

Business Process Analysis : Application Management Portal

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Executive Summary

Smith TA is the proposed system described in this document. This application management system will be the one-stop solution for all the assistantship applications applicable throughout Robert H Smith School of business for all business school students. The main functions of the portal will be to automate TA hiring/application process, reduce professor monitoring time, improve TA training process and increase the number of students hired/professors assisted

Agile methodology will be used by the team due to changing requirements of the application process and administrative processes. The entire system will be developed by DataSTX Systems, an outside vendor and will be successfully handed over to the Business School after a short run period of about 30 days from the date of delivery. All sensitive-data and personal information will be strictly protected and DataSTX Systems will be provided with realistic mock data by the Business School. Since the project will be customized to the Business School's needs all the features in the system will be rigorously tested and a thorough demo of the complete system will be documented for all of the stakeholder's and user's benefit. This project is expected to cost a total of \$80,000.00 with a duration of 90 days from planning to implementation. Smith TA stands to be an integral part of the application processing systems in University of Maryland (UMD) at no cost to students and professors. This portal will be viable for the long run in the future and will be a strong foundation to build upon for future applications systems.

Introduction

This project aims to create a business school-wide career TA application system for the University of Maryland (UMD) Robert H Smith School of Business, College Park. This system will be called Smith TA and will serve as a portal for students, alumni, faculty, administrative bodies like (Payroll) interested in and hiring Smith School students for positions of TA(Teaching Assistant), RA(Research Assistant), GA(Graduate Assistant).

System Planning Phase Report

1.0 Client and Industry Background

Robert Smith Business School is a well-respected institution with a proven track record of producing successful graduates. The faculty is composed of experienced professionals with advanced degrees in their fields, providing students with valuable real-world knowledge. The school's career services team is highly effective, with a large percentage of graduates finding employment shortly after graduation with high starting salaries.

DataSTX Systems is all about creating information systems that make businesses run smoother and better than ever before. We've got a talented team of developers and engineers who are all about making custom solutions that fit our client's needs like a glove. Whether we're crunching data, building software, or web applications, DataSTX Systems offers a wide range of services to help businesses stay ahead of the curve in the ever-evolving world of technology.

1.1 Opportunity

The main objective of a portal that manages applications is to ensure hassle-free form filling and processing for all the stakeholders involved for professional employment. As of 2023, the Smith School does not have any formal channel or portal for managing applications for their TA, RA and GA positions. The process is largely manual for all the stakeholders involved, especially for students and professors who encounter a large number of cold mails. To minimize chaos and the flurry of emails being sent around there is an urgent need of an application management portal that will be centralized and be connected to Testudo and Canvas for all Smith School students with a separate application dashboard showing vacant and filled positions

1.2 Project Objective

The main objective of Smith TA is to connect students and professors to facilitate the job search process. Once implemented, Smith TA will act as a central database for assistantship job postings, payroll processes, scheduling working hours and a monitoring application.

1.3 Scope of Work

SmithTA will be used throughout the Smith School and will be always accessible as a web portal/application. All enrolled students, even the incoming accepted students and professors will be able to use this portal as per their needs. Maintenance and upgradation of a rich UI/UX will occur quarterly and Smith school personnel will be allowed to manipulate data from the backend. As a measure to keep the system robust, all applications dated 4 years from the date of submission will be transferred to a separate master database to create an employment history record, ensuring that all the CRUD operations of the database associated with the system remain efficient.

Furthermore, this system can be scaled and used as a centralized portal to access all student-based hiring needs of the University of Maryland (UMD), instead of having individual schools within the university having their separate portals.

2.0 Project And System Requirements

To determine the necessary requirements for the system, the team held an interview with Dr. Sujin Kim, who coordinates the TA application process. Currently, she is emailed directly by students interested in becoming TAs and professors seeking TAs for their upcoming classes. Dr. Kim sends the prospective TAs a google form to fill out. The input of the form is linked to a google sheet which she sends to the professors seeking TAs. However, this list is not updated as TA positions are filled or student availability changes, so professors need to inquire of Dr. Kim what students are still available. The process of determining eligibility is non-standard: the professor may email the career centers of each college in order to assess current capabilities and possible improvements. During these interview days, members of the team took the time to speak to incoming students seeking career consultation at the career centers as a brief informal interview.

2.1 Business Requirements

1. Automate TA hiring/application process.
2. Reduce professor monitoring time.
3. Improve TA training process.
4. Increase the number of students hired/professors assisted.

2.2 User Requirements

1. Prospective TAs, RAs, GAs

- Login with SSO - To ensure that the user has to access multiple applications(Testudo, Canvas, HR System) or systems using a single set of login credentials. Only UMD credentials are accepted.
- Submit applications - Capturing basic personal information, uploading transcripts and contact information(number, umd.edu mail, UID) and resume submission along with preference and interest on the choice of subjects.
- See available positions - A dashboard with a search that will show no. applications open, no. of applications filled, no. of applications in process, no. of vacant positions, no. of positions filled. Users will be able to view all metrics/ volume of applications in the queue and their separate personal metrics.
- Update availability/resumes/interest - Able to edit form and able to visualize admission results from the dashboard.
- Accept positions/interviews - Electronically accept positions, sign documents regarding the hiring process, grant consent for viewing time schedule.
- Submit payroll info and Consent forms - Direct integration with the UMD payroll department for filing up of TAX forms, SSN requirements and getting the Letter of Endorsement from ISSS and other University Departments.
- Indicate available hours - Direct integration with Testudo to schedule working hours. This will be available to be viewed upon consent from the student to the hiring professor, to reduce time conflicts.

2. Professors and Academic Staff

- Login with SSO - To ensure that the user has to access multiple applications(Testudo, Canvas, HR System) or systems using a single set of login credentials. Only UMD credentials are accepted.
- Post vacancies - Allow employers to post vacancies with job descriptions, minimum qualifications required, eligibility criterias and interest.
- Visualize ideal candidates - employers will be able to search with multiple filters to see their best fit/ ideal candidates applications. They will also be able to sort and rank based on various criteria.
- Employment work history - Allow employers to see if the student has already worked for other professors/ jobs inside the university system. This will only be limited to the work done by the student after enrolling in the university.
- Dashboard for submitted applications- Employers should be able to view the job they have posted, applications submitted to them against the particular job. No. of positions that have been filled and which students are working under their supervision.
- Request Interview/Hire - After the employer has decided on a candidate, they will be able to request an online interview along with a request to hire if the interview is satisfactory.
- Send info to payroll - Employers will be able to send the offer letter directly to the student and other departments like the payroll department and ISSS(International Student Services) for other administrative work.

- View available hours - After Permission is granted by the student to view their time schedule, the employer can see the students available hours and timings.

3. Department Heads

- Approve /Deny Hiring Requests - According to the administrative process, after finalizing the ideal candidate the employer needs to seek approval from the Department heads for a go-ahead. After the approval the payroll process and HR process can begin.
- Receive notifications of new requests - For every approval request the Department heads will receive a notification from the employer.
- See summary/analytical reports of past hires- Will be able to view a dashboard with metrics of the past and present heires and how many TAs, RAs and GAs are hired, annually.

4. HR (Human Resources)

- Process payroll info - Process student financial information as per the UMD administrative process.
- Securly manage TAs, RAs and GAs financial information.

2.3 Functional

1. Process

- Filter students by availability/qualifications.
- Notify students of selection/interviews. - Notify the dept head of hiring requests.
- Notify professors of new applicants.
- Request training module added to students' Canvas upon hire.
- Create payroll report and send it to HR upon hire approval.
- Request time schedule approval of testudo.
- Display the hours/duration the student is hired for.
- Search bar with filters for candidates and employers.

2. Informational

- Class schedule: get from testudo/MPO- scheduler.
- Past TA information to be displayed for a certain time - until after graduation.
- Prerequisites of hiring process for domestic and international students. - Payment information on hourly basis by different departments.

2.4 Nonfunctional

1. Languages: English, French, Spanish, Chinese
2. Allow non-smith teachers to view Smith school candidates to be hired for positions outside Smith School like school of Engineering, School of Computer Science etc.
3. Monitor and upgrade system response speed limit.
4. Personal data security of candidates and employers.
5. Compatible with windows & mac, mobile OS and platforms

3.0 Project Methodology: Agile Methodology

We intend to use agile methodology to develop our web portal.

3.1 Justification

Agile methodology is the preferred choice for developing this application, given its ability to adapt to changing circumstances, the high degree of collaboration involved, the incorporation of customer feedback, and quickly producing results. Comparison to other development models is as follows:

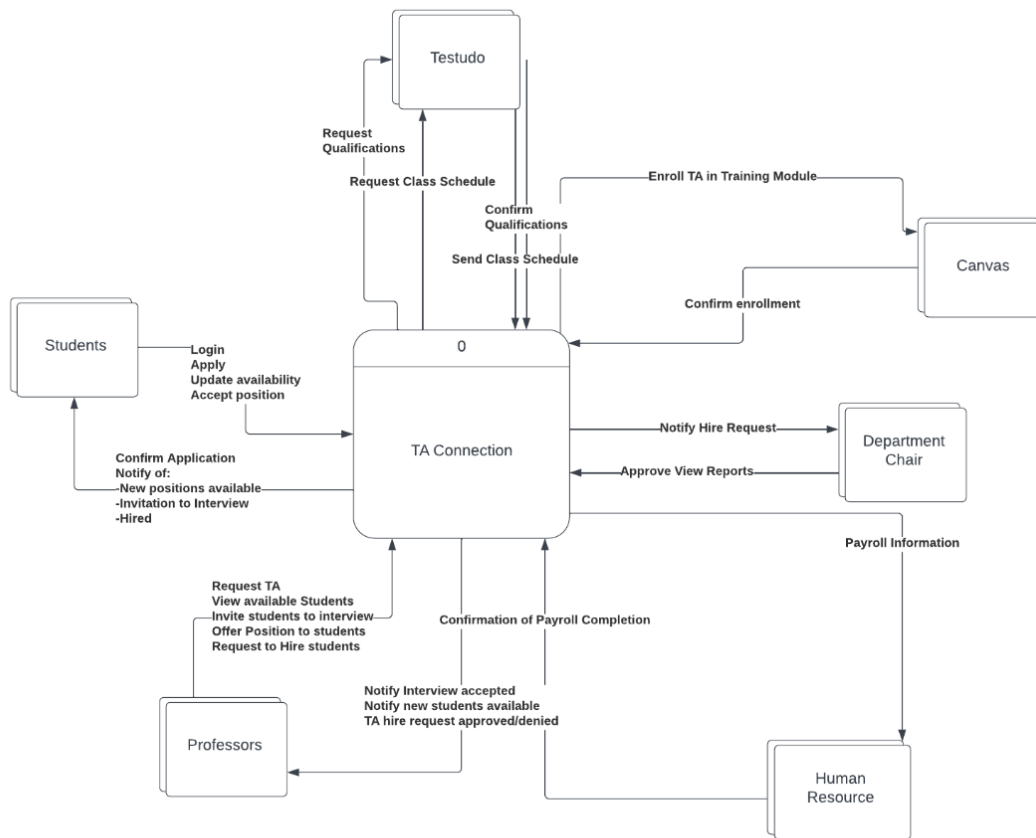
Ability to develop systems with...	Waterfall	Agile Development	System Prototyping
Short Time Constraint	Poor	Excellent	Excellent
Team Communication and Collaboration	Average	Excellent	Good
Flexibility/Adaptability	Poor	Excellent	Good
Unclear/ Changing User Requirements	Poor	Excellent	Excellent

4.0 Project Plan

WBS	Name	Duration	Start	Finish
1	☐ SmithTA	90 days	4/5/23 8:00 AM	8/8/23 5:00 PM
1.1	☐ Planning	4 days	4/5/23 8:00 AM	4/10/23 5:00 PM
1.1.1	Project Initiation Meeting	2 days	4/5/23 8:00 AM	4/6/23 5:00 PM
1.1.2	Communication Plans	2 days	4/7/23 8:00 AM	4/10/23 5:00 PM
1.1.3	Team Appointment and Delegation	2 days	4/7/23 8:00 AM	4/10/23 5:00 PM
1.1.4	Identify Stakeholders	2 days	4/7/23 8:00 AM	4/10/23 5:00 PM
1.2	☐ Collect and analyze client requirements	15 days	4/11/23 8:00 AM	5/1/23 5:00 PM
1.2.1	☐ Identify Requirements	7 days	4/11/23 8:00 AM	4/19/23 5:00 PM
1.2.1.1	Department Requirements	7 days	4/11/23 8:00 AM	4/19/23 5:00 PM
1.2.1.2	Faculty Requirements	7 days	4/11/23 8:00 AM	4/19/23 5:00 PM
1.2.1.3	Student Requirements	7 days	4/11/23 8:00 AM	4/19/23 5:00 PM
1.2.2	☐ Department annd Payroll Integration Analysis	8 days	4/20/23 8:00 AM	5/1/23 5:00 PM
1.2.2.1	Develop and Approve Use Cases	8 days	4/20/23 8:00 AM	5/1/23 5:00 PM
1.3	☐ Design user interface and application layout	55 days	4/20/23 8:00 AM	7/5/23 5:00 PM
1.3.1	Design website layout	5 days	4/20/23 8:00 AM	4/26/23 5:00 PM
1.3.2	Develop front-end design	10 days	4/27/23 8:00 AM	5/10/23 5:00 PM
1.3.3	Develop back-end design	15 days	5/11/23 8:00 AM	5/31/23 5:00 PM
1.3.4	Develop database for applicant information	15 days	6/1/23 8:00 AM	6/21/23 5:00 PM
1.3.5	Develop master database for storing applicant history	10 days	6/22/23 8:00 AM	7/5/23 5:00 PM
1.4	☐ Testing of application system	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.4.1	Perform unit testing	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.4.2	Perform system testing	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.4.3	Perform performance testing	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.4.4	Perform user acceptance testing	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.4.5	Fix bugs & performance issues	7 days	7/6/23 8:00 AM	7/14/23 5:00 PM
1.5	☐ Deployment and Implementation	10 days	7/17/23 8:00 AM	7/28/23 5:00 PM
1.5.1	Deploy application system to production	3 days	7/17/23 8:00 AM	7/19/23 5:00 PM
1.5.2	Train stakeholders on the system	3 days	7/20/23 8:00 AM	7/24/23 5:00 PM
1.5.3	Track Application Performance	2 days	7/25/23 8:00 AM	7/26/23 5:00 PM
1.5.4	Gather Feedback	2 days	7/27/23 8:00 AM	7/28/23 5:00 PM
1.6	☐ Maintenance and Support	7 days	7/31/23 8:00 AM	8/8/23 5:00 PM
1.6.1	Provide technical support for the system	7 days	7/31/23 8:00 AM	8/8/23 5:00 PM
1.6.2	Perform regular maintenance checks	7 days	7/31/23 8:00 AM	8/8/23 5:00 PM
1.6.3	Perform any software updates	7 days	7/31/23 8:00 AM	8/8/23 5:00 PM

5.0 Data Flow Diagrams

5.1 Context Diagram



External Entities:

- **Students:** Candidates for TAs, RAs and GAs positions
- **Professors:** Represents a current professor who is looking for TAs, RAs and GAs
- **Testudo:** Course Registration and Grade Report System
- **Canvas:** A web-based learning management system used to train TAs, RAs and GAs
- **Department Chair:** Must approve all TAs, RAs and GAs hiring decisions
- **Human Resource:** External Department that enrolls TAs, RAs and GAs in the payment system

5.2 Level 0 Diagram

