

International University of Business Agriculture & Technology

Mid Term Home Assignment

Submitted to:

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Section: I

Program: BCSE

Course Code: CSC -461

Course Name: Software Engineering

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Ans: to the Ques NO: 1

iii) Function point estimation for Office

Management System:

Employee

Functionality	Input	Output
Add personal info	Father's name, mother's name, DOB, Present Address, Permanent Address, Religion, marital status, gender, phone number.	Add to data base
Edit personal info	Father's name, Mother's name, DOB, Present Address, Permanent address, marital status, gender	Add to data base.
Search	Enter search text	Employee name, Employee ID, Father name, present address.
Login	Email, Password	Get authorized.
Working hours	Entry time, leaving time, Employee name.	Add to data base.
Report	Enter Report text	
Working history	Priorious company name, starting year, ending year	Add to data base

Admin

Login	Email, Password	Get Authorized
Add Employee	Employee ID, Name, Email, Password, phone, Date of Birth	Add to data base.
Remove Employee	Press delete	Employee delete from data base
Manage Salary	Hourly rate,	To add salary.
Task chart	Task name, task description	Task added to database.
Task distribution	Task name, Employee Names	Employee can see task.
Every day Attendance	Enter date	list of employee
View Reports	Enter date	list of report description, employee name, ID.

Identifying complexity

Transaction Functions	fields / file involvement	BFR DETS	FTB DETS	FTB DETS
Add personal info (E1)	father name, mother name, Date of birth, Present add, permanent add, Religion, marital status, Gender, phone number File: Employee	0	1	1
Edit personal info (E1)	Father name, mother name, Date of birth, Present add, permanent add, marital status, Gender, phone File: Employee	9	1	1
Search (E8)	Search term, Employee name Employee ID, phone, email, File: Employee	5	1	1

Login (E1)	Fields: Email, password, press login File: Employee	3	1
Working hours (E1)	Employee name, Employee ID, Entry time, leaving time. File: Workinghour	4	1
Report (E1)	Employee name, Report description, Date File: Report	3	1
Working history (E1)	Employee name, EmpID, previous company name, starting year, Ending year File: Employee, workhistory	5	2

Transaction function	Fields / File Involvement	EPR DETS	DET, FTR, D F
Login (E1)	Fields: Email, Password File: Admin	2	1
Add Employee (E1)	Employee ID, Employee name, Date of birth, Email, phone file: Employee	5	1
Delete Employee (E1)	fields: Employee ID, Name, press delete; confirm file: Employee	4	1
Manage Salary (E1) (HF) (EO)	Fields: Hourly rate, Festival bonus Employee name, Employee ID, Working hours. File: Employee, salary, working hour	5	3
Task chart (E1)	Task Name, Task description, required time, Employee ID, Employee name. File: Tasks, Employee	5	2

Attendance (E1)	Date , Employee ID, Employee Name , File: Attendance.	3	1
view Report (E0)	Date , Employee ID, Employee Name , Report description . File: Report	4	1

Data function	Field / File Environment	RETS	DEFS
Employee	Employee ID, Name, Father Name, Mother name, Date of birth , Email, password, Present add , Permanent add , Marital status , Gender , Mobile	1	12
Working hours	Employee ID, Name , Date Date, @ Entry time , @ leaving time ,	5	5

report	Employee name, Employee ID, report description, Date	21	4
Working history	Emp-Name, Emp-ID, previous company Name, starting year, Ending year	2	5
Salary	Emp-Name, Emp ID, Total working hour, working Rate, festival bonus	3	5
Task	Task Name, Task ID, Task description, time, Emp-Name , Employee ID	2	6
Attendance	Date, Employee Name , Employee ID	1	3

unadjusted function point Estimation:

Transaction function	DET, ETR, ETR _s	DEF, ETR _s	complexity	UFP
Add Personal info (E1)	9	1	low	3
Edit personal info (E1)	9	1	low	3
Search (E9)	5	1	low	3
Login (E1)	3	1	low	3
Working hour (E1)	4	1	low	3
Report (E1)	3	1	low	3
Add Employee (E1)	5	1	low	3
Delete Employee (E1)	4	1	low	3
Manage salary (E0)	5	3	high	6
Task chart (E1)	5	2	Average	4
Attendance (E1)	3	1	low	3
<u>Total</u>				35

Data Function	RETs	DETs	complexity	VFP
Employee (ILF)	1	12	low	2
Working hour (EIP)	1	5	low	5
Report (EIF)	1	4	low	5
Salary (EIF)	3	5	low	5
Task (ILF)	2	6	low	2
Attendance (ILF)	1	3	low	2
total				46

Performance and Environment impact:

GSE	D1
Data communication	4
Distributed data processing	4
Performance	4
Heavily used configuration	2
Transaction Rate	3
Online data Entry	4
End user Efficiency	3
Online update	3
Complex processing	1
Reusability	2
Installation Ease	2
Operational Ease	2
Multiple site	0
Facilitate change	2
Value Adjustment factor - VAF Total Degree of Influence	33

Value Adjustment factor (VAF) =

$$\begin{aligned} & (0.65 + (0.01 \times TD1)) \\ & = (0.65 + (0.01 \times 33)) \\ & = 0.98 \end{aligned}$$

$$UFP = UFP(\text{Transaction Fn}) + UFP(\text{DATA Fn})$$

$$\begin{aligned} & 2 \quad 35 + 46 \\ & = 81 \end{aligned}$$

Adjust function point count = $UFP \times VAF$

$$\begin{aligned} & 81 \times 0.98 \\ & = 79.38 \end{aligned}$$

$$\begin{aligned}\text{Effort for C#} &= \text{APP} \times \text{Productivity} \\ &= 89 \times 15.5 \\ &= 1224.5 \text{ per hours} \\ &= 153 \text{ person days}\end{aligned}$$

Now I am explaining how I'm maintain software efficiencie:

- ⇒ Here I must have in an honest and ethically responsible way if they are to be respected as professionals.
- ⇒ Here I didn't take more than time then if it need to pre prayer.
- ⇒ Here I maintain the perfect timing, not more or not less.

- ⇒ I didn't show more cost than it needs. I estimate the perfect cost for the project. So I can say that here I maintain the ethics.
- ⇒ I ensure that here I maintain highest professional standard.
- ⇒ Software engineers shall be fair to and supportive of their own colleagues.

2.

Here are the plan to avoid the effect of the risk that I may face:

Risk Identification

Risk type	Possible risk
Technology	size of the memory of the system may be significantly low. ① Transaction rate of database may be slower than expectation ② User interface may be complex ③
People	Lack of skilled staff cannot make the system up to the mark. ④ Lack of test administrator may not make the test environment

	successful. ⑤
Organizational	restriction on project budget might cause create trouble. ⑥
	Insufficient human resource can problem to finished in deadline. ⑦
	Unorganized project scheduling also may create problem. ⑧
Tools	Using old version of the hardware may create problem in the project ⑨
	Code generated by the software code generation tools may inefficient ⑩
	Hard disk crashed can make big trouble ⑪

Requirements

Major change in the requirement can make the project unsuccessful ⁽¹²⁾

Changing requirement also cause extra change. ⁽¹³⁾

Estimation

Misjudged of the software size can create problem in future ⁽¹⁴⁾

ignorance in making time estimation may create pressure to the developers on to the organization ⁽¹⁵⁾

with out proper estimation of the cost its hard to estimate the proper cost. ⁽¹⁶⁾

Risk Analysis

Risk	Probability	Effects
Size of the memory may be significantly low	Moderate	serious.
Transactioe of database may be slower then expectation	Moderate	serious.
User interface may be complex	Moderate	serious.
Lack of skilled staff cannot make the system upto the work	Moderate	serious catastrophic
Lack of test administrator make the test invironment unsuccessful.	low	serious.
Underestimation on project budget create trouble.	low	catastrophic

Insufficient human resource create problem to finished in deadline .	low	Catastrophic
Unorganized project scheduling also create problem	low	Serious.
Using old version of the software hardware can create problem .	high	Tolerable
Code generated by the software code generation tools may be inefficient	Moderate	Insignificant
Hard disk crashed may be big trouble	low	Serious.
Major change in the requirement	Moderate	Serious.
changing requirement also cause extra charge	too high	Tolerable

Missadjust software size can create problem	High	Tolerable
Ignorance in making time estimation	low	serious
Without proper estimation of cost it hard to find the cost	low	catastrophic

Risk Planning

Risk planning	strategy
server storage size	Create enough storage for upcoming 5/10 years, may make over this.
Database Performance	Investigate the possibility of buying higher-performance database.
Lack of staff	Organize the team very well.
hardware performance	Investigate the possibility of buying higher performance hardware.
commitment problem	Alert customer to potential difficulties and possibilities of delays.

Financial problems.

Prepare a briefing document to senior management showing how the project is making a very important contribution to the goal of the business, presenting reason why cuts to the project budget would not be cost-effective.

Underestimated time estimation

Make a proper time table and estimate the project development time perfectly.

Requirement changes

Derive traceability information to access requirement changes impact. minimize information hiding in the design.

Proper cost estimation

Find all the necessary hardware and estimate time to make the perfect cost estimation.

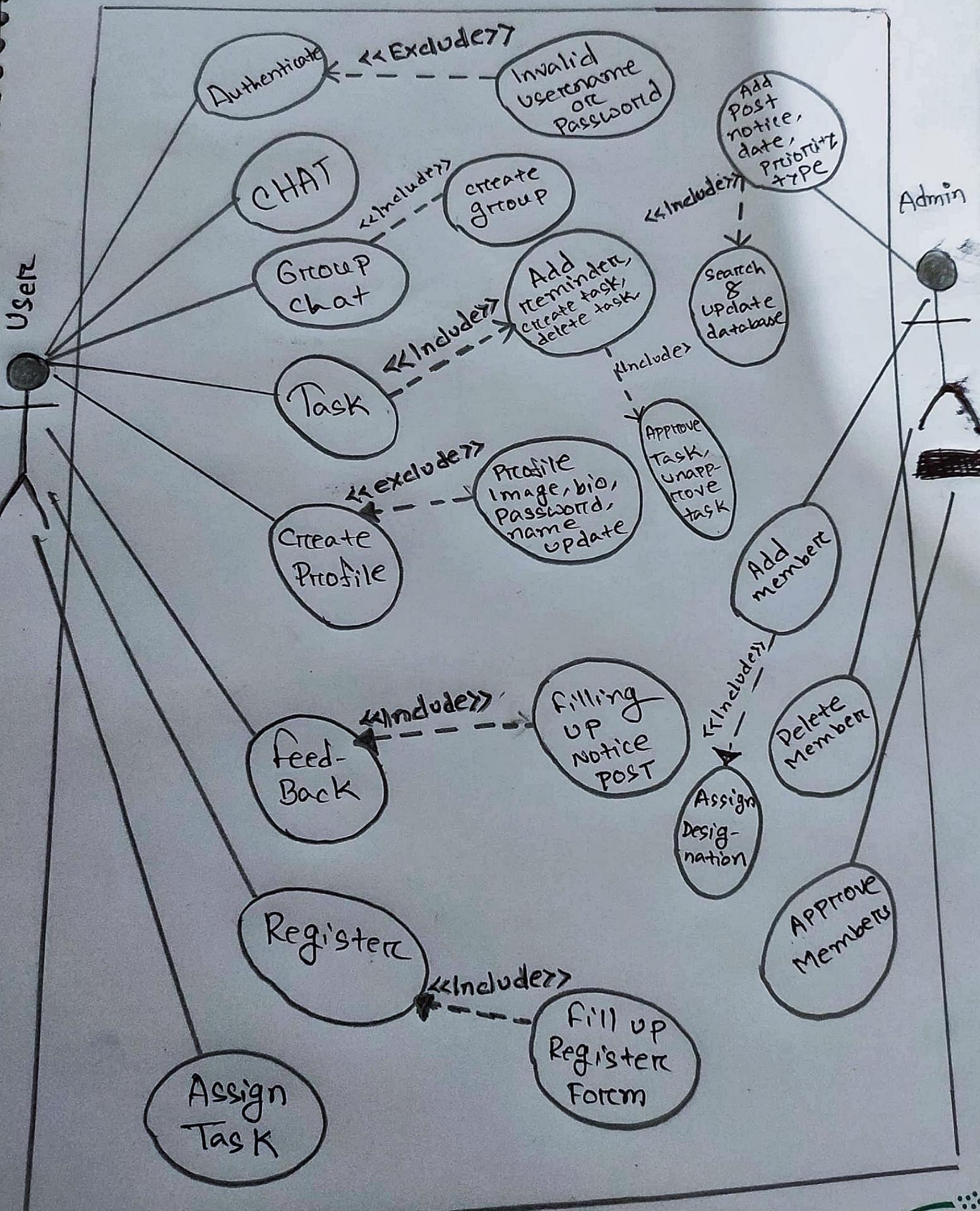
Risk Monitoring:

- ① There will be meeting with the stakeholders regularly. This ensure that the product we are making solve a problem.
- ② To reduce user interface complexity product will develope from the end user mind.
- ③ Always keep some backplanning ~~so~~ so there is some requirements change we can make it perfectly.

④ The development cost of the software increase by 20% consult with the system analyst during the system Analysis, design and testing phase of the project.

⑤ Proper algorithm and datastructure is followed to make the code easily understandable and reusable.

By this way we can manage our risk at the time of software development -



usecase title :

office management system .

Actor: Admin, Employee.

Description: I as an ~~customer~~ Admin login the system. I as an ~~customer~~ admin can add one delete employee. I as an admin can view the attendance of the employee. I as an admin can manage salary.

I as an admin can can view the salary of a employee. I as an Admin can view report of an employee.

I as an admin will logout the system . I as an admin distribute the tasks .

I as an employee login the system.

I as an employee can add personal information also edit personal information

I as an employee can add my working history

I as an employee can see my tasks.

I as an employee can view my salary

I as an employee can report to the admin. I as an employee can logout the system.

Class Diagram
Office Management System

