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| Software tools and practices | **Online university entrance examination**  compiled by  Samuael Ketema 1202835 Nathnael Chilot 1202632 Kiya Zewdu 1202173 Habtamu Fentahun 1201873 Mitike Kejela 1202503 |

**Online university entrance examination**

**Modified System description based on the feedbacks**

The system “online university entrance examination” is intended to provide an entrance exam to the students. The system digitalize all the examination process including the registration form, the examination and showing results.

Our system is designed to replace the current manual based examination system to the digitalized one. The ministry of education will be able to control and access the overall activities in the system and tasks related to the development and working of the system are controlled by system administrator. .

The students enters to the system through their name and Id number and fill their registration form. In the manual based there are defects on process of filling registry form but in the digitalized way , If the students have problem with the registration process the system will not allow them to register with invalid inputs using input validation and the school administrator also help them in errors beyond that..

Before the exam starts the student should wait the starting of the exam by logging to the application and the system will check whether the logging is correct and the student is legal. The system will make all the students that are taking the exam in national level to start and finish the exam at the same time so it will solve one of the great problem of time management during the examination. If there is any attempt to cheat the school administrator has the right to disqualify the student and this is done by simply cancel the students’ permission.

The system provides a good examination environment for students as it will make the students to do their own exam without worrying about cheating because the system will provide mechanisms for minimizing cheating by using face detection method.

It will eliminate the theft of exam questions. In the previous manual examination system the student hand writing on the registration form and the exam papers make a great problem for the exam checker machine but this system resolves it because it is free from any paper work.

In the current system it takes much time to announce the results for students but in the proposed system it will shorten the time to announce the result since the results are calculated and submitted to the database automatically when the students finish the exam and these results are accessible to the admins of the system administrator. The Ministry of education examine the overall results of the country’s students examines and decide the minimum mark to pass. When complaints are raised by students after the result has been released they will fill complain form and sends to system and the ministry of education will handle those complains.

The whole examination system is controlled by the Ministry of Education and it will give all the commands to other system administrator. They will organize the places where those servers will be planted and manage all school administrator.

**System description**

Student:

Students are the main users of the system there for the will access the system by registering using the registration form. And then take their examination. Using the system they can’t choose to what subjects will they placed for exam because this all things are once decided by ministry of education. Students can see how many questions that they left off and the remaining time to finish and commit all the question. They can also see the results when the released and submit their complains if they have doubt in the examination process and the exam results.

School administrator:

School administrators are persons and also actors for our system that are assigned for each school for the purpose managing student’s information in the given school. They are the most interactive users of the system and they perform a lot of actions in the whole process.

They check all the submitted registration form requests from students and they validate and approve if they form meet all the standards

They also manages student information this includes making corrections if errors exist in the student’s form, reset passwords if students forget their password.

They control the availability and accessibility of the system in the examination time. They have a wide and complete access to the student’s information.

Administrators:

This group contain system **Administrators** who are responsible for the development of the system and also **Ministry of Education** to manage staffs related to the education standard of the country.

These are the person that control the database and have full control access to the system.

Ministry of education prepares exams with their appropriate answers and deliver it to the system administrator.

They upload the prepared question into the database and make them available to the system. And at exam time they will administer the timing and the schedule and also the networks.

And after the examination has been takes place MOE handles students complain and give them a response.

**UML DIAGRMS FOR OUR SYSTEM**

**Use case diagram**

Image2

**Class Diagram**

Image2

The code generated based on the class diagram

From Class Student

package *class*;

/\*\*

 \* @author dell

 \* @version 1.0

 \* @created 11-May-2022 12:00:23 PM

 \*/

public class student {

    private int examDate;

    private boolean haveComplain;

    private int registerDate;

    private int studId;

    private char studName;

    private int timeAllowed;

    public admin m\_admin;

    public student(){

    }

    public void finalize() throws Throwable {

    }

    public char fillRegisterForm(){

        return 0;

    }

    public void login(){

    }

    public void seeResults(){

    }

    public void seeSchedule(){

    }

    public void seeTimeAllowed(){

    }

    public char submitComplain(){

        return 0;

    }

    public boolean tookExam(){

        return false;

    }

}

**Class School admin**

package *class*;

/\*\*

 \* @author lenevo

 \* @version 1.0

 \* @created 06-May-2022 09:07:02 PM

 \*/

public class schoolAdmin {

    private int password;

    private char schoolAdminId;

    private char schoolAdminName;

    private char schoolName;

    public Class2 m\_Class2;

    public admin m\_admin;

    public schoolAdmin(){

    }

    public void finalize() throws Throwable {

    }

    public void approveRegiterForm(){

    }

    public void checkRegiterForm(){

    }

    public char resetPasswords(){

        return 0;

    }

    public void verifyLogin(){

    }

}

**Class result**

package *class*;

/\*\*

 \* @author hp

 \* @version 1.0

 \* @created 11-May-2022 11:34:27 PM

 \*/

public class results {

    private char distnict;

    private int mark;

    private int studid;

    public Class3 m\_Class3;

    public student m\_student;

    public results(){

    }

    public void finalize() throws Throwable {

    }

}

**Class Admin**

package *class*;

/\*\*

 \* @author dell

 \* @version 1.0

 \* @created 11-May-2022 12:00:13 PM

 \*/

public class admin {

    private int adminId;

    private char adminName;

    public admin(){

    }

    public void finalize() throws Throwable {

    }

    public void verifyLogin(){

    }

}

**Class System administrator**

package *class*;

/\*\*

 \* @author hp

 \* @version 1.0

 \* @created 12-May-2022 03:15:25 PM

 \*/

public class systemAdmin extends admin {

    private char email;

    private boolean failure;

    public systemAdmin(){

    }

    public void finalize() throws Throwable {

        super.finalize();

    }

    public void checkSystem(){

    }

    public char sendInvite(){

        return 0;

    }

}

**Class Ministry of Education**

package *class*;

/\*\*

 \* @author hp

 \* @version 1.0

 \* @created 10-May-2022 01:20:08 PM

 \*/

public class MOE extends admin {

    private char answers;

    private char complains;

    private int finishTime;

    private char questions;

    private int results;

    private int startTime;

    public MOE(){

    }

    public void finalize() throws Throwable {

        super.finalize();

    }

    public void checkComplains(){

    }

    public char responseToComplains(){

        return 0;

    }

    public char scheduleExams(){

        return 0;

    }

    public void setFinishTime(){

    }

    public void setStartTime(){

    }

    public char updateSchedules(){

        return 0;

    }

    public char uploadExams(){

        return 0;

    }

}

**Activity Diagram**

Image2

**State Chart**

Image2

**Sequence Diagram**

Image2