Nirma University

Institute of Technology Semester End Examination (IR). Decernber2 B. Tech. in Computer Science & Engineering. Sem

208504 SOFTWARE ENGINEERING

Engineering. Semester-V

Roll / Exam No.

19132

Supervisor's initial with date

Time: 2 Hours

Max Marks: 50

Instructions:

1. Attempt all questions. 2. Figures to right indicate full marks. 3. Draw neat sketches wherever necessary 4. Attempt questions in sequence only

Do as directed:

[16] Selection of a process model for any software project t**o be developed fosi COIBL4 d**epends upon a number of factOTS. Ia

er of factors. Identify those factors th taken into consideration and justify the same.

"Both the waterfall model of the software process and the prototyping JOS) **CO1BL4** model can be accommodated in the spir**al process modelisty**

with appropriate example. Consider the following simplified description of a university where (06) professors teach courses in which students can enroll. A profissor has a name, address, phone number, email address, and salary. A student has also a name, etc., but no salary (sorry). A student, however, has de average mark of the final marks of his or her counts). A course has a name and a number. When a student is enrolled in a course, the marks for this enrollment are recorded. From enrollment, the current average, as well as the final mark if there is one) can be obtained. From a student, one can obtain a list of courses he or she is enrolled in. Professors can teach many Courses. Each course has at least one and at most three teachiors. A student can get enrolled in exactly 5 courses. A course can be offered orily if at least one student is enrolled in it. There are two types of Course bachelor and master. From a bachelor course students can not withdraw. From a master course they can. Design a class diagram for this university. Add attributes and methods when necessary. Make use of the concepts of object oriented programming

Do as directed:

Differentiate between milestones and delivera**bles. Als** COQB3 of task list stating dependencies. milestones and de

project for developing library **management** University

Design black box test suits for a function that chas CO3BLS character string or up to 25 char**acters length is a** equivalence partitioning and boundary value analy

Page 1 of 4

[16]

105) rictes, milestones and deliverables for

ty management system for Nirma suuts for: a function that checks whether a 1051

characters length) is a palindrome using

bundary value analysis. Consider all

2CS50H Software Engineer

In a distri Request B diagrain oli providing ser

Bibilities for the functionality given. Plain all the steps of software configuration management process 106 Software engineering

OR distributed software architecture, represent the role of Object 106 est Broker using the architecture of CORBA. Sho**w appropriate** An of how ORB stub and ORB skeleton are com**municating and**

**eing services** and explain the same.

[18] sider the following algorithm:

[05]

3.

Do as directed

BL6

Consider the

Tunction sdivisor (int n)

int d, r; begin

if not oddín) then

sdivisor = 2; else

begin

r\* trunc{sqrt(n)); while (n mod d<>0) and (ds ) do

d = d+2: if n inod d =0 then

sdivisor = d. else

sdivisor = 1 end end

Perform the following tasks:

el Design the contro flow graph fo**r the given code.** hi Determine cyelomatie complexity.

Identify the linearly independent paths usin**g basis path**

al and external attributes affect quality of software? [05] static software project metrics in software quality

ists of activities named A to N. Consider the following [08]

testing

How internal and external art 4B12 Explain static software

*managem*ent A *project consi*sts of 8 activita table:

Activity

Completion time (in days)

Immediate predecessor activities

C. D C D

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**(B**

Perform the following tank

a) Construct activity network so as to sat

satisfy the scheduling requirements shown in the table by Pind the last time required to complete the

te the whole project show the calculation of free float time

of each activity and based on that calculate the critical path d) Mention the critical path

OR SME i implementing Customer Relations M**anagement (CRM** C043L6pplication. The Web omapletion, an

**application** will be required to send information to the C**RM each evening by** retrieving Perpuests for Information (RFI) submitted that day and currently trattined in the RPI logical file within the WI application The following information in went on this daily feed requestor ID: requestor's first mi*d*dle, and last name, requester's organization; requestor's address (nitrect address, city, state, and Zi*p* Code); date of request requested items, and quantities for requested items. The CRM application will validate and process the daily feed into a new Potestial Customer logical file. Separate reports by state will be pencind each morning by the CRM application and delivered to

teles coordinators. The printout will contain all of the in dormation on the Potential Customer logical file as well as a total mumber of recuests for information, which is calculated at the time the report in produced. The mate de and state *name,* retrieved from fi mode table, will also be printed on each report. Each state sales

corded l have the ability to retriever via weten all customer Information T rained in the Potential customer **logical file by** Entering the TELESCOF ID id action kevartooded error messages will be returned the re tor ID not found. The state **coordinate** an update the requested items and**/or quantities**

rej

Dreigned f or lov: hard-coded CITO w

may be returned if the de e d educated items net contained in the Inventon Leicinal file masti Inventory pletion of a hard-ended confirmation

All of these data are o average coraplexity and minderity plex 1..

stim of value 50. Civen the historical data that the productivity for systems of this type in 9.5 FPY of Rs 32,000 per month. Based on the data

wage complexity a*nd o*verall system is

E eum valui adjustinent factors Gitthet aanizational Ver this

Pin Also, labor rate is leted to the data provided, compute the

Metition of the external inputs,

Inquiries, internal logical files and 1 Compite function point for the best M re the total estimated projer

Input

all QULPUTS, external There and externa interface files

white

roeit onto the SSL

208501 Software Engineering

Sighting factors required are provided as followsi

Sitnple

Average

Complex

4

6