# IMAGE MODIFIER

SRS DOCUMENT

SOFTWARE ENGINEERING

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**1. INTRODUCTION**

Our project topic is “IMAGE PROCESSING TECHNIQUES”. It is a desktop

based application. This project aims at creating various effects for processing an image of any

format such as .jpg, .gif etc. Our objective is to give a clear outlook about the various

operations or effects that can give to an image to change its original look. We select this topic

as our project by acquiring motivations from various existing software’s such as Windows

Picture Management likewise…We use java net beans as a supporting software while

commencing this project. The pixel grabber function in java helps to grab each image into its

pixel level.

**2. SYSTEM ANALYSIS**

**2.1 INTRODUCTION:**

System study is the first phase for the development of software when the preliminary

investigation is made. The importance of system study phase is the establishment of the

requirements for our system to acquire, developed and installed. The important outcome of

the preliminary investigation is made in the study phase. System study is one of the important

steps included in the system development life cycle. System study involves studying the ways

by which we can process an image. A number of image editors are available for us, but they

have high cost. By developing our own system we can done image processing at free of cost.

The life cycle of our system includes the following steps:

 Reorganizations of need or Preliminary study/survey

 Feasibility study

 Analysis

 Design

 Development and testing

 Implementation

 Post implementation and Maintenance

**2.2 FEASIBILITY STUDY:**

Many feasibility studies disillusioning for both users and analyst. First the study

often presupposes that when the feasibility document is being prepared the analyst is in a

position to evaluate solutions; second most studies tend to overlook the confusion inherent in

system development. The three key considerations are involved in feasibility analysis are

 Economic feasibility

 Technical feasibility

 Behavioral feasibility

**2.3 ECONOMIC FEASIBILITY:**

Economic feasibility is the most frequently used methods for evaluating the

effectiveness of a candidate system. More commonly known as cost/benefit analysis, the

procedure is to determine the benefits and savings that are expected from a candidate system

and compare them with cost. The result of comparison is found and changed if needed. If

benefits outweigh costs then the decision is made to design and implement the system.

Otherwise further justification or alternation in the proposed system will have to be made if it

is to have a chance of being approved.

**2.4 TECHNICAL FEASIBILITY:**

Technical feasibility centers on the existing system and to what extend it can

support the proposed addition. Here we have many technologies existed which can give

effects to an image .But our proposed system have almost all the operations together in one

unit. We can choose any effect fastly and easily whenever we required, otherwise we have to

select an effect, then add an effect to image, if we are not much impressed with we have to

search for another one. In the proposed system there is no need to search for effects .All the

effects are put together and select an image give effects, change to another one and so on

easily. The main feature of the proposed system is that it is more users friendly.

**2.5 BEHAVIORAL FEASIBILITY:**

It is also known as operational feasibility. People are inherently resistant to change

and computers have been known to facilitate change. Now most people support computerized

system. An estimate should be made of how strong a reaction the user staff is likely to have

toward the development of a new system. Therefore it is understandable that the introduction

of the new system required special effort to educate and train the staff on way of operating

system. Also required to give awareness to the customers. The staffs were not against the

system; however the user would accept the concept.

**2.6 INTRODUCTORY INVESTIGATION:**

Introductory Investigation is done prior to the system study phase. It is indented to

give an insight into the requirements of the system based on the feasibility report obtained

after feasibility study. After the feasibility study, we came across some factors which made

the introduction of a new system inevitable. In globalized world good information system has

become a need more than a status symbol for any organization, especially a public

organization like ours.

**2.7 SYSTEM STUDY:**

System study involves studying the ways the organization currently retrieves and

processes to produce information with the goal of determining how to make it better. For this,

we developed an alternative system and evaluated it in terms of cost, benefits and feasibility.

We made a thorough study of all areas which we have to make better while developing the

proposed system.

**2.8 CONCLUDING INVESTIGATION:**

After starting the shortcomings of the existing system and features of proposed

system, a concluding investigation was done. It looks into consideration of old effects and

new effects and selects some effects that give effects differently.

**3. SYSTEM DESIGN**

**3.1 INTRODUCTION:**

Software design is the preliminary step and is also a building block of software

engineering. The efficiency of the software is promoted through design phase. The design

phase begins when the requirement specification document for the software to develop is

available. Design is essentially the bridge between the requirement specifications and the

final solution for satisfying the requirement. It is done in three stages such as external design,

architectural design and detailed design. While the requirement specification activity is

entirely in the problem domain, design is the first step to moving from, the problem domain

towards the solution domain. Design is essentially the bridge between the requirement

specification and the final solution for satisfying the requirements. It is done in three stages

such as external design, architectural design and detailed design.

We began the design phase with preparation of a detailed requirement

specification. Inputs were done well. Due care was taken to ensure that each part of the

design was in conformation with the requirements specified earlier. Effects for the image

were designed so as to ensure ease of use and simplicity in operation. Output for the effects

will be displayed on panel placed below the effects.

**3.2 DATA FLOW DIAGRAM (DFD):**

graphical eliminating thousands of words,

logical representations, modeling the works of the system, hierarchical showing at any level

of details and jargon less allowing user understanding and reviewing Analysis model help us to understand the relationship between different

components in the system design. Analysis model shows the user clearly, how a system will

function. This is the first technical representation of a system. The analysis modeling must

achieve three objectives.

 To establish a basis for creation of software design.

 To describe what the user requires.

 To define the set of requirements that can be validated once the software is built.

The data flow diagram is a graphical technique that depicts information flow and

transformation that applied as data move from input to output. The DFD is used to represent

the increasing information flow and details. The level 0DFD also called functional system

model represents the entire software elements as a single bubble with input and indicated by

incoming and outgoing arrows. So data flow diagram is also known as bubble chart.

Additional flow and information flow parts are represented in the next level, level 1DFD.

**3.3 INPUT DESIGN:**

Input design is a part of the overall system design. Collection of input data is the

most expensive part of the system, in terms of both equipment used and the number of people

involved. It is the point of must contact for the user with the computer system and is prone to

error. The input design in the system has a number of objectives like to produce a cost

effective method of input, to set highest level of accuracy for the data and to ensure that input

is acceptable and understood by the user.

Input design is the process of converting user-oriented inputs to a computer-based

format. In the system design phase, the expanded data flow diagrams identify logical

dataflow, data store, sources and destinations; Input data are collected and organized in to

groups of similar data.

System analyst decides the following input design details

 What data to input?

 What medium is used?

 How the data should be arranged and coded?

 The dialogues to guide users in providing inputs.

 Field sequence that matches in the source document

 Data items and transactions needing validation to detect errors.

 Methods for performing input validation to detect errors.

The main effects that we input in our project are:

Image Filters

**4. SYSTEM IMPLEMENTATION**

**4.1 HARDWARE REQUIREMENTS:**

In order to implement a new system the choice of a processor with maximum

possible speed is made there should be sufficient memory to store data and software tools for

efficient processing.

Processor : Pentium IV or above

Clock Speed : 800 MHz

Main Memory : 256 MB RAM

Disk Storage : 80 GB or above

Monitor : SVGA Color

Key Board : 108 Keys

Mouse : Logitech

Floppy Disk Drive : 3.5 floppy 1.44 MB

Compact Disk Drive : 52 x max

**4.2 SOFTWARE REQUIREMENTS:**

Operating System : Windows 2000 or above

Front End : Java Net Beams 6.5

FEATURES OF OPERATING SYSTEM

Windows XP:

Windows XP is the most advanced desktop0 operating system recently released by

Microsoft. Designed for business of all sizes and for home users who demand the most from

their computing experience, Windows XP Professional delivers the new standard in reliability

and performance. It includes all the great features and new visual design of Windows XP

Home Edition, plus premier security and privacy features, advanced recovery options,

improved ability to connect to large networks etc.

Following are some of the advanced features OF Windows XP Professional:

Windows XP automatically keep the PC up-to-date with the latest security

enhancements including the Windows Security Center, Windows Firewall, and more to help

protect our computer from viruses and worms that can spread through the Internet.

Windows XP Professional provides rich, wireless network support, helping simply and

easily connects to wireless networks whether in the home, office, or outside.

Encrypting File System, only in Windows XP Professional, provides an additional level

of file protection from hackers and data theft by transparently encrypting files with a

randomly generated key. Save battery power when not working with the electrical supply.

Windows XP Professional extends battery life by managing the way the laptop uses

power.

The minimum configuration required for Windows XP Professional Operating System is

Processor : Pentium-233 MHz

RAM Size : 64 MB

Hard Drive Space : 1.5 GB

Peripheral/Interface

Device : Mouse or Compactable, CD-ROM,

SVGA monitor

**4.3 LANGUAGE DESCRIPTION:**

4.3.1 JAVA

Java is the first and foremost an object-oriented programming language. Java is a

programming language originally developed by James Gosling at Sun Microsystems (which

is now a subsidiary of Oracle Corporation ) and released in 1995 as a core component of Sun

Microsystems&#39; Java platform . The language derives much of its syntax from C and C++ but

has a simpler object model and fewer low-level facilities.

Java is a general-purpose, concurrent, class-based, object-oriented

language that is specifically designed to have as few implementation dependencies as

possible. It is intended to let application developers &quot;write once, run anywhere&quot;. Java is

currently one of the most popular programming languages in use, and is widely used from

application software to web applications.

4.3.2 NETBEANS

NetBeans refers to both a platform framework for Java desktop applications,

and an integrated development environment (IDE) for developing with Java , JavaScript , PHP ,

Python , Ruby , Groovy , C , C++ , Scale , Clojure , and others. The NetBeans IDE is written in

Java and runs everywhere where a JVM is installed, including Windows, Mac OS, Linux, and

Solaris. A JDK is required for Java development functionality, but is not required for

development in other programming languages. The NetBeans Platform allows applications to

be developed from a set of modular software components called modules. Applications based

on the NetBeans platform (including the NetBeans IDE) can be extended by third party

developers . NetBeans IDE 6.5, released in November 2008, extended the existing Java EE

features (including Java Persistence support, EJB 3 and JAX-WS).

**5. SYSTEM TESTING AND MAINTENANCE**

**5.1 SYSTEM TESTING:**

Testing is the stage of implementing which is aimed at earning system

running accurately and efficiently. An error or anomaly in program code can remain

undetected indefinitely. To prevents this from happening the code tested at each of the

level. So the testing is performed to ensure that the system as a whole is bug free. For each

stage or phase, a different technique for eliminating the errors that exists in each stage.

However some requirement error and design errors are likely to remain

undetected.Ultimately, these errors will be reflecting in the code.

The basic levels of testing are:

 Unit testing

 Integration testing

 System testing

 Acceptance testing

**Unit Testing**

The first level of testing is unit testing. In this, the smallest units of software design,

the module are tested against the specifications processed during the design for the modules

are tested against the specification produced during the design for the modules .

**Integration testing**

Data can be lost across an interface, one module can have an adverse effect on the

other sub functions, when combined may not produce the desired functions. Integrating

testing is the systematic testing to uncover the errors within in the interface.

**System testing**

In this testing, the entire software system is tested. All the application programs are grouped

together for the system testing, to test the whole system exhaustively including any additional

housekeeping function like file achieving. This is the developers the last opportunity to check

that the system works before asking the silent to accept it. The purpose of this testing is to

verify that if the software meets its requirements. It verifies all elements much properly and

overall system function performance is achieved.

**Acceptance Testing**

User Acceptance Testing of the system is the key factor for the success of any

system. The system under considerations is tested for the user acceptance by constantly

keeping in touch with perspective system at the time of development and making change

whenever required. This is done with regard to the input screen design.

**5.2 MAINTENANCE:**

Software maintenance is the process that contains various modification activities that

occur following product release. The project is coded in any efficient manner. So it facilitates

the easy understanding and thereby easy maintenance.

**6.CONCLUSION**

In the ever shrinking world of Information Technology, our project is only a

humble joint venture to satisfy a small part of the Image Processing. The system is highly

flexible and can be modified to use in any photo studios &amp; all of us .We have tried to make

the system user friendly. Security is one main consideration in the project. The system is

protected from any unauthorized access. We hope the entire objection to the system is

rectified and the users will accept the system. There is no claim of this product being perfect,

or anything near that. This is only a humble attempt made under trying circumstances. This

system has been designed in an attractive manner. So that, even a user with minimum

knowledge can operates the system easily.

The software is developed with scalability in mind. Additional modules can easily

add when necessary. The software is developed with the modular approach. All modules in

this system have been tested separately and put together to form the main system.

**7. BIBLIOGRAPHY**

1] Theo Pavlidis, Algorithms for Graphics and Image Processing, Computer Science

Press, 1982.

[2] John C. Russ, the Image Processing Handbook, CRC Press, 1995.

[3] Ernest L. Hall, Computer Image Processing, Academic Press, 1979.

[4] David Bistry [et al.], Complete Guide to MMX Technology, McGraw-Hill 1997.

[5] Joe King, Matlab for Engineers – Second Edition, Addison-Wesley Publishing

Co., 1998.

[6] Barry Haynes, Photoshop 6 Artistry – Mastering the Digital Image, New Riders

Publishing, 2001.

[7] Lawrence H. Rodriguez, Building Imaging Applications with Java Technology,

Addison-Wesley Publishing Co., 2001.

[8] Michael J. Laslo, Object-Oriented Programming featuring Graphical Applications

In Java, Addison-Wesley Publishing Co., 2001.

[9] Mitchell Waite [et al.], Data Structures and Algorithms in Java, Waite Group

Press, 1999.

[10] Matthew Robinson [et al.], Swing, Manning

[11] Daniel M Hoffman, Software Design, Automated Testing and Maintenance,

International Thompson Computer Press, 1995.

[12] C. T. Arrington, Enterprise Java with UML, John Wiley and Sons, 2001.

[13]Image Processing in Java – Riyaz Mansoor

[14] www.intel.com

[15] www.microsoft.com

[16] www.imagemagick.org

[17] www.adobe.com

[18] Java.sun.com

[19] www.mathworks.com