TEST REPORT

FOR

STUDENT REGISTRATION SYSTEM

Submitted To-

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1. Introduction

1.1 Purpose

This document explains the various activities performed as part of testing of "Student Registration System".

1.2 Application Overview-

Student Registration System aims to make the offline handling of vast amounts of data maintained by educational institutions simpler. This software provides handy options for the addition of records with plenty of fields, like the enrolment number, faculty number, name, current year, branch, backlog status, telephone number and e-mail id of the students.

2. Test Summary

Project Name: Student Registration System

2.1 Unit Testing

Test Date: 15-April-2016
Test Results: All functions working correctly

2.2 Integration Testing

Test Date: 16-April-2016
Test Results: All functions coordinating with each other correctly

2.3 Interface Testing

Test Date: 17-April-2016
Test Results: User-friendly, properly functioning interface

2.4 Security Testing

Test Date: 17-April-2016
Test Results: It provides access of full information to the user only on entering a valid username and password. But there is no arrangement for the security of data files.

2.5 Recovery Testing

Test Date: 18-April-2016
Test Results: No amends for recovery have been made

2.6 Performance Testing

Test Date: 18-April-2016
Test Results: Optimum performance is achieved

2.7 Acceptance Testing

Test Date: 19-April-2016
Test Results: The software meets all of user's basic requirements

3. Test Assessment

All the tests stated in the test plan have been thoroughly and properly conducted.

4. Test Results

Other than negligible bugs, the software works satisfactorily. It passes majority test cases. The detailed description of the test results is as follows-

4.1 Unit Testing

The results of unit testing activities performed during testing of the software are as follows:

1. login function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	(Student account) Username-GD5322 Password-********(PASSWORD)	Access granted	Pass	-	-	-
	(Faculty account) Username-M_BEG Password-******(MBCIVI)	Access granted	Pass	-	-	-
2	(Student account) Username-ZS7782 Password-********(PASSWORD)	Access denied	Pass	-	-	-
	(Faculty Account) Username-M_jmi Password-*******(MBCIVI)	Access denied	Pass	-	-	-

3	(Student Account)- Username-GD5322 Password-********* *(BASSWORDF)	Access denied	Pass	-	-	-
	(Faculty Account)- Username-M_BEG Password-*******(TEACHER)	Access denied	Pass	-	-	-
4	(Student Account)- Username-AB1234 Password-******(ABCDEF)	Access denied	Pass	-	-	-
	(Faculty Account)- Username-M_BEGINNING Password-*******(TEACHER)	Access denied	Pass	-	-	-
5	(Student Account)- Username-AB12345677 8910205206 52 Password-****…(aaa	Access denied	Pass	-	-	-

	aaaaaaaaaa aaaaaaaaaa abbbbbbbb bbbbbccccc ccccccccccc ccddddddd ddddddddd ddeeeeeeee eeeeeeeeee fffffffffffff fffffggggg gggggggggg hhhhhhhhh hhhhiiiiiiii iaaaaaaaaa)					
	(Faculty Account)- Username- M_BEGIN NINGDON EENDWIL LBESOON ERORLAT ERWAITY OUWILLD OITCOMP LETEIT Password- ****…(TE ACHEROF ZAKIRHU SAINCOL LEGEOFE NGINEERI NGANDT ECHNOL OGYCIVI LDEPART MENTALI	Access denied	Pass	-	-	-

	GARHMUSLIMUNIVERSITY ALIGARH TEACHES HYDRAULICSFLUIDMECHANICSTEACHINGHERESINCE1998HEISAPROFESSORHASDONEPHD)					
6	(Student Account)- Username- gd5322 Password- ********(PASSWORD)	Access denied	Pass	-	-	-
	(Faculty Account)- Username- m_beg Password- *******(MBCIVI)	Access denied	Pass	-	-	-

2. register function

Test Case	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments

ID						
1	Faculty Number-12PEB098 Branch-Chemical	Registration discontinued here	Pass	-	-	-
2	(The user enters all details but no courses)	Registration Unsuccessful	Pass	-	-	-
3	Faculty Number-123ABC456789	Registration Successful	Fail	Major	Length of faculty number exceeds the set limit	Entering a faculty number greater than the defined length causes ArrayOutOfBoundsException
	Faculty Number-14peb098	Registration Unsuccessful	Pass	-	-	-
	Faculty Number-20PEB657	Registration Successful	Fail	Major	This is a non-existent faculty number in real life	There is no checking mechanism to determine whether the entered faculty number exists in real life or not.
4	SELECT YOUR COURSES- 1.AC111 2.EE111 3.AC194	Registration Unsuccessful	Pass	-	-	-

	4.CO191 5.ME193 6.AP111 7.CE111 8.ME111 9.AP194 10.ME194 11.EN101 12.AM111 13.AM112 14.ME101 0. END 1 2 3 4 5 6 7 8 9 10 11 12 13 14 0					
5	SELECT YOUR COURSES- 1.AC111 2.EE111 3.AC194 4.CO191 5.ME193 6.AP111 7.CE111	Registration Successful	Fail	Major Defect	Student should be allowed to register for a particular course only once in a semester	

	8.ME111 9.AP194 10.ME194 11.EN101 12.AM111 13.AM112 14.ME101 0. END 1 1 1 1 1 1 1 0					
6	First Name- AAAAABBBB BBCCCCCCDD DDDDDEEEEE Middle Name- AAAAABBBB BBCCCCCCDD DDDDDEEEEE Last Name- AAAAABBBB BBCCCCCCDD DDDDDEEEEE	Registration Successful but record written on file is erroneous	Fail	Moderate (because usually name of a person does not consist of more than 15 characters)	When more than 15 characters are entered, data is written in a haphazard format on the file.	This defect will eventually cause error in all other functions
7	Year- -7	Registration discontinued	Pass	-	-	-
	Year-34	Registration discontinued	Pass	-	-	-

3. studentProfile function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	(First the record of a student is written on STUDENT file using register function and then the record of the same student is viewed using studentProfile function)	The correct record is displayed on the console screen	Pass	-	-	-
2	Password-ACRKORACRKORACRKORACRKOKACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKOR	(Program Crashes)	Fail	Major	The program will crash in case the user enters a password of more than 100 characters	Although the software provides instructions to enter password of not more than 100 characters, but it does not provide any mechanism to handle the array out of bound exception which occurs on entering a longer password

	Email-ACRKORACRKORACRKORACRKOKACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKORACRKOR	(Program Crashes)	Fail	Major	The program will crash in case the user enters an email id of more than 100 characters	Although the software provides instructions to enter an email id of not more than 100 characters, but it does not provide any mechanism to handle the array out of bound exception which occurs on entering a longer email id
	Phone No.-12345678901234567890	(Program Crashes)	Fail	Major	The program will crash in case the user enters a phone number of more than 10 digits	Although practically no phone number is of more than 10 digits, but it does not provide any mechanism to handle the array out of bound exception which

						occurs on entering a longer phone number
3	Password-NEW_PASSWORD	Modification successful and modification reflected in ENROL file	Pass	-	-	-
	Email-mynewemailid@gmail.com	Modification successful and modification reflected in STUDENT file	Pass	-	-	-
	Phone Number-9876342108	Modification successful and modification reflected in STUDENT file	Pass	-	-	-

4. yearwise_students function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	SELECT YOUR CHOICE-. 1.FIRST YEAR 2.SECOND YEAR 3.THIRD YEAR 4.FOURTH YEAR 55	Error message is displayed indicating invalid choice	Pass	-	-	-
2	SELECT YOUR CHOICE-. 1.FIRST YEAR 2.SECOND YEAR 3.THIRD YEAR 4.FOURTH YEAR 1	List of first year students is displayed on console	Pass	-	-	-
3	SELECT YOUR CHOICE-. 1.FIRST YEAR 2.SECOND YEAR 3.THIRD YEAR 4.FOURT	List of first year students is displayed on console	Fail	Moderate	There is no year in floating points, for example 1.1, 3.4 etc.	The list of students is displayed because of implicit type conversion the entered floating point year is

	H YEAR 1.1					converted into integer by slicing its decimal part. This integer is then compared in the file and matching data is displayed.
4	SELECT YOUR CHOICE-. 1.FIRST YEAR 2.SECOND YEAR 3.THIRD YEAR 4.FOURTH YEAR 31.1	Error message is displayed on console	Pass	-	-	Although type conversion occurs here as well but the integer resulting after conversion is also invalid, hence nothing is displayed.

5. departmentwise_students function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	SELECT YOUR CHOICE-. 1.COMPUTER 2.CIVIL 55	Error message is displayed indicating invalid choice	Pass	-	-	-
2	SELECT YOUR CHOICE-. 1.COMPUTER 2.CIVIL 1	List of computer engineering students is displayed on console	Pass	-	-	-
3	SELECT YOUR CHOICE-. 1.COMPUTER 2.CIVIL 1.1	List of computer engineering students is displayed on console	Fail	Moderate	There is no choice in floating points, for example 1.1, 3.4 etc.	The list of students is displayed because of implicit type conversion the entered floating point choice is converted into integer by slicing its decimal part. This integer is then compared in the file and matching data is

						displayed.
4	SELECT YOUR CHOICE-. 1.COMPUTER 2. CIVIL 31.1	Error message is displayed on console	Pass	-	-	Although type conversion occurs here as well but the integer resulting after conversion is also invalid, hence nothing is displayed.

6. coursewise_students function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	ENTER THE COURSE WHOSE LIST OF STUDENTS YOU WISH TO VIEW- AC123679	Total number of students registered in AC123679 are- 0	Fail	Minor	An error indicating invalid course no should be displayed	
2	ENTER THE COURSE WHOSE LIST OF STUDENTS YOU WISH TO VIEW- AC194	List of students registered in AC194 is displayed	Pass	-	-	-

7. all_backlog_students function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	-	List of all students having backlog is displayed	Pass	-	-	Displayed data is consistent with the records in STUDENT file.

8. coursewise_backlog_students function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	ENTER THE COURSE WHOSE LIST OF BACKLOG STUDENTS YOU WISH TO VIEW- AC123679	Total number of students having backlog in AC123679 are- 0	Fail	Minor	An error indicating Invalid course no should be displayed	-
2	ENTER THE COURSE WHOSE LIST OF BACKLOG STUDENTS YOU WISH TO VIEW- AC194	List of students having backlog in AC194 is displayed	Pass	-	-	-

9. suggestions function

Test Case ID	Input Data	Output	Pass/Fail	Severity of Defect	Summary of Defect	Comments
1	Enter a suggestion- *(A suggestion within the set limit is entered)*	The suggestion is written on the SUGGEST file	Pass	-	-	-
2	Enter a suggestion- *(A suggestion exceeding the set limit is entered)*	The program crashes	Fail	Minor	Array Out of Bounds Exception occurs on entering more than the set limit of character for a suggestion.	-

4.2 Integration Testing

All the nine cases listed in section 5.3 of test plan are tested and no error is found in any of them. The linking between the functions is logically correct.

4.3 Interface Testing

1. Appropriate error message is displayed at appropriate situations.
2. The font is readable.
3. The text is properly aligned.
4. The user might get frustrated due to large number of menus.
5. The spellings used are correct.
6. Interface linking is appropriate because correct interface appears according to the choice selected.
7. More confirmation messages should be displayed.
8. Standard field labels have been used

4.4 Security Testing

The results are as follows-

- Password is in encrypted format
- System does not allow access to invalid users.

4.5 Recovery Testing

There is no way to recover the data if data files are deleted either accidentally or intentionally.

4.6 Performance Testing

The results are as follows-

- Soak Testing-
  - The login function of the software works haphazardly in case the software is used for a long time.
  - The modification part of the studentProfile function is a little slow.
- Configuration Testing-The software was tested on Windows 8.1 and 10 and it worked correctly on them.

4.7 Acceptance Testing

The software meets all the requirements as stated by the user and all the functions listed in the SRS have been implemented in the code.

6. Variances

As per the test plan, the software was supposed to be tested on WinXp and Windows 7 as well. However due to unavailability of these two platforms, this testing could not occur.

7. Test Instances

Some defects encountered are as follows-

- The whole software is choice driven i.e. integers corresponding to desired options in the menu are supposed to be entered. If floating point numbers are entered in place of integers, anomalous results are obtained depending upon the whole number part of the entered floating point number.
- The software crashes on exceeding the set limit for any character array.
- There is no mechanism to check the authenticity of the faculty number, year, semester, phone number etc.

7.1 Resolved Test Incidents

Exception handling blocks should be included in the code to deal with unexpected situations

7.2 Unresolved Test Incidents

No possible solution could be arrived at for dealing with a situation of the user entering floating point choices.

8. Recommendations

Following are some recommendations for the betterment of the software-

- More instructions or help notes should be provided at various phases to guide the user.
- The interface must be made more interesting so as to avoid the user from getting frustrated.
- The files ENROL, STUDENT, FACULTY and SUGGEST could be made more secure by making them password protected.
- Some amends should be made for the recovery of data.
- Validity of various entered details like faculty number, year, semester, phone number, email id etc. of the registered student should be checked

APPENDIX A: References

The following table summarizes the documents referenced in this document:

S No.	Document Name and Version	Description
1.	SRS (Version 1.2)	Software Requirements Specifications document for "Student Registration System"
2.	Test Plan	Document stating the test plan and schedule to be followed for the testing of "Student Registration System" software.