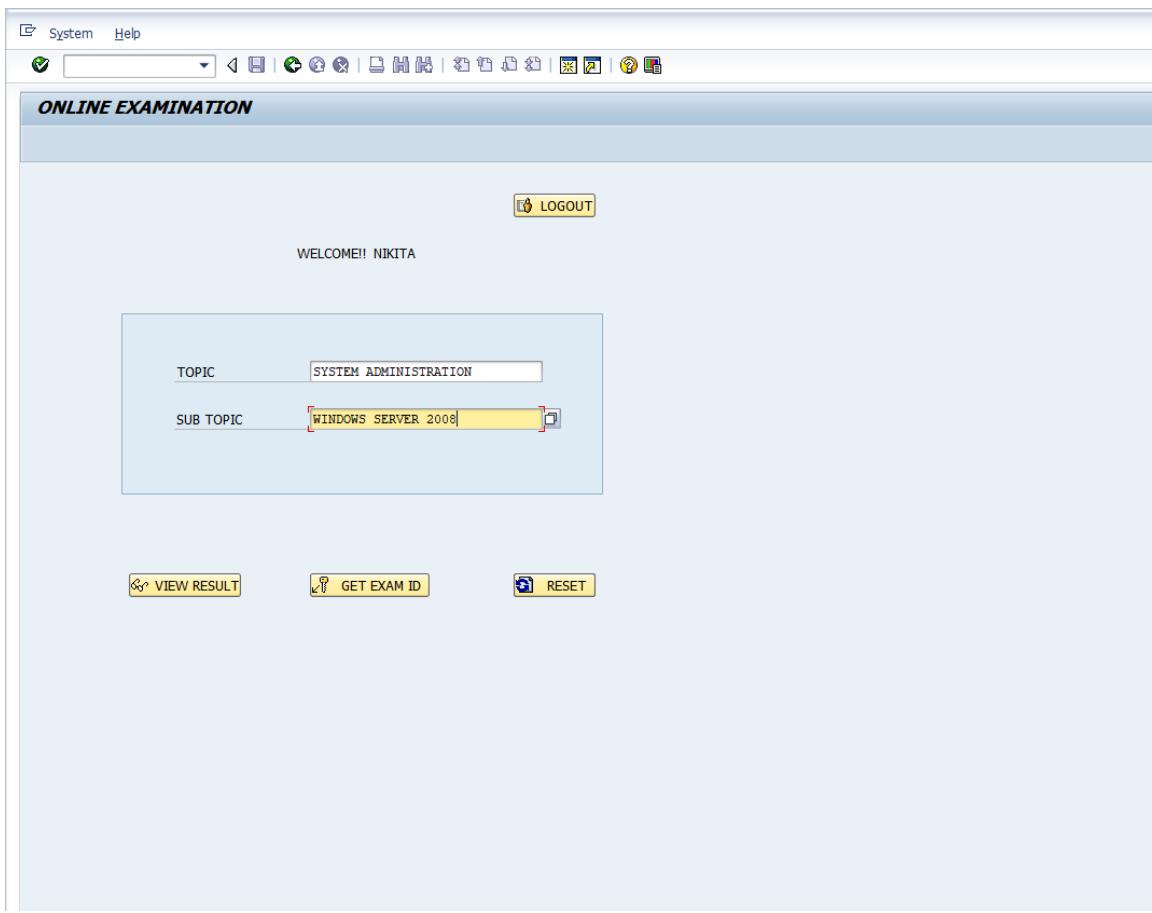
When clicked on “SUBMIT” the last question’s option is saved and the result for the assessment is calculated and displayed in the “RESULT PAGE”.

### 5.4.12 Result Page



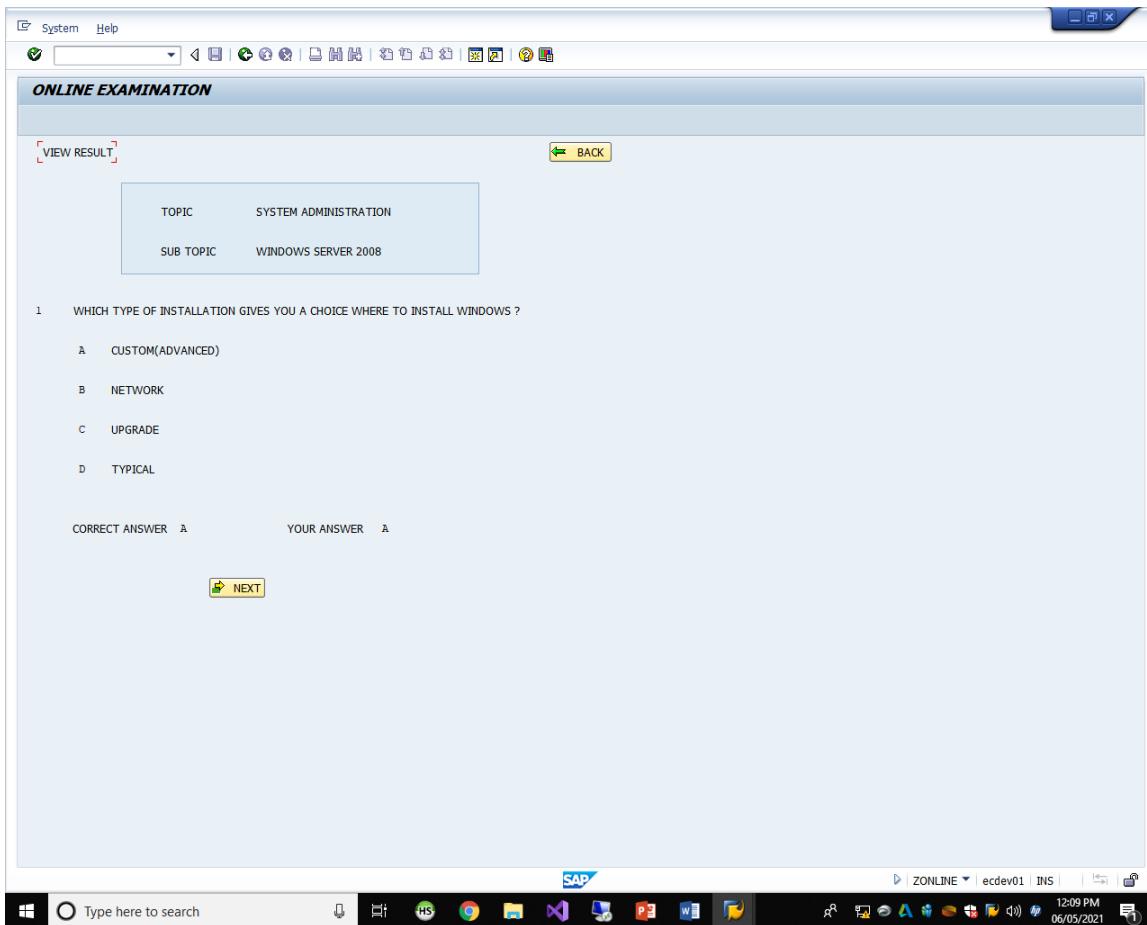
**Fig 27: Result Page**

When clicked on “BACK” the candidate is redirected to the “CANDIDATE’S HOME PAGE”.



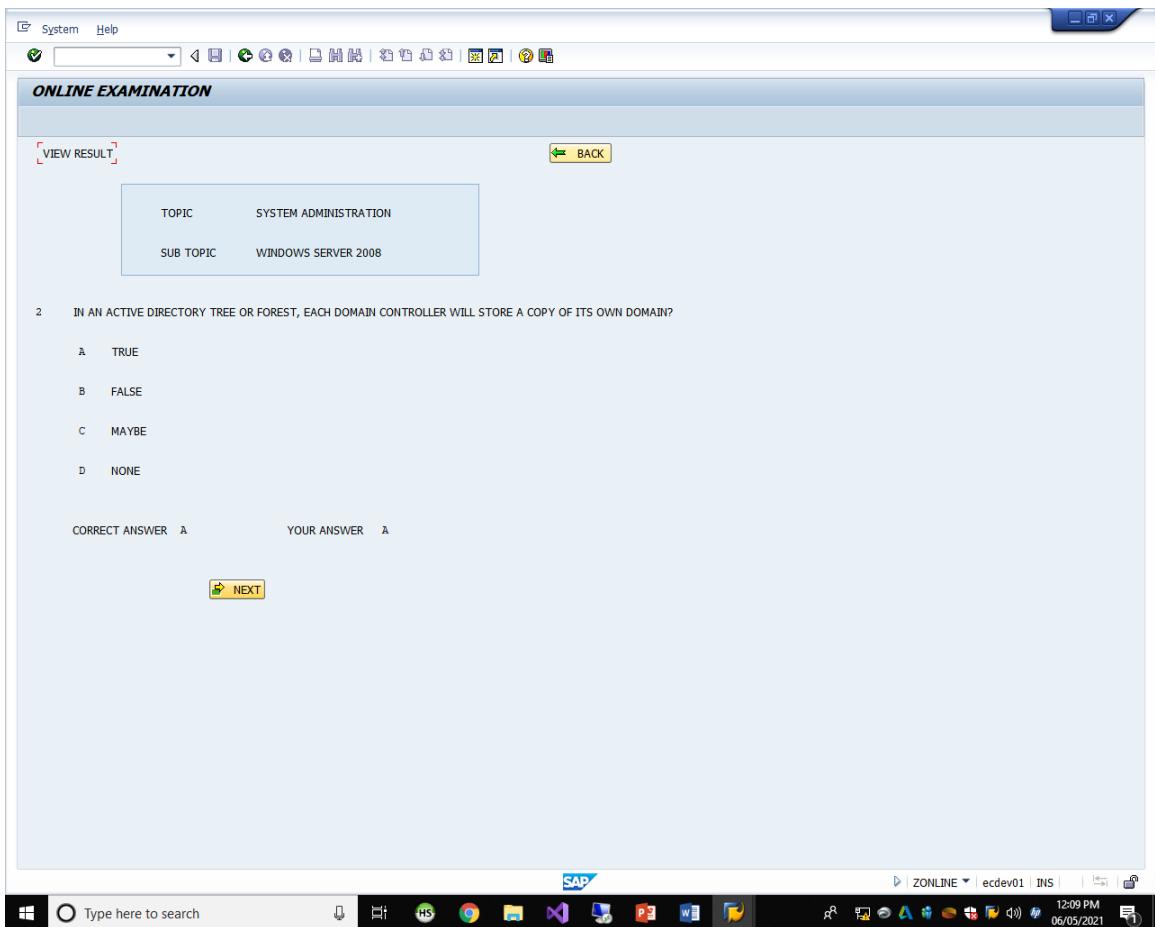
**Fig 28: View Result (button)**

### 5.4.13 View Result Page



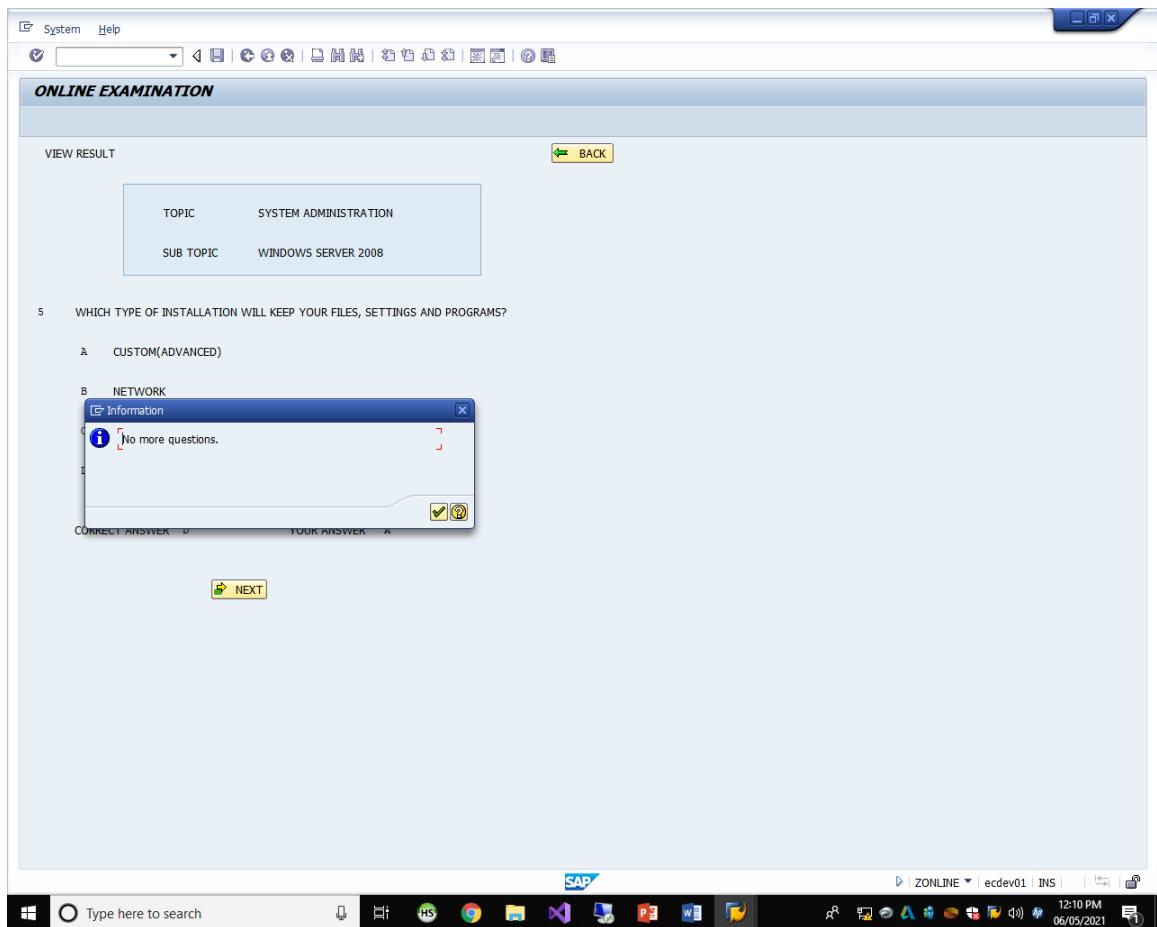
**Fig 29.1: View Result page (1)**

Click on “NEXT” to view all other questions attempted with the candidates answer and the correct answer registered in the respective topic and sub-topic in result database.



**Fig 29.2: View Result page (2)**

When you have viewed all the attempted questions of the respective topic and sub topic, on clicking “NEXT” an information message pops up saying “No more questions”, then click on “BACK” to be redirected to the “CANDIDATE’S HOME PAGE”.



**Fig 29.3: View Results Page (Information message)**

## **6. SYSTEM TESTING**

System testing is the testing of a complete and fully integrated software product. Usually, software is only one element of a larger computer-based system. Ultimately, software is interfaced with other software/hardware systems. System testing is actually a series of different tests whose sole purpose is to exercise the full computer-based system.

Unit testing focuses first on the modules in the proposed system to locate errors. This enables to detect errors in the coding and logic that are contained within that module alone. In unit testing step each module has to be checked separately.

System testing does not test the software as a whole, but rather than integration of each module in the system. The primary concern is the compatibility of individual modules.

Testing and validation are the most important steps after the implementation of the developed system. The system testing is performed to ensure that there are no errors in the implemented system. The software must be executed several times in order to find out the errors in the different modules of the system.

Validation refers to the process of using the new software for the developed system in a live environment i.e., new software inside the organization, in order to find out the errors. The software developed Testing is exercising the software to uncover errors and ensure the system meets defined requirements. Testing may be done at 4 levels:

1. Unit Level
2. Module Level
3. Integration & System
4. Regression

## **6.1 Unit Testing**

A Unit corresponds to a screen /form in the package. Unit testing focuses on verification of the corresponding class or Screen. This testing includes testing of control paths, interfaces, local data structures, logical decisions, boundary conditions, and error handling.

## **6.2 Module Level Testing**

Module Testing is done using the test cases prepared earlier. Module is defined during the time of design.

## **6.3 Integration and System Testing**

Integration testing is used to verify the combining of the software modules. Integration testing addresses the issues associated with the dual problems of verification and program construction. System testing is used to verify, whether the developed system meets the requirements.

## **6.4 Regression Testing**

Each modification in software impacts unmodified areas, which results in serious injuries to that software. So the process of re-testing for rectification of errors due to modifications is known as regression testing.

## 6.5 Test Cases

Test Case - 1	Module Name	User Login Data Input
	Prerequisites	A user with valid user name, password
	Test Description	Login id and password is entered
	Expected Behavior	Should be accepted and home page corresponding to the user of the wizard should be shown
	Test behavior	Accepted and home page is shown
	Remark	Ok

Table 1: Test Case - 1

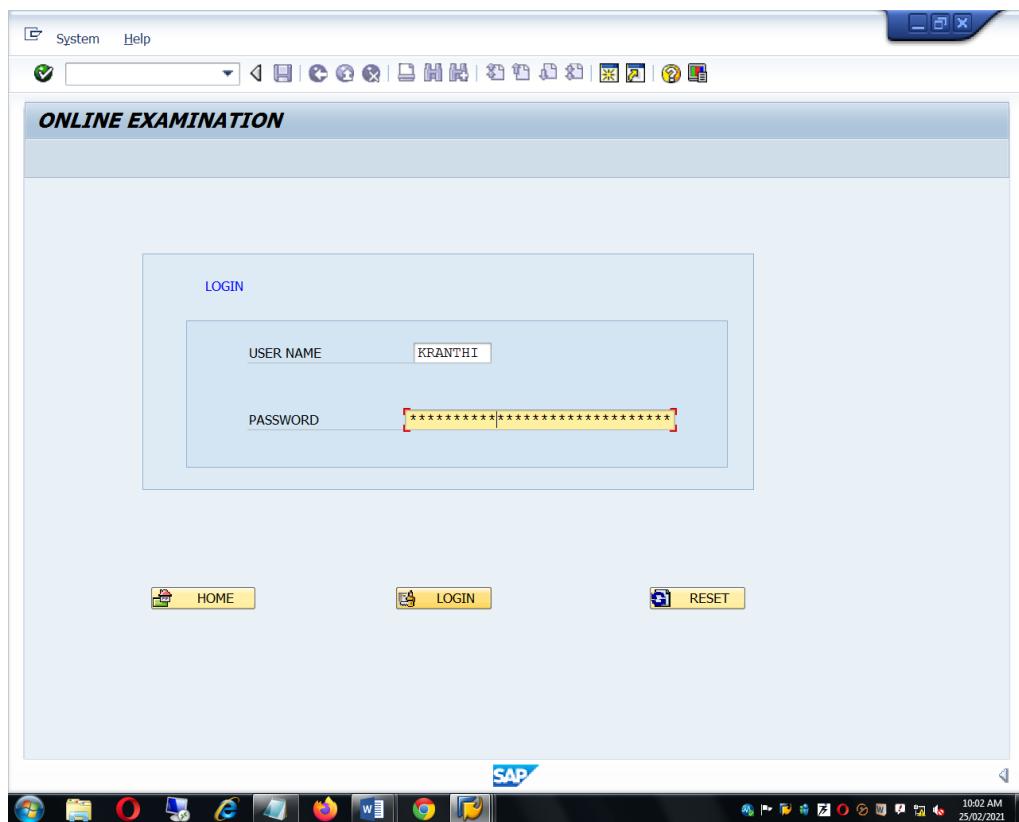
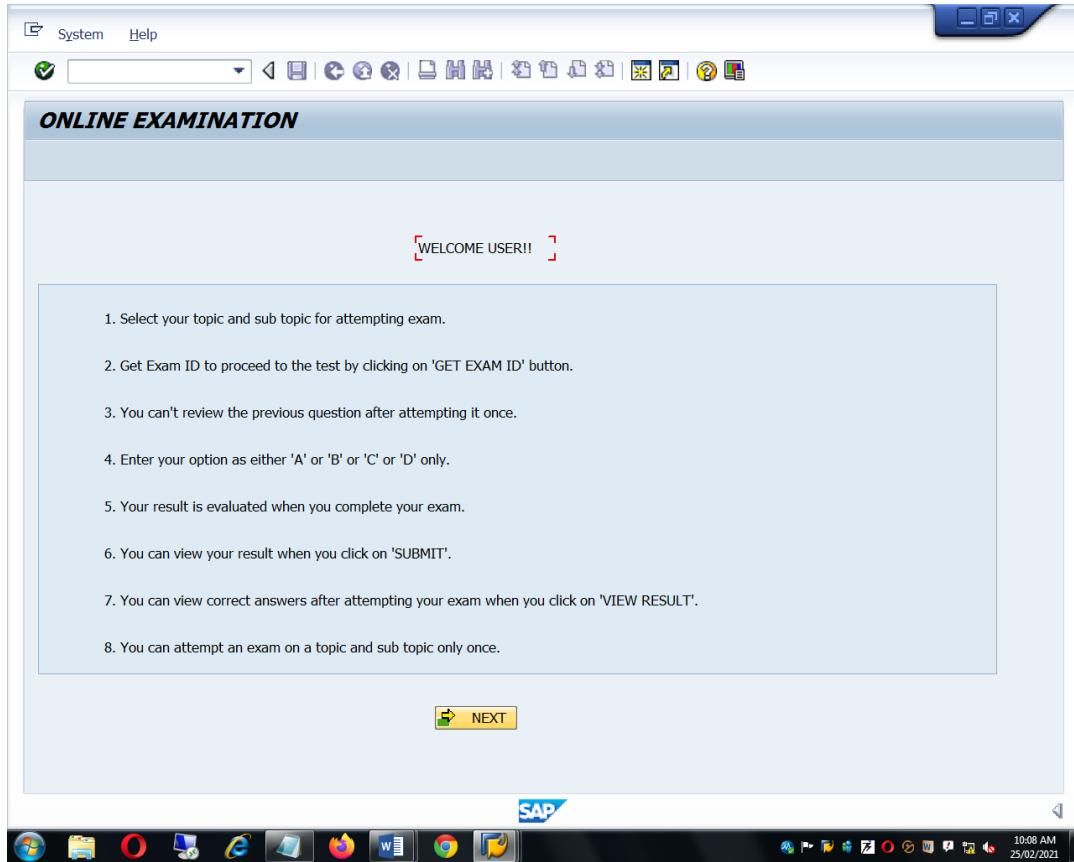


Fig 30.1: Test case – 1



**Fig 30.2: Test case - 1**

Test case - 2	Module Name	User Login Data Input
	Prerequisites	A user not existing in database (with invalid user name, password )
	Test Description	User name and password is entered
	Expected behavior	Should be rejected and error message “User does not exist” should be shown
	Test behavior	Error message is shown and user is rejected
	Remark	Ok

**Table 2: Test Case – 2**

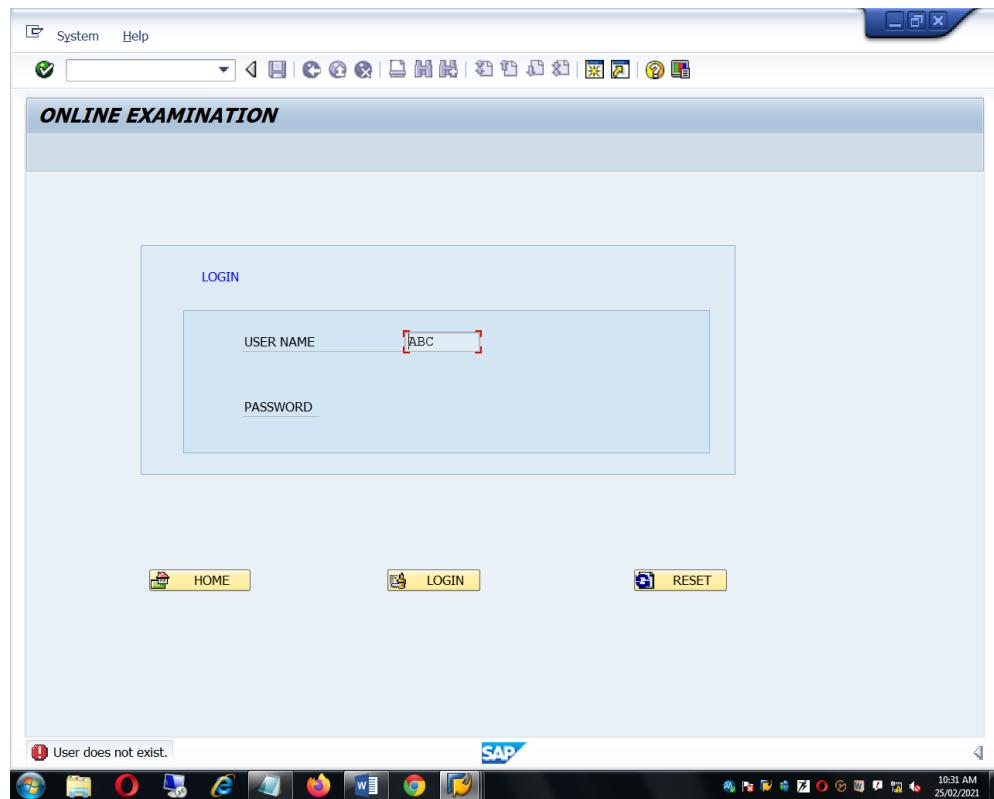


Fig 31.1: Test case - 2

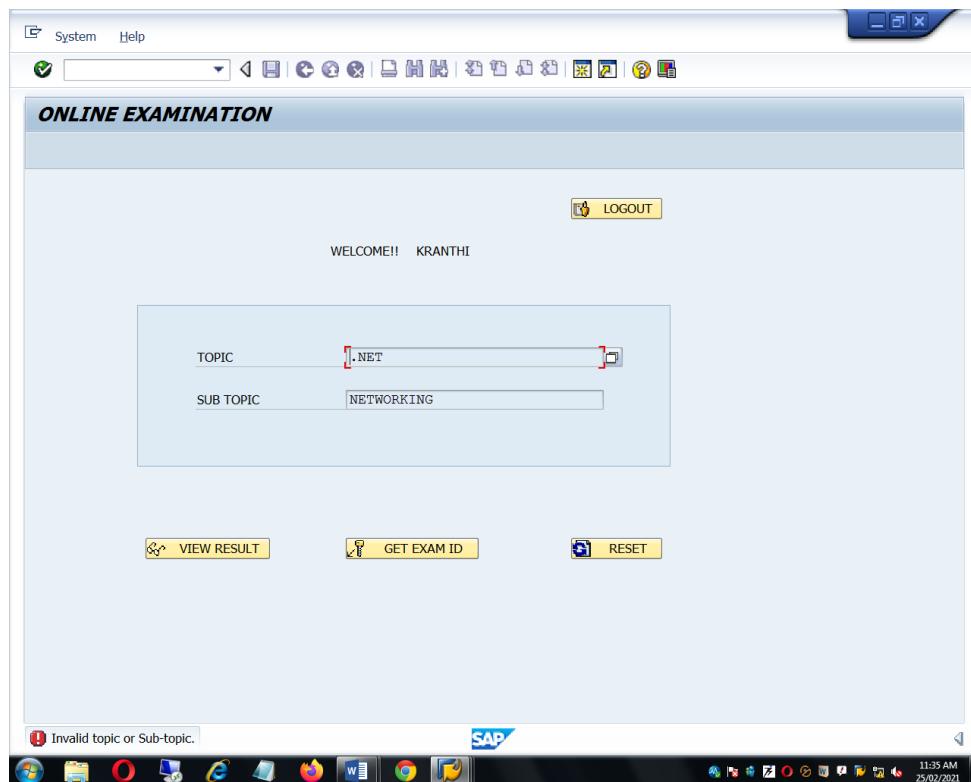
The screenshot shows the SAP Data Browser displaying the contents of the table ZONLINE\_NEWUSER. The table has four columns: char8, Date in Format YYYYMMDD, 30 Characters, and 30 Characters.

char8	Date in Format YYYYMMDD	30 Characters	30 Characters
BHARGAVI	02.11.2001	BHARGAVI	BHARGAVI@123
CHANDU	12.03.2005	CHANDU	CHANDU
ISHITHA	03.11.2001	ISHITHA	ISHITHA
KRANTHI	08.10.2001	KRANTHI	KRANTHI@123
KUMAR	12.02.2002	KUMAR	KUMAR@123
MAHEEN	03.01.2002	SHIFA MAHEEN	MAHEEN
NAVEEN	03.07.1984	NAVEEN	ECIL@123
NIKITA	16.05.2002	NIKITA	NIKITA@123
PANDU	30.05.2002	BHAVITHA	PANDU
PDRTEJA	03.10.1989	RAMYA	ECIL@123
RAMYA	12.01.2001	RAMYA	RAMYA@123
SOWJANYA	15.03.2001	SOWJANYA	SOWJU
SRAVAN	12.09.1999	SRAVAN	SRAVAN@123
VIJITHA	03.11.2001	VIJITHA	VIJITHA@123

Fig 31.2: Test case – 2

Test Case -3	Module Name	User Data Input
	Prerequisites	A user input with invalid topic and sub – topic
	Test Description	Topic and Sub - topic is entered
	Expected Behavior	Should be rejected and error message “Invalid topic or Sub-topic” should be shown
	Test behavior	Error message is shown and user is allowed to re-enter
	Remark	Ok

**Table 3: Test Case - 3**



**Fig 32.1: Test Case – 3**

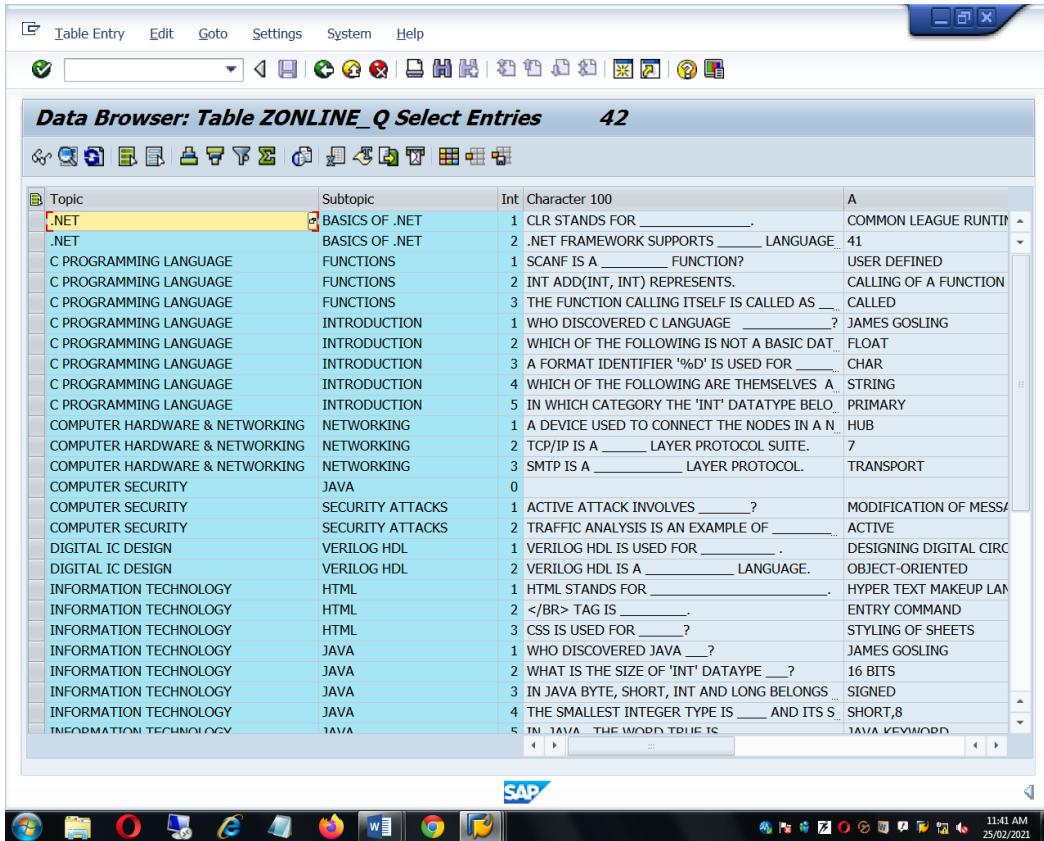
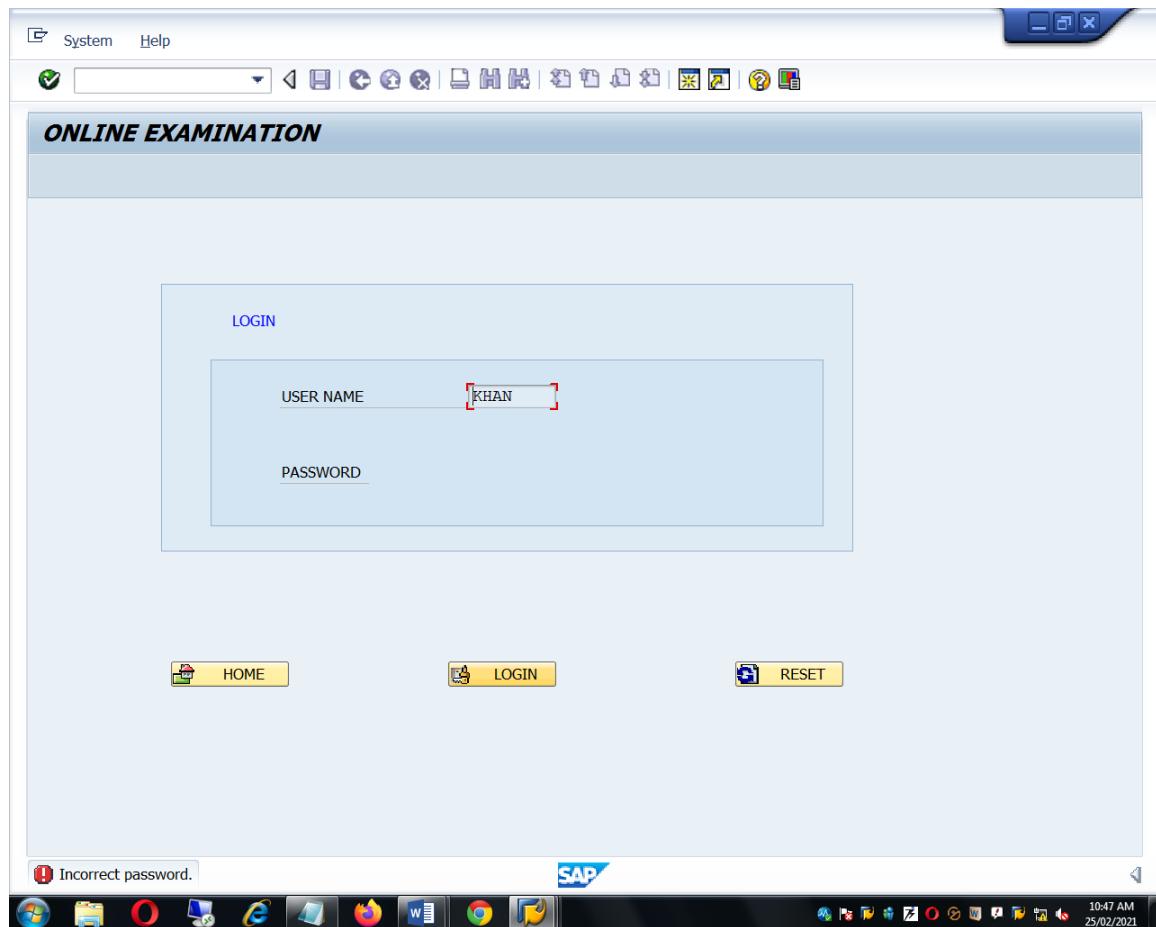


Fig 32.2: Test Case - 3

Test Case -4	Module Name	Administrator Data Input
	Prerequisites	An administrator with valid user name and incorrect password
	Test Description	Login id and password is entered
	Expected Behavior	Should be rejected and error message "Incorrect password" should be shown
	Test behavior	Error message is shown and administrator is allowed to re-enter
	Remark	Ok

Table 4: Test Case – 4



**Fig 33: Test Case - 4**

## **7. CONCLUSION**

In an ever-evolving education scenario, online exams and e-assessments are at the center of it all. Online Examination Application is an SAP based application for conducting examination through internet and intranet (within organization). It is a multiple choice questions based examination system that provides a user friendly environment for both the candidates appearing for assessment and the administrators. Organizing and running exams online not only reduces an organization's administrative burden but also saves cost and time. Online examination with its objective to make evaluation massive but simple, cost-effective and faster has replaced the pen paper-based assessment.

## **REFERENCES**

- [1] <https://www.sap.com/india/index.html>
- [2] <https://www.sapnuts.com/>
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