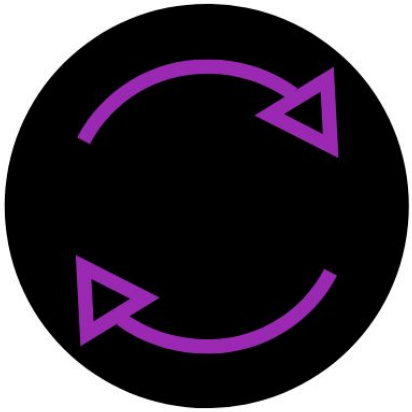
Smallworlds Web Application (SWAP): Technical and Economical Feasibility Study



Technical Feasibility:-

1. Users' and analysts' familiarity with the business area:
Right now, our team is composed of two developers with prior experience in developing for the web as well being active volunteers in different humanitarian engagement projects. As such, we believe our team is highly apt at delivering this tool in a timely, successful manner.

2) Familiarity with technology:
The technical tools we are going to use are:

- Programming languages:
    - Python
    - Javascript
    - HTML
    - CSS

- Database Management System: MySQL
- Deployment: Amazon Web Services or Heroku
- Web Frameworks:
    - React.js
    - Django
    - Bootstrap

Both developers have prior experience working on all of the aforementioned except React.js. As such, we expect that there will be a learning curve involved in grasping that technology.

3) Project Size:

We expect to produce anywhere between 1000-1500 lines of code in total. Although this seems like alot, the web frameworks described above are going to aid us in the code generation process. In addition, we expect this project to be delivered in 1 month with a team of two developers.

Below is a function point metric measurement of our system, where we focused on the data processing operations our system needs to be able to handle based on the functional requirements specified in the Software Requirement Specification paper.:

Function Point Worksheet								
				Weighting Factor				
Measurement parameter	Count		simple	average	complex	Choice		
# of user inputs	5	X	3	4	6	3	=	15
# of user outputs	5	X	4	5	7	4	=	20
# of user inquiries	3	X	3	4	6	3	=	9
# of files	6	X	7	10	15	7	=	42
# of external interfaces	2	X	5	7	10	5	=	10
						Count-total =		96
Rate each factor on a scale of 0 to 5:		0 - No Influence		1 - Incidental		2 - Moderate		
		3 - Average		4 - Significant		5 - Essential		
1. Does the system require reliable backup and recovery?								5
2. Are data communications required?								5
3. Are there distributed processing functions?								1
4. Is performance critical?								3
5. Will the system run in an existing, heavily utilized operational environment?								2
6. Does the system require on-line data entry?								0
7. Does the on-line data entry require the input transaction to be built over multiple screens or operations?								0
8. Are the master files updated on-line?								4
9. Are the inputs, outputs, files, or inquiries complex?								5
10. Is the internal processing complex?								2
11. Is the code designed to be reusable?								5
12. Are conversion and installation included in the design?								2
13. Is the system designed for multiple installations in different organizations?								3
14. Is the application designed to facilitate change and ease of use by the user?								5
						sum of Fi =		42
	Funtion Point Metric =	count-total * [.65+.01*sum Fi]						
	=	103						

4) Conclusion:

The risk of developing this project is at a medium-level due to how ambitious it is. However, we believe that our skillset, coupled with a passion for the subject matter, will aid us in delivering this project.

Economic Feasibility:-

As of right now, the costs associated with building this web application are none due to the fact that we are building all of our tech stack in house with open-source technologies and our goal is to build the minimum viable product that we can use to partner with High Schools in the United Arab Emirates. However, as we scale up and start receiving a higher inflow of members and mentees in our platform, we expect our costs to go up. Specifically, we expect the following main cost areas:

Costs

Deployment in Amazon Web Services: $72 dollars per month assuming a 30gb capacity for the Database.

https://calculator.aws/#/createCalculator

Transportation of Mentors to High Schools: $300 dollars a month

Salaries of Web Developer Interns: $8 dollars per hour

$200 dollars a month per Intern

2-3 interns: $600

Cash Inflow and Benefits

Grants and Financial Aid from Participating High Schools,NGOs and Mentors: 3,000 dollars a month

Number of Students affecting Humanitarian Change: 1000-2000 students

Number of High Schools Participating: 4-5 High schools

Increase in our user Network within the Web Application: 3000-5000 users

The values above are for the pilot program to be enacted in the city of Abu Dhabi, United Arab Emirates. These numbers are not final and are expected to change as our organization grows.

Return of Investment(ROI) = (Grants) - (Deployment + Salaries + Transportation)

= 3000 - (72 + 600 + 300) = 2,028 dollars

The remaining 2028 Dollars will be used to reinvest in resources for the app to be able to house more users as well as outreach efforts to increase the visibility of Smallworld.

Conclusion

From a technical standpoint, we believe that this web application, although slightly ambitious , is achievable due to the interest from the developers in the subject matter. Economically, this application will be used for a new not-for-profit startup, so our economic feasibility study is contingent on creating a good web application that differentiates us from other volunteering organizations in order to receive financial support from NGOS, partnering organizations, and expert mentors.