

For 100% Result Oriented IGNOU Coaching and Project Training

Call CPD: 011-65164822, 08860352748

BCS-051 (INTRODUCTION TO SOFTWARE ENGINEERING)

Ans: 1

1. INTRODUCTION

- i. **Purpose:** The purpose of this document is to describe the SRS for Student Admission System. it also describes the interface for the system
- ii. **Scope:** This document is meant to be used by the developers and will be basis for the final delivered system.
- iii. **Definition, acronyms abbreviation:**

Abbreviation

Most of the central systems are referred to by an abbreviation so this section lists the abbreviation used for the system (sometimes there are more than one).

Brief Description

A very short description of the system, normally listing any sub-systems included where appropriate.

Modes of Access

Some systems can be accessed in a number of ways (e.g. via the Web and by BI/Query). This section lists the different ways in which the system can be accessed. these can include:

Web- via a web browser such as Internet Explorer

Telnet- An older style of interface where a telnet session is run on the local machine connecting to one of the central computers. once there a program is started which displays the system via a form-based interface.

GUI- this is normally an application which will run on your local machine but access the central data. UI stands for graphical user interface and refers to an interface allowing the user to use a mouse for example to move to a field etc.

BI/Query- This is a tool which is run on the local machine and allows the user to extract data from the central systems. It does not allow data to be updated and added to the central systems.

Number of Users

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The numbers of uses quoted refer to the approximate number of people

(iv) **References: To be used whenever necessary**

2. GENERAL DESCRIPTION

2.1 Product function overview: Online Education System aims to integrate the various modes of education. It attempts to combine the features of regular classroom education, correspondence and distance learning education and at the same time add a few new features to come up with an impeccable education system. One of the main advantages of such a system is that it can reach people from all over the world. This creates a great environment where people from different countries and cultures can interact with each other and share thoughts; ideas and most importantly promote learning.

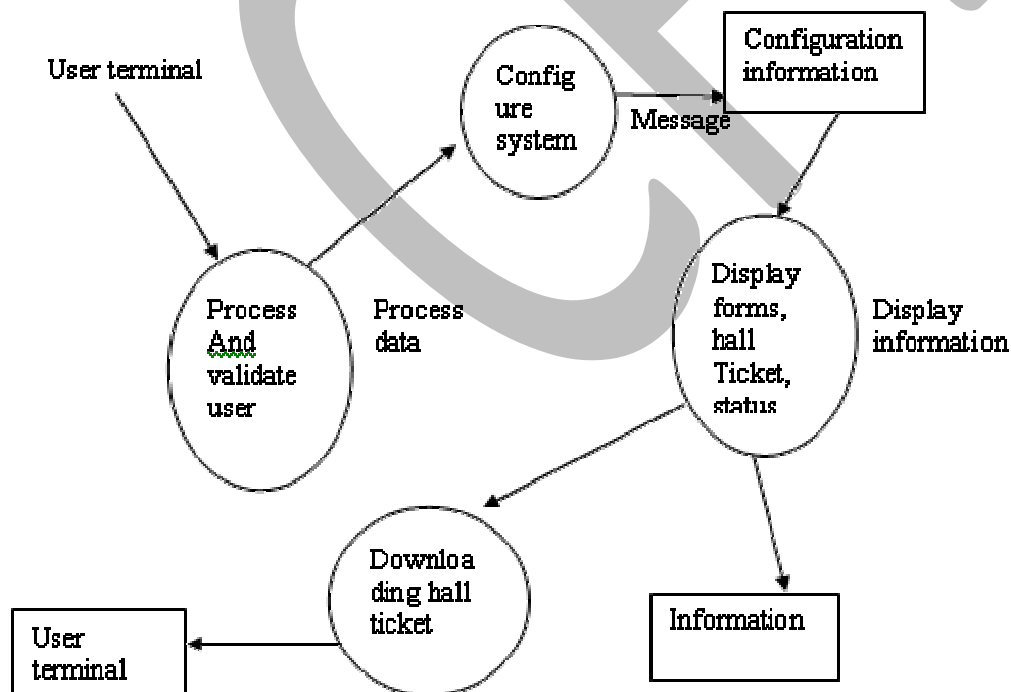
2.2 User characteristics: The user of the system will be staff of the university and the students. Both these group are familiar with the operation of computers.

2.3 General Constraints: The system should run on a variety of operating system and networking environment.

3. INPUT AND OUTPUT

3.1 output in various forms/report. ◊ processing ◊ Data flow Input from student/admin

3.2 Data flow diagram:



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FIG: DFD for Registration Module

4. FUNCTIONAL REQUIREMENT

4.1 FUNCTION PARTITIONING

- By various examination and courses.
- By nature of input data.

4.2 FUNCTION DESCRIPTION

- Processing narratives
- Restrictions and limitations
- Performance requirement
- Design constraint
- Supporting diagram

4.3 CONTROL REQUIREMENT

- Control specification
- Design limitations

5. BEHAVIOURAL REQUIREMENTS

- System states
- Event and action including student completing necessary forms and downloading of hall ticket

6. VALIDATION CRITERIAN

- Performance bounds
- Various tests- Particularly applicable with on-line and real time software.
- Expected software response.
- Special considerations as applicable to be online system.
- Annexure about university's history, courses etc

ANS-2

Test Use Case Name-1: Test case for set curriculum

Date:

04-06-2013

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| | |
|----------------------------|---|
| Id: | 1.0 |
| Test Use Case Name: | Test case for set curriculum |
| System: | Registration System |
| Sub-System: | Set Curriculum |
| Use Case: | Set Curriculum |
| Level: | System level testing |
| Tester: | Mr. A |
| Condition to Test | Valid input in forms and output |
| Expected Results | System will store the course information in appropriate format. |
| Actual Results | System will store the course information in appropriate format. |

Steps:

1. Registrar requests the course list from the academic
2. System will retrieve the list if the registrar has logged in
3. Registrar will enter the courses' information.
4. System will store the information in appropriate format.

Data sets:

| Course Code | Course Name | Credit Hours |
|-------------|-------------|--------------|
|-------------|-------------|--------------|

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| | | |
|--------|---------------------------|----|
| CS2233 | Introduction to Computing | 03 |
| CS2234 | Software Engineering | 03 |
| CS1233 | Computational Biology | 03 |

Test Result:

a) - Pass b)- Fail (✓)

Summary of Testing:

Use case begins Different inputs of course information i.e. course code, course name and credit hours were entered in the list of courses to set the curriculum.

Test Case Summary:

Course information i.e. course code, course name and credit hours entered in the list of courses to set the curriculum.

Test Use Case Name-2: Test case for Manage Course offering

Condition to Test

Valid input in forms and output

Expected Results

System will ensure the constraints are implemented

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Actual Results

System will ensure the constraints are implemented.

Date: 04-06-2013

Id: 1.1

Test Use Case Name: Test case for Manage Course offering

System: Registration System

Sub-System: Manage Course offering

Use Case: Manage Course offering

Level: System level testing

Tester: Mr.A

Step:

1. Registrar will generate list of courses available to students which university is offering in the current semester.
2. System will generate a table for the courses which will be available to the students.
3. Registrar will set constraints for which courses students can select.
4. System will ensure the constraints are implemented

Data sets:

| Semester | Student Id | Course Code | Course Name | Credit Hours |
|----------|------------|-------------|-------------|--------------|
|----------|------------|-------------|-------------|--------------|

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| | | | | |
|----|-----------|--------|--------------------|----|
| 08 | BI-073012 | CS2223 | Data Structure | 03 |
| 07 | BC073028 | CS2233 | System Programming | 03 |

Test Result:

a) - Pass b)- Fail (✓)

Summary of Testing:

The test use case “Course offering” starts when Registrar uses the curriculum information to allocate courses which will be available to students in current semester.

Test Case Summary:

| | |
|----------------------------|---------------------------------------|
| Date: | 04-06-2013 |
| Id: | 1.2 |
| Test Use Case Name: | Test case Manage Student Registration |
| System: | Registration System |
| Sub-System: | Manage Student Registration |
| Use Case: | Manage Student Registration |
| Level: | System level testing |
| Tester: | Mr.A |

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Use test case begins when Registrar set up course offering and uses curriculum information to allocate courses to students for a particular semester.

Test Use Case Name-3: Test case Manage Student Registration

Condition to Test

Valid input in forms and output

Expected Results

System will store the course information in appropriate format.

Actual Results

System will store the course information in appropriate format.

Step:

1. Registrar will enter the student's information.
2. System will store the information in appropriate format.
3. Registrar will inform the accounts office to calculate & collect the student's fees
4. The system forwards student information to the accounts office.

Data sets:

| Student Name | Stuent Id | Course Code | Course Name | Credit Hours |
|---------------|-----------|-------------|--------------------------|--------------|
| Aamir Shahzad | BI-073012 | CS2233 | Intro. Bioinformatics | 03 |
| Usman Irshad | Bi081003 | CS1224 | Computation Biology | 03 |

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Test Result:

a) - Pass b)- Fail (✓)

Summary of Testing:

The test use case “Student Registration” starts when registrar enters a student’s data & records him in the university database as a registered student.

Test Case Summary:

Use test case begins when registrar enters student information i.e. Name, Id, Course Code, Course Name, Credit Hours.

Test Use Case Name-4: Test case Manage Academic Records

| | |
|----------------------------|---------------------------------------|
| Date: | 04-06-2013 |
| Id: | 1.3 |
| Test Use Case Name: | Test case for Manage Academic Records |
| System: | Registration System |
| Sub-System: | Manage Academic Records |
| Use Case: | Manage Academic Records |
| Level: | System level testing |

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| | |
|--------------------------|-------------------------------------|
| Tester: | Mr.A |
| Condition to Test | Valid input in forms and output |
| Expected Results | System will generate the transcript |
| Actual Results | System will generate the transcript |

Step:

1. Registrar will enter the grades
2. System will generate the transcript

Data sets:

| Course Code | Course Name | Student Name | Student ID | Grades |
|-------------|--------------------|---------------|------------|--------|
| BI2233 | System Programming | Aamir Shahzad | BI-073012 | A |
| CS2234 | Data Structure | Usman Irshad | BI-081003 | F |

Test Result:

a) - Pass b)- Fail (✓)

Summary of Testing:

The test use case “Manage Academic Records” starts when registrar enters the grade of the course in which the student was enrolled.

Test Case Summary:

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In this test use case Registrar enters the grades of a particular student using student registration no and course id and course name.

Test Use Case Name-5: Test case Manage Course Enrollment

| | |
|----------------------------|---|
| Date: | 04-06-2013 |
| Id: | 1.2 |
| Test Use Case Name: | Test case Manage Course Enrollment |
| System: | Registration System |
| Sub-System: | Manage Course Enrollment |
| Use Case: | Manage Course Enrollment |
| Level: | System level testing |
| Tester: | Mr.A |
| Condition to Test | Valid input in forms and output |
| Expected Results | System will store the course information in appropriate format. |
| Actual Results | System will store the course information in appropriate format. |

Step:

1. Student will add the course.
2. System will store the information.
3. Student drops the course Data sets.
4. System will update the information.

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| Course Code | Course Name | Credit Hours |
|-------------|--------------------------|--------------|
| CS2233 | Intro. Bioinformatics | 03 |
| CS1224 | Computation Biology | 03 |

Test Result:

a) - Pass b)- Fail (✓)

Summary of Testing:

The test use case “Course Enrollment” starts when student will enroll himself in current semester offered courses.

Test Case Summary:

The test use case “Course Enrollment” starts when student will enroll himself in current semester offered courses.

Ans-3

The WaterFall Model is the right choice for implementing Student Admission System.

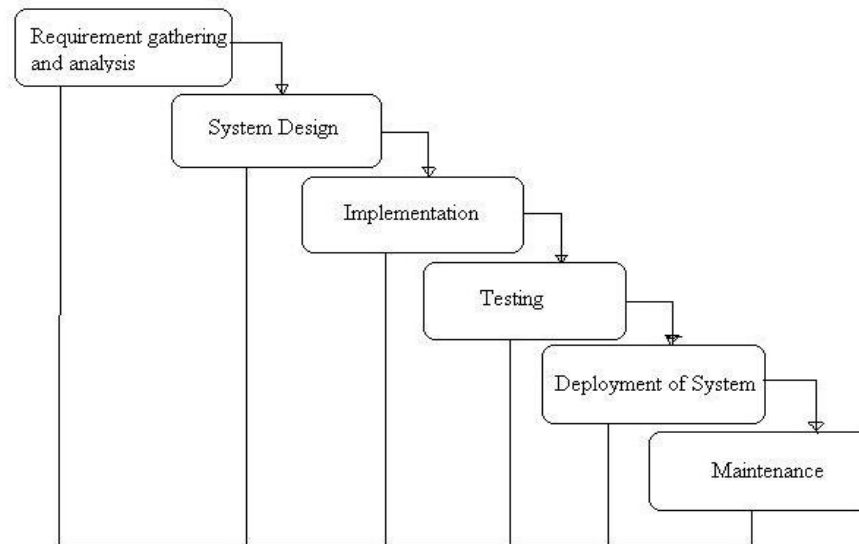
The Waterfall Model was first Process Model to be introduced. It is also referred to as a **linear-sequential life cycle model**. It is very simple to understand and use. In a waterfall model, each phase must be completed fully before the next phase can begin. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. In waterfall model phases do not overlap.

Diagram of Waterfall-model:

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General Overview of "Waterfall Model"



N

Advantages of waterfall model:

- Simple and easy to understand and use.
- Easy to manage due to the rigidity of the model – each phase has specific deliverables and a review process.
- Phases are processed and completed one at a time.
- Works well for smaller projects where requirements are very well understood.

When to use the waterfall model:

- Requirements are very well known, clear and fixed.
- Product definition is stable.
- Technology is understood.
- There are no ambiguous requirements
- Ample resources with required expertise are available freely
- The project is short.

| | Waterfall | Incremental | Spiral |
|--------------------------------------|-----------|-------------|--------|
| STRENGTHS | | | |
| Allows for work force specialization | X | X | X |

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| | | | |
|---|---|------|---|
| Orderliness appeals to management | X | X | X |
| Can be reported about | X | X | X |
| Facilitates allocation of resources | X | X | X |
| Early functionality | | X | X |
| Does not require a complete set of requirements at the onset | | X(4) | X |
| Resources can be held constant | | X | |
| Control costs and risk through prototyping | | | X |
| WEAKNESSES | | | |
| Requires a complete set of requirements at the onset | X | | |
| Enforcement of non-implementation attitude hampers analyst/designer communications | X | | |
| Beginning with less defined general objectives may be uncomfortable for management | | X | X |
| Requires clean interfaces between modules | | X | |
| Incompatibility with a formal review and audit procedure | | X | X |
| Tendency for difficult problems to be pushed to the future so that the initial promise of the first increment is not met by subsequent products | | X | X |
| (4) The incremental model may be used with a complete set of requirements or with less defined general objectives. | | | |
| | | | |