PROJECT MANAGEMENT PLAN

JOB APPLICATION MANAGEMENT SYSTEM

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FOR THE

JOB APPLICATION MANAGEMENT SYSTEM

JAM-001

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PREFACE

This report SPMP contains the overall management plan of the project JAM. Development, budget, validation, verification and many other development principals are scheduled and planned in this report. This is a guideline for the reader to see the flow of development and control the process whenever he/she needs.

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1. OVERVIEW

This part of the management plan report gives an overview about the report. In the following subsections purpose, scope, and objectives of the project, the project assumptions and constraints are provided. Besides this, a list of project deliverables, a summary of the project schedule and budget, and the plan for evolution of the project management plan shall be provided in the following sub-sections.

1.1 Project Summary

1.1.1 Purpose, Scope, and Objectives

Traditional job application tracing systems are difficult to use and do not satisfy the company requirements. This leads to problems in timely employing process. Taking more time in employing the qualified people process also entirely slow downs the project and therefore costumers are not satisfied. This causes big problems such as costumers do not want to work with this company. Companies should determine what to do in a short time. Most applicants apply for a job to more than one company. The company that gives respond quicker can work with that applicant. Otherwise, he/she may want to work in another company because of having no response. Moreover, more problems occur such as increase in project completion timing, planning process of projects and accounting. This affects project managers, department manager, projects members and corporate management. Therefore, the purpose of the project is to automate the job application process in order to do better elimination of candidates and fasten the process. Scope of the project is determined via various facilities. These facilities are web interface for applicant and department and project managers. Users are able to create open position, register new applicant, determine applicants for first interview, add comment for a particular applicant, log into system, enter first interview results, add new user to system, change password, search, close open position, approve and disapprove procedure, enter or update personal information. As it is mentioned above objectives of this project is to automate the job application process and make it easier for both companies and for applicants. This project enables more reliable applications since people do not have to wait more than needed.

1.1.2 Assumptions and Constraints

There are some constraints which the project depend on such as schedule and budget. This is a 3 month project and it requires $60000 of budget for this time. Implementation language is Java and the spring and hibernate technology of Java will be used during development. Technology to be deployed will be a web-based product and it needs to use a database which will be Oracle. Project will be able to run in both UNIX and Windows operating systems.

1.1.3 Project Deliverables

Deliverables are the company. Final product is set up into a server located in company at 28/05/2008. Since this is a small project all of the components are set at the end of the project. During deployment a valid host name will be bought by the company to make it

usable in the web. Components to be delivered are basically applicant components and department worker components.

1.1.4 Master Schedule and Budget Summary

A summary of the schedule and budget for the software project is provided in this section of management plan report. Development schedule follows the sequence of developing components according to their level of importance. Each component will be developed in given time in the schedule. Budget needs to supply the salaries of the engineers involved in the development of the project. This is about $60000 for 3 month period.

1.2 Evolution of the SPMP

The Software Project Management Plan describes the planning of the project in detail. It is an evolutionary document that is updated in each workpackage of the project The updated SPMP is a milestone of every work package. This version that is updated is added immediately to archive in order not lose the changes and progress. This also enables us to go back if necessary to see the older versions.

2. REFERENCES

[1]. Project Description Document of Job Application Management.

[2]. Declan Delaney and Stephan Brown, *"Documentation Templates for Student Projects in Software Engineering"*, Department of Computer Science, National University of Ireland, 2002.

[3]. *"Sciamachy Data Center Software Management Plan"*, Sciamachy Data Center, 1999.

[4]. Cagatay Undeger, *"Sample Work Breakdown Structure"*, Department of Computer Engineering, Bilkent University, 2008.

[5]. Software Engineering Standards Committee of the IEEE Computer Society, *"IEEE Standards for Software Project Management Plans"*, IEEE Std 1058-1998.

3. DEFINITIONS

JAM: Job Application Management System.

SSD: Software Specification Document

SDDD: : Software Design Document

SPMP: Software Project Management Plan

UR: User Requirement

D: Design

I: Implementation

DP: Deployment

UML: Unified Modelling Language

OMT: Object Modelling Technique

4. PROJECT ORGANIZATIONS

This clause of the SPMP identifies interfaces to organizational entities external to the project; describe the project's internal organizational structure; and define roles and responsibilities for the project.

4.1 External Interfaces

The relationship and interfacing between the project and external groups and organisations that form the immediate project environment are stated in this subsection. A steering group meeting will be held every 2 weeks to discuss progress, problems and issues put forward by the end user advisory group members of end user advisory group participate in the steering group meetings and the progress meetings of this project..

4.2 Internal Structure

Since team is small, it uses the power of dynamism. During development each engineer will ask the unclear analysis points. Every week there will be team meetings which make validation. There will also be a validation meeting biweekly.

4.3 Project Roles and Responsibilities

Project Manager

Handles communications with external groups and organisations.

Team Leader

Makes plans and decisions on technical matters within the project. Is responsible for the production of the SPMP and for archiving project documentation.

The Software engineers

Design, test and implement software systems. Are responsible for the production of the Software Specification and Design Documents (SSD,SDD) and setting up a validation and verification test plan.

5. MANAGERIAL PROCESS PLANS

This section describes the planning, measurement, tracking, reporting, risk control mechanisms needed to provide management control over the technical processes and product quality, and appropriate project initiation and closeout procedures.

The management of this project is committed to deliver the milestones on time, with costs covered by the project budget and utilizing the available and necessary resources as they are mentioned in the description document [1]**.**

5.1 Project Start-up plan

This part of the SPMP specifies the estimation plan, staffing plan, resource acquisition plan, and training plan.

5.1.1 Estimation plan

Time constraint enforces that each component of the project are expected to deliver at time. Requirements and technical design, implementation and testing phases will take a maximum of a few weeks each, shortest being only three days. A big emphasis on documentation demands some time from implementation, but that will be considered in scheduling. The overall working time spent by the core group in this project is expected to be three man-months, that being near the artificial milestone of 500 hours. Amount of time spent on each task is described in the table below.

5.1.2 Staffing plan

No extra staff will be hired during this project. Four members of the core group will be enough for a project of this scale which is each contracted.

5.1.3 Resource Acquisition plan

Hardware and software resources are well-suited for a project of this scale. However, in order to test and deploy the project, web hosting is needed to get the application from the applicants. On the other hand, no extra computer is needed because we will design, implement and test the project in our existing computers.

5.1.4 Staff Training

Project staff will not be trained especially for or during this project, but naturally some new information concerning for example the algorithm and the user interface has to be acquired in order to deliver a usable product.

Purpose of this project is to also learn and develop each participant's skills in software projects' task fields

5.2 Work Planning

This clause of the SPMP shall specify the work activities, schedule, resources, and budget details for the software project.

5.2.1 Work Activities

Work that needs to be done and their expected time can be described as in Table 1 :

Task	**Subtask**	Person (time allocated)
GUI		
	Main	CÇ (40h)
	Data	BT (10h)
	FileIO	ÖFU (10h)
	Database View	ÖFU (10h)

	GUI Testing	MK (20h)
	GUI Testing document	CÇ (5h)
Architecture and Integration		
	System Design	ÖFU,MK,CÇ,BT (20h)
	Object Design	ÖFU,MK,CÇ,BT (20h)
	Database Design	ÖFU,MK,CÇ,BT (20h)
	Implementation	ÖFU,MK,CÇ,BT (40h)
Management and Documentation		
	SPMP	MK,CÇ,BT (15h)
	SRS	MK, BT (15h)
	SDS	MK, BT (15h)
Testing		
	Unit and Acceptance Testing	ÖFK, MK,CÇ,BT (15h)
	Software Test Documentation	ÖFK (15h)

Overall hours for each staff member:	
*Bahri Türel (**BT**)*	170h
*Celal ÇIĞIR (**CÇ**)*	175h
*Mücahid KUTLU (**MK**)*	180h
*Ömer Faruk UZAR(**ÖFU**)*	150h
+	675h total.

Table 1. Work Activities

5.2.2 Schedule Allocation

Project schedule can be seen in Table 2.

Date	Project Phases	Project Milestones
Feb 20 - Mar 7	Requirements Elicitation	
Mar 7		Project Presentation by Clients
Mar 10 – Mar 17	Project Planning	
Mar 17 – Mar 27	Requirements Analysis	
Mar 27 - Apr 1		Analysis Review
Apr 1 – Apr 5	System Design	
Apr 5 – Apr 10	Object Design	
Apr 10 – Apr 12	Database Design	Project Review with Client (via Internet &;video conference)
Apr 12 – Apr 14	GUI Design	
Apr 14 – Apr 20	Implementation &;Unit Testing	
Apr 21		Object Design Review
Apr 23		Project Agreement
Apr 23 – May 05	System Integration &;System Testing	
May 10		Internal Project Review (functional prototype)
May 28		Project Acceptance by Client and User Training

Table 2. Project Schedule

5.2.3 Resource Allocation

There are no significant resource allocations for this project apart from staff time.

5.2.4 Budget Allocation

There are no significant cost for this project accept stuff salary. Since the project duration is estimated as 3 months and project will be done with 4 members each has a salary of $5000. The total cost will be $60000. Additional $1000 may be needed for printing the documentations and taxi fees to go to meetings.

5.3 Project Control Plan

This part is responsible to specify the metrics, reporting mechanisms, and control procedures necessary to measure, report, and control the product requirements, the

project schedule, budget, and resources, and the quality of work processes and work products under this section.

5.3.1 Requirements Control Plan

This part of the SPMP specifies the control mechanisms for measuring, reporting, and controlling changes to the product requirements. During development each requirement is divided into small user stories and these stories are extracted with the help of customer. Therefore this will lead us not to misunderstand the customer. Development depends on implementation of this small user stories and validating the implemented part to customer. Such an auto-control for requirements will be used. According to user feedback the implemented user story will either be improved or re-implemented. Nobody can undertake another user story unless he/she finishes the one he/she is actually studying.

5.3.2 Schedule Control Plan

This part specifies the control mechanisms to be used to measure the progress of work completed at the major and minor project milestones, to compare actual progress to planned progress, and to implement corrective action when actual progress does not conform to planned progress. An online project planner tool will be used in order us to control the schedules. Milestones are divided into two parts as big and small ones. Each milestone is stored in this tool as an aim and when they are met this tool will enable us to mark this milestone as fulfilled.

5.3.3 Budget Control Plan

SPMP Budget Control Plan specifies the control mechanisms to be used to measure the cost of work completed, compare planned cost to budgeted cost. Our budget is not much complex since there is no tax and rent for our development team. Therefore only budget control is related to salaries. We will control manually if the total salary is as it is expected during three months.

5.3.4 Quality Control Plan

This part of the SPMP specifies the mechanisms to be used to measure and control the quality of the work processes and the resulting work products. We will use performance tests and acceptance tests for the overall quality of our product. Plan will be not to go further unless these tests give good results.

5.3.5 Project Reporting and Communication Plan

This part specifies the reporting mechanisms, report formats, and information flows to be used in communicating the status of requirements, schedule, budget, quality, and other desired or required status metrics within the project and to entities external to the project. For each of the above reporting will be held. Especially, during development phases we report small design segments. This enables us to remember the past design issues during development.

5.3.6 Metrics Collection

This sub-clause shall specify the methods, tools, and techniques to be used in collecting and retaining project metrics. The metrics collection plan shall specify the metrics to be collected, the frequency of collection, and the methods to be used in validating, analyzing, and reporting the metrics.

5.4 Risk Management Plan

Risk Management plan aims to specify the risk management plan for identifying, analyzing, and prioritizing project risk factors. There are several risk factors during development phase:

Data integrity is an important issue. In other words data must be protected well in order to keep track of applicants correctly. For this purpose a good database management system should be used. We prefer to use Oracle since it is compatible with many servers today.

Another risk factor needs to be handled is the browser compatibility. Since this is web-based product it needs to work properly under at least three well-known browsers such as Internet Explorer, Mozilla and Opera.

Security is another concern that needs to be considered. Privacy of applicants' data is important therefore it needs to be supplied. This is done by making hierarchical structure of users. This means not every department workers will be able to see the applicants' data.

5.5 Project Closeout Plan

This sub-clause shall contain the plans necessary to ensure orderly closeout of the project. Items in the closeout plan should include a staff reassignment plan, a plan for archiving project materials, a plan for postmortem debriefings of project personnel, and preparation of a final report to include lessons learned and analysis of project objectives achieved.

6. TECHNICAL PROCESS PLANS

This section describes the technical solution in terms of a process model and implementation methods, tools, and techniques to be used to develop the various work products, plans for establishing and maintaining the project infrastructure, and the product acceptance.

6.1 Process Model

The project has a phased approach. We have 4 phases which are User Requirement(UR), Design(D), Implementation(I) and Deployment(DP). UR is analysis phase in which we are going to ask questions to the costumer(workers of TUBITAK) to identify the problem better. In design phase, we are going to make the design part of the project by using UML standards. In Implementation phase, our goal is to implement a program which is working although not including all user requirements. and is ready to make a

demo.In deployment part, we are going to deploy latest version JAM to make a demo to the costumers.

However, in this project we are going to use iterative method instead of water-fall approach. We are planning to make small demos to the costumer and by the feedbacks; we are going to modify our program by changing some use cases or adding new ones and do another demo. At each demo our product will grow and include more use cases. This process will continue until we have reached final product that all user requirements are provided. The process can be seen in figure 1.

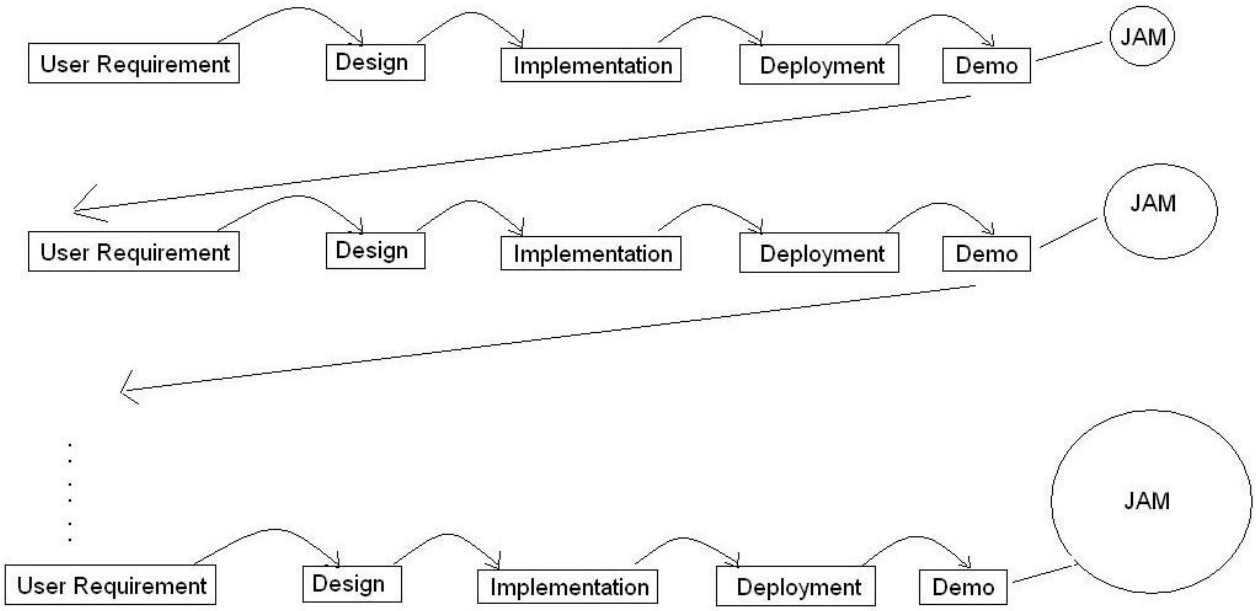

Figure 1. Iterative Plan

6.2 Methods, Tools and Techniques

For the system parts that are concerned with user interaction, i.e. human computer interfaces (HCIs), an *object oriented* technique is applied (OMT) using a *bottom up* approach. The HCIs are implemented in Java (latest version 1.6) .

In addition, NetBeans will be our IDE since NetBeans is a good tool in designing user interface of the program. We are going to use Oracle for storing information of applicants since this tool is compatible with man servers today. Toad tool of Oracle database will be used. Our system shall work on Linux and Windows systems. Milestone reports will be produced electronically and/or as paper document. For electronic documents the use of a word processor is prescribed. Recommended is the use of MS-Word 07. Exchanged documents have to be either in MS-Word format or in PDF. For drawing use case diagrams and other figures, Visual Paradigm Suite 2.3 will be used.

6.3 Project Infrastructure

Software development shall be made on windows machines which are computers of our coders. During developing the program, tests shall be made on our computers. On demos to show the situation of the project, JAM shall be deployed on only a few computers of TUBITAK. Final development shall be made on all computers of TUBITAK that JAM will be used.

6.4 Product Acceptance

The primary objective of the acceptance plan is to accept criteria stated table below.

Function	Acceptance Criteria
Register Customer should be able register into system. Customer must enter here personal details and select login name and password that will be later user for login into admin area.	System must allow for customer select name and password (or say that name already used), and then ask personal details. System must accept correct login name and password and show main user interface.
Open new Open Position Project manager and department should be able to open a new available job.	System must add new open position.
Register New Applicant Applicants should be able to apply for an open position by the system.	System must add the applicant's info to the system.
Search Mechanism Any user of the system can perform a search among the applicants to filter them according to desired data such as GPA, university, department, known foreign language and technical exam result. System will list the names, surnames, university and GPA of applicants. User can make search in list of selected open position or general list or all of them.	System must do the search correctly.
Add comment for a particular applicant Secretary, project manager and department manager should be able to add comment for a particular applicant.	System must add the comments for the applicant.
Update Applicant Info Secretary should be able to change applicants' info.	System must change applicant' info when secretary changes them.
Add New User to System Department manager should be able to add new user to the system. Then, s/he	System must add new user to the system.

should be able to define type of user and give a password which can be changed later by the new user and his/her name and surname. Secret question should be able to empty for beginning.	
Change Password Any user of the system should be able to easily change his/her password in order to prevent the access of undesired people.	System must change the password.
Warning Project managers or department manager should be able to send warning message that warns secretary when s/he enters to the system.	Warning must emerge as a pop-up window with a loud sound that will make the secretary realize it. The window of warning must be always at the top of the screen until secretary cancels it.
Close Open Position Project manager or department manager or secretary should be able to close an open position.	System must take applicants to the general list. However, an applicant may have applied for one or more open position. If the closed open position had any applicant like that, that applicant should not be sent to general list.
Print Applicant's Info Secretary or project managers or department manager should be able to get the printout of any applicant's information when needed.	System must print the applicant's info.

Table 3 Functional Requirements of the Project

7. SUPPORTING PROCESSES

This clause of the SPMP shall contain plans for the supporting processes that span the duration of the software project. These plans include, but are not limited to, configuration management, verification and validation, software documentation, quality assurance, reviews and audits, problem resolution, and subcontractor management.

7.1 Configuration Management Plan

This part of the SPMP contains the configuration management plan for the software project, to include the methods that will be used to provide configuration identification, evaluation, and release management. Configuration identifications are done according to the needs of the customer. Similarly, evaluation is also done with customer but in-team evaluations are also done as frequently as possible. Releases are done as big milestones are achieved. They are scheduled above. Change requests are analyzed during development phases and schedule is updated accordingly. Possible changes might result in missed deadlines. Therefore these observations are done during development frequently.

7.2 Independent Verification and Validation Plan

Verifications are done first via various tests like unit tests and acceptance tests. These will ensure us that we do the right thing. Similarly, verification is done between team members in weekly meetings. Validation is done with the help of customer. There will be biweekly meetings with the customer to validate the parts that is developed. Demos are done for this purpose. At each meeting the milestones that are met is showed to the customer and current status of the development is said to him.

7.3 Documentation

This part of the SPMP contains the documentation plan for the software project, to include plans for generating non-deliverable and deliverable work products. Non-deliverable documentations are generated whenever they are needed. They are not scheduled. However, we are planning to give documents of Software Requirements Specification, Software Design Description and Software Test Documentation which are not scheduled yet. For example, if a design issue is cumbersome then team comes together and solves and documents the solution as future reference. Deliverable documents will be done after each component completion. The general design of the product is documented at the beginning of the process.

7.4 Quality Assurance

Quality assurance plan includes the techniques to test the quality of the current product. Again acceptance tests are used to see if the components are working properly when they are brought together. Additionally, performance tests will be used to see the overall quality in terms of efficiency. Results of these tests are considered frequently and these tests are run daily. If any improvement is needed already implemented parts will be improved before going on to other parts.

7.5 Reviews and Audits

Developers will review the project in weekly meetings. Since there is no external supplier or agencies for this project, no review will be required.

7.6 Problem Resolution

This part of the SPMP specifies the resources, methods, tools, techniques, and procedures to be used in reporting, analyzing, prioritizing, and processing software problem reports generated during the project. Problems are classified according to their importance and priority level. The most important problems are the ones that are related to the nearest milestones. Therefore time is the most important factor to set the priority level of each problem. The priorities of the problems are kept in our scheduler tool and updated when necessary.

7.7 Contractor Management

Since there is no subcontractor for this project, no contractor management plan is required.

7.8 Process Improvement

This part of the SPMP includes plans for periodically assessing the project, determining areas for improvement, and implementing improvement plans. These plans are highly related with the problem resolution and timings of milestones. The general flow of project and fulfillment percentages can be viewed from scheduler in the web. If there is no time bottleneck then improvements and reviews can be done on the current product. This is determined during development process.

8. ADDITIONAL PLANS

After finalizing the project, product installation will take place in TUBITAK. Main part of the system installation is web part, database part and windows application part. We estimated that only a couple of hours is needed for installation of the product.

Since our system based on basic components, no heavy user training is necessary. Project developers will give brief introduction to the users, department manager, project managers, team leader and secretary.

Whenever a professional help is requested by the users of the system, we will support the project for the first year without any cost for customer. However, after the first year, some fix cost will be applied for support and the cost will be determined later.