

**PolyFace Dashboard**

**Software Engineering Standards**

**Project Management Plan**

**Version 2.1**

Document Number: SPMP-001

Project Team Number A5

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**REVIEW AND APPROVALS**

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**REVISION LEVEL**

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| --- | --- | --- |
| **Date** | **Revision Number** | **Purpose** |
| December 3rd, 2012 | Version 1.0 | Initial Release |
| February 19th 2013 | Version 2.0 | Updated SPMP with updated information |
| February 21st2013 | Version 2.1 | Fixed some faults in the documentation |
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**1. OVERVIEW**

**1.1 Project   
Summary**

**a.** The NYU-Poly campus is one with a great deal of potential to form a strong community bond. Everyone in our group is a part of an NYU-Poly organization, and we believe that one reason our events held on campus don’t receive much attendance is because there is no one known source for people to go and find out where the next on campus or off campus event is occurring. We are motivated by the need to consolidate event information into one main location; by the need for up-to-date information on what’s going on about the NYU-Poly Campus. In building this dashboard, we will be able to gather more student interest for on campus events, as well as possibly increase student participation. These end results motivate us to want to build a reliable product that will serve our Poly Community in the most convenient of ways.

**b.** The purpose of this document is to outline the project plan for the development of the Poly Dashboard. This document is intended for planning and scheduling purposes, and will be used to summarize the deliverables expected from Team A5.

**c.** The primary audience for the SPMP is the project advisor, Fred Strauss, as well as the Team A5 that consists of Basia Bowens, Wendy Lau, and Wayne Jones. This document will serve as a guide to the development team.

**1.2 Purpose,**

**Scope, and**

**Objectives**

The purpose of the PolyFace Dashboard is for it to be used by the NYU-Poly Community to gain access to an array of Poly social and academic events, a series of reminders, as well as a source for students to see what free items are available on campus. The dashboard will allow different clubs and organizations to post their events on the dashboard; the academic events listed will include all academic events listed in the school calendar; as well as tutoring sessions available on campus, and free item opportunities. In building this dashboard we will have successfully consolidated the many methods of event and reminder social broadcasts into one main source. With the “PolyFace” students will be able to keep up to date on upcoming events that pertain to their interests, therefore increasing student attendance and also improving student life.

**1.3 Assumptions**

**and Constraints**

The dashboard to be built is assumed to be a software project, and will be built on the standards set forth by the documentation that has been written thus far for the project. Constraints that will be limiting the developer’s options will be deadlines, reliability, and safety and security. Deadlines are a part of every project that developers usually stress to meet. If deadlines are not met, the project cannot run efficiently and smoothly. Reliability of our product depends on both developers and user feedback. Developers are expected to produce a product that meets the clients’ needs which in this case, is to provide users of the university with accurate information and interaction opportunities. This can be done most proficiently with user feedback and metrics. Safety and security

is one of the most critical constraints of a project, especially in web development. With an expected number of users, we must be able to protect user’s personal information and also assure that the dashboard environment will not be harming. The budget will be the greatest constraint placed on the project. The team will have to plan according to the budget, in order to make sure that the project has the means to be completed.

**1.4 Project**

**Deliverables**

Requirements Analysis Specification (RAS): 3/05/2013

Design Description (SDD): 3/06/2013

Design Document Final (w/ Initial Code): 3/27/2013

Implementation/ Demonstration: 4/22/2013

**1.5 Schedule and**

**Budget Summary**

* Implement Project ( April 22nd, 2013)
* Testing, Walkthrough, Inspection ( Spring 2013 Semester, a more Specific Date to come)
* Project Presentation ( Last two weeks of the semester, a more Specific Date to come)

**2 EVOLUTION OF THE PLAN**

As the system development process proceeds, changes to the documentation are inevitable, and highly necessary because in essence the documentation “is” the product. The SPMP document will be changed in future versions to display the changes in scheduling, budget, & managerial practices. The biggest change expected to appear in future documents is to the schedule. To improve the effectiveness of the product, client’s may request changes and additional modifications which will ultimately affect the SPMP.

**3 REFERENCES**

PolyFace, Project Proposal, Version 1.1, February 5th, 2013  
PolyFace, SRS, Version 1.0 (initial), October 23, 2012

PolyFace, SRS, Version 1.1 (final), October 26, 2012

**4 DEFINITIONS**

Guest – visitor to dashboard that is not approved to post on dashboard without permission

Moderator – runs dashboard and approves guest posts

Subscriber – an approve dashboard member that posts to the dashboard without all the overhead that a guest has

**5 PROJECT**

**ORGANIZATION**

**5.1 External** **Interfaces**

The Software Quality Assurance group would be one of the external interfaces as they will be testing and checking the software along with the team. The manager is an external from the team, as he oversees the other side of the project development project where it isn’t that focused on code development. The World Wide Web is an external interface that will host our dashboard.

**5.2 Internal** **Structure**

The group structure is that of a Democratic Team. There is encouragement to find faults in the code of others, and the goal is to not allow egos to get in the way of the group putting together the best possible product as possible. We have done valid research to determine that, for our group dynamic, that this is the best possible approach that our group can take.

**5.3 Roles and** **Responsibilities**

1. The Advisor- Looks over the documents provided for the project, sets the deadlines/due dates, grades performance, suggests corrections to be made on submitted work, oversees all work done b group.

2. The Team Members/ Authors - Writing the documentation for the project, handing in all documents on time, making changes to documentation based on advisor feedback, writing all code for the project, putting together a project plan for the project, making the appropriate appointments to meet with one another, complete the project.

3. The Client - Looks over product, and confirms (along with referencing the analysis document) that it does exactly what they requested the product to do, give feedback.

**6 MANAGEMENT**

**PROCESSES**

**6.1 Start-Up Plan**

***6.1.1 Estimation Plan***

For the estimation of cost, resources, risk factors, and scheduling, we used the Delphi method. Each member separately inputs their estimates onto a shared spreadsheet which can be updated up until the date of the group meeting. At the group meeting the estimates are reviewed and a consensus is reached on all figures.

***6.1.2 Staffing Plan***

***(Team already acquired)***

The current staff consists of 3 students:

-2 Computer Science Majors

-1 Computer Engineering Major

The skill level required and exists on team:

* 2+ years of programming experience
* HTML, PHP, CSS, Photoshop, SQL
* Time Management
* Basic principles of object oriented programming
* Team Player

***6.1.3 Resource Acquisition Plan***

The Resource required for the dashboard are mainly open source except for:

-owning domain name

-hosting

-Photoshop

Other resources include:

-PHP

-HTML

-CSS

-SQL

The plan is to get hosting and purchase a domain through GoDaddy.com who offers fairly cheap services.

|  |  |
| --- | --- |
| ***6.1.4*** | ***Training Plan*** |

Number of staff to be trained: 1

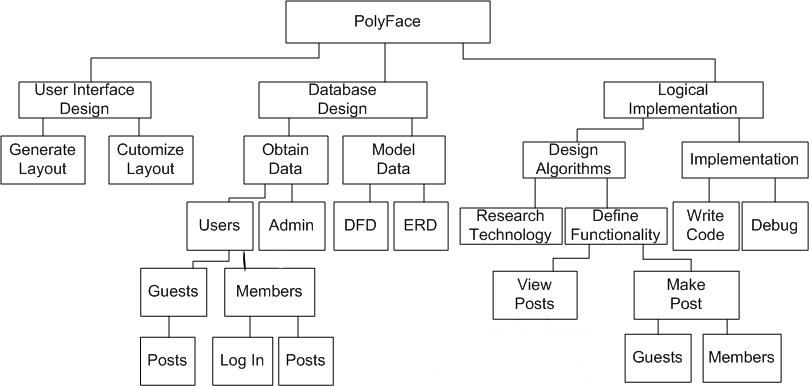
Entry criteria: 2+ years of programming experience

Exit criteria: Basic understanding of ER diagrams, HTML, SQL, PHP, project planning

Training method: Self-study and then test by prototype

**6.2 Work Plan**

***6.2.1 Work Activities***



***6.2.2 Schedule Allocation***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Task | Jan | Feb | March | April | May |
| Generate Layout |  |  |  |  |  |
|  |  |  |  |  |  |
| Customize  Layout |  |  |  |  |  |
|  |  |  |  |  |  |
| Model Data |  |  |  |  |  |
|  |  |  |  |  |  |
| Obtain Data |  |  |  |  |  |
|  |  |  |  |  |  |
| Research Technology |  |  |  |  |  |
|  |  |  |  |  |  |
| Define Functionality |  |  |  |  |  |
|  |  |  |  |  |  |
| Write Code |  |  |  |  |  |
|  |  |  |  |  |  |

***6.2.3 Resource Allocation***

*Note: MS = Microsoft*

|  |  |  |
| --- | --- | --- |
| Activity | Amount | Resources |
| Generate layout | 1 | Jr. Web Developer,  MS Visual Studios 2012 |
| Customize layout | 1 | Jr. Web Developer,  MS Visual Studios 2012 |
| Data Flow Diagram | 1 | Jr. Database Administrator, MS Visual Studios 2012, phpMyAdmin, WAMP server |
| Entity Relationship Diagram | 1 | Jr. Database Administrator, MS Visual Studios 2012, phpMyAdmin, WAMP server |
| Log in | 1 | Jr. Database Adminstrator,  MS Visual Studios 2012, phpMyAdmin, WAMP server |
| Post::Members | 1 | Jr. Database Adminstrator, MS Visual Studios 2012, phpMyAdmin, WAMP server |
| Post::Guests | 1 | Jr. Database Adminstrator, MS Visual Studios 2012, phpMyAdmin, WAMP server |
| Subscribers | 1 | Software Developer,  MS Visual Studios 2012 |
| Moderators | 1 | Software Developer,  MS Visual Studios 2012 |
| Guests::view posts | 1 | Software Developer,  MS Visual Studios 2012 |
| Guests::post approval | 1 | Software Developer,  MS Visual Studios 2012 |
| Members::post approval | 1 | Software Developer,  MS Visual Studios 2012 |

***6.2.4 Budget Allocation***

|  |  |  |
| --- | --- | --- |
| ***Project Budget*** | | |
| ***Item*** | ***Cost*** | ***Quantity*** |
| ***Hosting Services*** | ***$2.00 per month*** | ***3*** |
| ***Domain Name Ownership*** | ***$10.00 per year*** | ***1*** |
| ***Adobe Photoshop*** | ***Free (already owned)*** | ***3*** |
| ***Database Space*** | ***$2.00 per month*** | ***3*** |
|  |  |  |
|  |  |  |
| ***Total cost*** | | |
| ***$22.00*** | | |

**6.3 Control Plan**

***6.3.1 Requirement***

***Control and Traceability***

The original product requirements documentation is saved and any revision to it will be saved as [Document Name]rev[revision number]. All revisions must first be submitted for approval prior to its completion. In order for the revision to be approved, a prototype of the intended change(s) must be submitted along with a chart of all the impacted areas with the degree to which they will be impacted, and a description of why the revision is necessary. In the chart that will be used to complete impact analysis, special attention will be paid to time and cost.

***6.3.2 Schedule***

***Tracking and***

***Adjustment***

Schedule tracking will be done with Microsoft Project Planner(MPP). MPP comes with built in functionality that compares the planned to the actual progress. The team will meet on both the actual and the planned milestone date to discuss possible adjustments that must be made in order for it to be completed soon, or to review the requirements of the component in order to come to a decision on whether or not the current deliverable is acceptable.

***6.3.3 Budget Tracking***

***and Adjustment***

There have been no purchases made recently so the budget stands at $0.

|  |  |
| --- | --- |
| Budget Tracking | |
| Purchased | Total |
| N/A | $0 |
|  |  |
|  |  |
|  |  |
|  |  |

***6.3.4 Quality Control***

Quality control will be implemented by continuous desk checks along with walkthroughs that are carried out after the completion of each milestone.

***6.3.5 Reporting Mechanisms***

The reporting mechanisms that would be used in this project will be a backend report of usage for each user. The backend will contain reports of the number of event posts each user has submitted, the events each user is subscribed to, and groups they are part of. For future iterations of our project, we will have all of this data exported in an easy to read spreadsheet. Also since this is a web based dashboard, in future iterations we will also have usage information based on the number of clicks for hyperlinks, and subscription stats.

***6.3.6 Metrics***

***Collection Plan***

Duration and productivity will be collected and retained through MPP. Productivity will collected by the comparison of the planned dates to the actual dates. Defects will be classified according to severity, location, and type, and will be documented and retained by the SQA group. Communication will be measured by how many messages are sent in reference to each topic. Both the total amount of messages will be documented as well as the total amount of topics discussed. Quality will be measured by how many of the requirements are met. If all the requirements are met, then the product will be rated 100% for quality. Cost will be measured by how much many is spent in order to obtain and retain the resources that are allocated. All costs will be recorded on a spreadsheet which will be verified by the entire team, at the time of the project's completion.

***6.4 Risk Management Plan***

**Process:**  
The Project Manager will work with the project team to ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project to mitigate the risk factor associated with it. The steps for accomplishing this are outlined in the following sections. The Project Manager will serve as the Risk Manager for this project.

**Roles and Responsibilities:**

|  |  |
| --- | --- |
| **Roles** | **Responsibilities** |
| Risk Manager or Project Manager (PM) | The Risk Manager or Project Member is a member of the Integrated Project Team (IPT). The Risk Manager or PM determines if the Risk is unique, verifies if risk is internal or external to project, and assigns risk classification. During the life of the project, the project manager will continually monitor the projects for potential risks. In addition, the PM is the sole person that determines whether a risk requires mitigation and contingency plans. |
| Integrated Project Team (IPT) | The IPT is comprised of the Project Team Members as well as members of the Software Quality Assurance (SQA) team. The IPT is responsible for identifying the risks, the dependencies of the risk within the project, the context and consequence of the risk. They are also responsible for determining the impact, timing, and priority of the risk as well as formulating the risk statements. |

**6.5 Post Implementation Plan**

All the documents for this software will be backed up before post-implementation and termination. If a different version of this software is developed post-implementation, that project team will be able to reference our previous documents and software code to develop their platform.

**7 TECHNICAL PROCESSES**

**7.1 Process Model**

For our process, we will be adopting a Object Oriented Methodology (OOM) where our core software components and documentation can be reused for future iterations of our software. With this methodology, our software system can be developed on a component basis that enables the effective re-use of existing components and facilitates the sharing of its components by other systems. By adopting to OOM there will be higher productivity, low maintenance costs and better quality.

**7.2 Methods, Tools,**

**and Techniques**

By using the Unified Process as a framework, we will develop our project into a iterative and incremental process. Use cases will be used to capture the functional requirements and to define the contents of the iterations. Each iteration takes a set of use cases or scenarios from requirements all the way through implementation, test and deployment.

Some of the tools that we will be using will be Microsoft Project to manage the lifespan of the project. We will also be using an Integrated Development Environment (IDE) where we will be able to edit source code, build automation tools, and debug for any bugs or defects within our software. In addition, we will be using Google Drive to backup and maintain documentation. Google Drive will also serve as a version control system therefore if there is a reason to go back to a previous version of a document, it can be easily recovered.

**7.3 Infrastructure Plan**

**Physical Facilities / Workstation Initialization**

Since this is a small scale project, there isn’t a physical facility to work in. Each team member will work on their individual laptop/workstation. Each programmer will contribute to the software project by creating modules for the software. Only one programmer will have the master copy of the software and all modules will be submitted to that programmer. We will then use Peer Checks/Review to inspect each other’s code for any bugs or inconsistencies

**7.4 Product Acceptance and Migration Plan**

This section includes planning for the acceptance of our product and a migration plan in preparation to deploy our product. Code walkthroughs and inspections will be the initial steps we take for product acceptance. An overview of the document is to be inspected. A participant of the inspection will walk through the document ensuring every item is covered along with a written report summarizing the inspection. The individual will be responsible for correcting all faults and problems. The plan revolves around the Quality Assurance Run. If any new code is added into the project, integrating testing must be performed. This test involves testing new code artifacts and ensuring the project behavior acts the same and as desired. Then, the team will perform a product test which includes commercial off-the-shelf (COTS) software and custom software. The aim of COTS is to ensure the product performs as it should without any faults. The custom software is where the SQA group will perform a number of testing tasks to ensure there is not any failure.

Acceptance testing will follow where the client determines whether or not the product is satisfactory to their original specifications. Done by either the client organization, our SQA group, or an individual SQA group hired by the client, a series of correctness testing, performance test and robustness tests will be performed. The four major components to be tested are the two as mentioned along with performance and documentation. When the product has passed its acceptance test, the team will move forward with the migration plan.

**8. SUPPORTING  
PROCESSES PLAN**

**8.1 Configuration**

**Management Plan**

This section briefly describes the configuration management plan of the team. It will include the methods and procedures of the plan performed by the Change Control Board and Configuration Manager.

**Configuration Identification Method:**

The configuration identification method will consist of identifying the appropriate items to place under the configuration control with their unique identifications. There will also be a procedure to place the item into their respective and appropriate libraries.

**Configuration Control Method:**

Change requests such as changes to a configuration item will be requested through PolyFace’s management team. Any changes made will be evaluated based on risk vs. benefits, budget, schedule and affect/impact on other configuration items. Approval or rejection to change a configuration item will be made by the PolyFace Change Control Board. Only when the change is approved can the configuration item take place.

**Status accounting method**

The following data will be available for each configuration item for inspection:

* Most recent approved version of the configuration item
* Control status of the configuration item
* Implementation status of the configuration item

**Evaluation Method**

Evaluation of changes will be processed by the PolyFace Change Control Board. The board committee will consist of appropriate team members.

**Release management method**

Releases are to be defined in the configuration management system by the manager of the team.

**Baseline of Work Products**

The Procedure to baseline a configuration item is as follows:

|  |  |  |
| --- | --- | --- |
| **Step** | **What** | **Who** |
| 1 | Label the baseline version of the configuration item according to respective naming conventions | Configuration Manager |
| 2 | Project the baseline to the team | Configuration Manager |

**Procedure for change logging**

For documentation purposes and for a change request to be processed, it must be logged into the configuration management system. The procedure is as follows:

|  |  |  |
| --- | --- | --- |
| **Step** | **What** | **Who** |
| 1 | Enter and submit request with details of the change | Change Requester |
| 2 | Review change request and review in detail whether it is acceptable to be approved | Configuration Manager |

**Procedure for Review of Changes**

The Change Control Board must review the change before it can be implemented. The procedure to do so is as follows:

|  |  |  |
| --- | --- | --- |
| **Step** | **What** | **Who** |
| 1 | Review Change request | Change Control Board |
| 2 | Approve/Reject Change Request | Change Control Board |
| 3 | Update Change Request Status to Approved or Rejected | Configuration Manager |

**8.2 Qualification   
(Verification and Validation)   
Plan**

This section briefly describes the qualification (verification and validation) approach which includes identifying the scope, tools, techniques and responsibilities for qualification work activities.

**Scope**

The validation and verification that will be performed on the work product will consist of the software requirements, architecture, interface design and database design. Inspections and reviews of the product will also formally take place.

**Tools and Techniques**

Traceability will be used to trace the existence of other requirement phases. Using this technique will avoid redoing the same work. Tracing will be a technique used during software inspections to ensure that work products are meeting goal requirements set by the predecessor document.

Peer reviews will be held during the process of the work product.

The Software Test Plan will be a deliverable from the team to propose a plan for testing the product

**Responsibilities**

The responsibilities of the verification engineer consist of managing the responsibilities of their own and the validation engineer’s work as well as the overall outcome of their activities.

**8.3 Documentation**

**(library) Plan**

This section provides the documentation plan for the software project.

The deliverable contents are as follows:

· Document

· Preparer

· Reviewer

· Baseline Version

· Distribution list

**8.4 Quality**

**Assurance Plan**

This section provides a quality assurance plan to assure that the product fulfills its commitments to the software process and the product as specified in the requirements.

**Reviews**

Quality reviews will be done by the project manager, quality analyst and configuration manager to ensure documentation products reach the standards previously mentioned in section 7.3.

Quality reviews will take place after the product has been delivered for development summaries and future improvement ideas.

**Audits**

If requested, informal audit procedures will be performed during software testing and integration phases. The process will be documented for future reference.

**8.5 Reviews and**

**Audits**

This section will provide the schedule, resources, methods, and procedures used in conducting project reviews and audits.

Reviews:

· Supplier Review

· Management Progress Review

· Developer Peer Review

Audits:

· Quality assurance Audits

**8.6 Problem**

**Resolution Plans**

All problems should be reported directly to the project manager for appropriate actions to be taken. The problem will be analyzed to determine the risk rate as well as the impact on the project.

A designated team will be formed to manage the problem and to determine steps in resolving the issue.

Problems will be prioritized as:

* Critical- Problem in critical condition is the highest priority- It has or will impact the project deliverable time
* High- If problems in high priority are not resolved as soon as possible, the critical path will be affected
* Medium- Medium priority problems is not expected to impact the critical path
* Low- Low priority problems have the least impact and will not affect the critical path

**Roles**

The following are roles of each team member that will approach a solution to reported problems

|  |  |
| --- | --- |
| Team Function | Roles |
| Project Manager | · Recipient of report problems  ·Documents summary of progress  · Manages the process of resolving issues |
| Quality Analysts | ·Provide access to deficiency or quality reports that led to the problem |
| Configuration Managers | · Analyzes impact of problem with knowledge of configuration items |
| Others | · Participates when needed to contribute to problem resolution |

**8.7 Environment Management Plans**

The development and test environment will involve working on a sever side website for testing and development of the PolyFace Dashboard. Research and development will be on the back-end server. Future iterations of our software will be developed on a separate sever host from our live PolyFace Dashboard.

On our testing server, we will test future iterations of our software for bugs and other inconsistencies. After testing and ensuring that our software product is ready to be pushed to the live server, the version of our PolyFace Dashboard will be upgraded.

The developers on our testing server will be our project team who will be working on future iterations of our software. Management will be handled by our project manager who will assess the benefits and risks of the future version of our product.

**8.8 Process Improvement Plan**

The goal of this process improvement plan is to identify areas for improvement and minimizing work that needs to be done during the life cycle. The software engineering capability maturity models (CMM) will be used to focus on improving the software process. The model includes five levels of mature levels which determine the goodness of the process. We look to work on Maturity Level 5, also known as the optimizing level. This level or organization is a continuous process improvement which is surely a benefit to our product in the long run. Statistical quality and process control techniques are used.

The process improvement plan will work closely with the problem resolution plan. We will ensure the problems arose will not repeat itself as we find the best solutions. This will significantly reduce the work to be done. The team will review areas of the product that can be improved individual and as a product whole.

**13. APPENDICES**

**13.1 Schedule Tracking**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Artifact/ Deliverable** | **Who** | **Estimated** | **Actual** | **Difference** |
| SPMP | Basia Bowens | 3 hours | 3 hours | 0 hours |
| SPMP | Wendy Lau | 2 hours | 3.5 hours | 1.5 hours |
| SPMP | Wayne Jones | 3 hours | 4 hours | 1 hour |

**Cumulative Totals**

|  |  |  |  |
| --- | --- | --- | --- |
| **Who** | **Estimated** | **Actual** | **Difference** |
| Basia Bowens | 3 hours | 3 hours | 0 hours |
| Wayne Jones | 3 hours | 4 hours | 1 hour |
| Wendy Lau | 2 hours | 3.5 hours | 1.5 hours |

**13.2 Defect Tracking**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Artifact/ Deliverable** | **Who** | **Estimated** | **Actual** | **Difference** |
| SPMP | Basia Bowens | 2 |  |  |
| SPMP | Wendy Lau | 2 |  |  |
| SPMP | Wayne Jones | 3 |  |  |

**Cumulative Totals**

|  |  |  |  |
| --- | --- | --- | --- |
| **Who** | **Estimated** | **Actual** | **Difference** |
| Basia Bowens | 2 |  |  |
| Wayne Jones | 3 |  |  |
| Wendy Lau | 2 |  |  |

**13.3 Gantt Chart/Microsoft Project Schedule** 