



# Tasks List

Graduate Rotational Internship Program


## The Sparks Foundation





# Put on your Oxygen Mask First

Before you help  
others, you  
must first help  
yourself





# Task List

- ◇ The tasklist contains tasks for Web & Mobile Development, Data Science & Business Analytics, Digital Marketing, Human Resources and Campus Ambassador domains.
- ◇ You will receive internship Completion Certificate if at least one your domain specific task (plus the LinkedIn task #1). Please read FAQs on this: <https://lnkd.in/gnGiBbb>
- ◇ By doing more tasks you can improve your skills and be eligible for Letter of Recommendation (Not a guarantee).



# Instructions for all Tasks

- ◇ For all the tasks (except the first LinkedIn task) the submission will be via URLs.
- ◇ For each task you need to submit code using github/gitlab (for technical tasks, with public repository) or links of your work (for non technical tasks).
- ◇ For each task a video needs to be created to showcase your work, demo of your effort (running application and code for technical tasks and summary and explanation of other non-technical tasks).
- ◇ For each submission, your name should be there in the video and code on first screen, to confirm that it is your work.
- ◇ The video can be hosted on any public place such as youtube.
- ◇ And the video can afterwards be shared on LinkedIn, Facebook etc, for a proof of your work and build credibility among your peers. You can The Sparks Foundation in such posts.
- ◇ Read the FAQs to know more on task submissions.

# Improve your LinkedIn Profile (Mandatory Task)



#1

- ◇ Watch videos and read online articles to see the best practices about improving your LinkedIn Profile
- ◇ Read: [link1](#), [link2](#), [link3](#)
- ◇ Complete your LinkedIn Profile with all details from your resume, e.g. Objective, Education, Projects, Experience, etc..
- ◇ Add your professors, friends, seniors, industry leaders, etc. to your connections. Send invitation request to many. This will help you get job later on.
- ◇ Look at the connections of your existing network and add others who have reputed profile.
- ◇ Optionally, join and connect with: [link4](#), [link5](#), and all other existing members of The Sparks Foundation



# Web & Mobile Development Tasks



# Basic Banking System

#1

- ◇ Create a simple dynamic website which has the following specs.
- ◇ Start with creating a dummy data in database for upto 10 customers. Database options: Mysql, Mongo, Postgres, etc. Customers table will have basic fields such as name, email, current balance etc. Transfers table will record all transfers happened.
- ◇ Flow: Home Page > View all Customers > Select and View one Customer > Transfer Money > Select customer to transfer to > View all Customers .
- ◇ No Login Page. No User Creation. Only transfer of money between multiple users.
- ◇ Host the website at 000webhost, github.io, heroku app or any other free hosting provider. Check in code in gitlab.

# Basic Banking App

#2

- ◇ Create a simple mobile app which has the following specs.
- ◇ Start with creating dummy data in mobile (sqlite) database for upto 10 users. User table will have basic fields such as name, email, current balance etc. Transfers table will record all transfers happened.
- ◇ Flow: Home Screen > View all Customers> Select and View one Customer> Transfer Money> Select customer to transfer to > View all Customers.
- ◇ No Login Page. No Customer Creation. Only transfer of money between multiple customers .
- ◇ Upload video demo of your application on youtube and submit the url.



# Payment Gateway Integration



## #3

- ◇ Create a simple website where payment gateway is integrated.
- ◇ There will be a simple donate button on homepage. On clicking the donate button, the user will land on the payment page where user can select the amount to be paid and the payment type, e.g. credit card, Paypal, etc.
- ◇ Once the payment is done and invoice will be generated and email will be sent to the user for the payment received. The invoice will contain the amount.
- ◇ On any page / email, only basic information is needed.
- ◇ Create your own temporary / sandbox / testing accounts with 3<sup>rd</sup> party for integrations.
- ◇ Host the website at 000webhost, github.io, heroku app or any other free hosting provider. Check in code in gitlab.

# CI/CD: Cloud Computing

#4

- ◇ Read up about AWS or Azure.
- ◇ Write up about the steps of setup and essentials of AWS EC2 or Azure VM (one page step by step).
- ◇ Create an EC2 or azure VM instance and access it through ssh from your pc over internet.
- ◇ In the EC2, deploy and run any application (a website with tomcat/spring boot) or python based project.
- ◇ Use at least one service apart from EC2 or VM, i.e. Database service, or MQ, ML, Mobile or any other services provided by AWS or Azure.
- ◇ Submit the URL of the application which is running on EC2.
- ◇ Your video should show that you are able to run applications on cloud.

# Social Media Integration



#5

- ◇ Create a mobile app, where user can login through LinkedIn and Facebook (both).
- ◇ After login, display all the details (e.g. Name, profile photo, email, etc.) on the second page.
- ◇ Take help of online tutorials and Youtube videos.
- ◇ No backend / server side programming required.
- ◇ Very good looking UI and responsive UI, which should work for mobiles as well as tablets.
- ◇ Clean code is a must.
- ◇ Upload video demo of your application on youtube and submit the url.



# Testing (Automated)

#6

- ◇ Read up about Testing.
- ◇ Write up about different Testing.
- ◇ Learn selenium and basic selenium automation scripting.
- ◇ Start with Google Search and read tutorials. Watch videos to learn about various aspects of testing using selenium.
- ◇ Use selenium to create a test case to test the website [thesparksfoundation.sg](http://thesparksfoundation.sg)
- ◇ The test script should check of at least 5 pages and 10 elements in total.
- ◇ Each element could be e.g. if the Logo exists, the navigation bar appears, the name on about us page is correct, etc.



# Data Science & Business Analytics Tasks



# Prediction using Supervised ML

## (Level – Beginner)

#1

- Predict the percentage of marks of an student based on the number of study hours
- This is a simple linear regression task as it involves just 2 variables.
- You can use R, Python, SAS Enterprise Miner or any other tool
- Data can be found at <http://bit.ly/w-data>
- What will be predicted score if a student studies for 9.25 hrs/ day?
- Sample Solution : <https://bit.ly/2HxiGGJ>
- Task submission:
  1. Host the code on GitHub Repository (public). Record the code and output in a video. Post the video on YouTube
  2. Share links of code (GitHub) and video (YouTube) as a post on YOUR LinkedIn profile
  3. Submit the LinkedIn link in Task Submission Form when shared with you.

# Prediction using Unsupervised ML

## (Level – Beginner)

#2

- From the given 'Iris' dataset, predict the optimum number of clusters and represent it visually.
- Use R or Python or perform this task
- Dataset : <https://bit.ly/3kXTdox>
- Sample Solution : <https://bit.ly/3cGyP8j>
- Task submission:
  1. Host the code on GitHub Repository (public). Record the code and output in a video. Post the video on YouTube
  2. Share links of code (GitHub) and video (YouTube) as a post on YOUR LinkedIn profile
  3. Submit the LinkedIn link in Task Submission Form when shared with you.

# Prediction using Decision Tree Algorithm

## (Level – Intermediate)



#3

- For the given 'Iris' dataset, create the Decision Tree classifier and visualize it graphically.
- The purpose is if we feed any new data to this classifier, it would be able to predict the right class accordingly.
- Dataset : <https://bit.ly/3kXTdox>
- Sample Solution : <https://bit.ly/2G6sYx9>
- Task submission:
  1. Host the code on GitHub Repository (public). Record the code and output in a video. Post the video on YouTube
  2. Share links of code (GitHub) and video (YouTube) as a post on YOUR LinkedIn profile
  3. Submit the LinkedIn link in Task Submission Form when shared with you.



# Stock Market Prediction using Numerical and Textual Analysis

## (Level – Advanced)

#4

- Create a hybrid model for stock price/performance prediction using numerical analysis of historical stock prices, and sentimental analysis of news headlines
- Stock to analyze and predict - SENSEX (S&P BSE SENSEX)
- Download historical stock prices from [finance.yahoo.com](https://finance.yahoo.com)
- Download textual (news) data from <https://bit.ly/36fFP16>
- Use either R or Python, or both for separate analysis and then combine the findings to create a hybrid model
- Depending on the accuracy of the model and quality of the task, we will endorse your work and help you publish it.

# To Explore Business Analytics

## (Level – Beginner & Intermediate)

#5

- Perform 'Exploratory Data Analysis' on the provided dataset 'SampleSuperstore'
- As a business manager, try to find out the weak areas where you can work to make more profit.
- What all business problems you can derive by exploring the data?
- You can choose any of the tool of your choice (Python/R/Tableau/PowerBI/Excel)
- Dataset: <https://bit.ly/3i4rbWl>
- **Intermediate Level** - Create storyboards. Screen-record along with your audio explaining the charts and interpretations.
- Task submission:
  1. Create the dashboards and/or storyboard and record it
  2. Upload the recording on Youtube, share the link on LinkedIn
  3. Submit LinkedIn post link in Task Submission Form when shared

# Timeline Analysis : Covid-19

## (Level – Advanced)

#6

- Create a storyboard showing spread of Covid-19 cases in your country or any region (Asia, Europe, BRICS etc)
- Use animation, timeline and annotations to create attractive and interactive dashboards and story
- Identify interesting patterns and possible reasons helping Covid-19 spread with basic as well as advanced charts
- Use Tableau or Power BI for this task
- Screen-record the completed storyboard along with your audio explaining the charts and giving recommendations.
- Dataset: Daily updated .csv file on <https://bit.ly/30d2gdi>
- Task submission:
  1. Create the dashboards and/or storyboard and record it
  2. Upload the recording on Youtube, share the link on LinkedIn
  3. Submit LinkedIn post link in Task Submission Form when shared



# Content & Digital Marketing Tasks



# Marketing Plan: Social Media

#1

- ◇ Create a Marketing Plan for The Sparks Foundation. The plan could include any social media, e.g. LinkedIn, Twitter, Instagram, Facebook etc.
- ◇ Read and Understand the various programs at The Sparks Foundation via the website. Explain how the plan should be executed for maximum benefits.
- ◇ Write up brief plan (about 5 pages) on how marketing can be done, including how to make it successful. You can use medium.com to write the plan.
- ◇ Design a few posts to summarize your plan, and create a slideshow (nice looking) and upload on slideshare or any other public slide sharing website.
- ◇ Create an explanatory video to showcase your effort. You could use voice over or typed text to explain your effort.
- ◇ Share the job postings of TSF on relevant social media groups

# Content Writing: Small Articles



## #2

- ◇ Articles on any of the 3 themes: inspire, innovate, integrate
- ◇ Read up on internet about your themes and understand the problem people are facing and proposed solutions.
- ◇ Write articles with minimum 2-3 pages, including catchy pictures, which is well formatted and mistake-free in your own words. Choose a catchy title, include quotes, references of other articles and stories.
- ◇ Post all of the articles online and share us the link. You can use Medium.com as publishing platform.
- ◇ Share those articles via LinkedIn
- ◇ Summarize your articles in small posts and create a slideshow (nice looking) and upload on slideshare.
- ◇ Create an explanatory video to showcase your effort. You could use voice over or typed text to explain your effort.

# Animations / Explanatory Videos



## #3

- ◇ Read up various programs run by The Sparks Foundation on the website or LinkedIn, or you can just choose GRIP to create an explanatory video of GRIP.
- ◇ Signup at Biteable.com, Animaker.com, Powtoons.com or any similar website.
- ◇ Create small animations (30 seconds – 1 minute) to explain about the process and/or benefits of the program.
- ◇ The explanatory animation could be small but show show that you can create nice looking videos.
- ◇ Upload the video on youtube and share the videos on your LinkedIn profile.
- ◇ Submit the urls in the Task Submission Form, when shared.

# Poster Design

#4

- ◇ Sign up on Canva.com.
- ◇ Design 3 to 5 Posters of following:
- ◇ Poster/Infographics on Education Sector Reforms on any of following themes: inspire, innovate, integrate.
- ◇ Poster to highlight the GRIP at The Sparks Foundation and showcase benefits and achievements.
- ◇ Be creative and showcase different aspects of the program. Include relevant information to help students signup.
- ◇ Post them on various educational and students groups on LinkedIn and Facebook.
- ◇ Submit the urls in the end.
- ◇ Create a small video of all the posters and publish the video also.





# Human Resources & Campus Ambassador Tasks





# Recruitment Article and Posts

#1

- ◇ Different and effective ways of recruiting
- ◇ How to get referrals from people on LinkedIn (Please list the steps).
- ◇ Write an article with your steps and plan for recruitment using Social Media on Medium.
- ◇ Design a few posts to summarize your plan, and share your posts to see response of users.
- ◇ Create a slideshow (nice looking) with your posts and upload your slides on slideshare or any other public slide sharing website.
- ◇ After a few days, see how was the response to your call for recruiting, and create an explanatory video to showcase your effort. You could use voice over or typed text to explain your effort.

# Job Readiness Article and Posts



## #2

- ◇ Read online about various things needed for getting hired.
- ◇ Read about how to create nice resume, what to include and what not to include.
- ◇ Write an article and 5 small posts consisting of your understanding and knowledge of how to be job ready.
- ◇ Publish your articles on Medium and share the posts on LinkedIn, along with the link of longer medium article.
- ◇ Upload your posts in the slide format to slideshare.
- ◇ Create a video to show the responses you have received for your posts on Job Readiness and to show how many people have benefitted from your articles / posts.

# Job Advertisement for GRIP



## #3

- ◇ Look at the GRIP advertisements done on various platforms.
- ◇ Re-write those advertisements creatively based on what others are looking for, in different styles.
- ◇ Appeal to different sections based on their interests and write why GRIP would be helpful for them.
- ◇ Share your advertisements for GRIP at various places wherever you can reach them and invite people to respond.
- ◇ Always include the link of the “Interest Form” and “TSF Network” in your posts.
- ◇ After a few days, see how was the response to your ads, and create an explanatory video to showcase your effort. You could use voice over or typed text to explain your effort.

# Expanding TSF Reach

#4

- ◇ Help expand TSF by introducing TSF to other entities such as college, training placement cells and other students.
- ◇ Find contact person and email of 5 to 10 college placement cells and write emails to introduce TSF to them.
- ◇ Find other sources from where your friends can be reached, or other people in your network who would be looking for similar internships.
- ◇ Refer all such students and your contacts to TSF and GRIP.
- ◇ Create a post by tagging all such people who would be interested and tag The Sparks Foundation (company) also in the same post.
- ◇ Create a video of your effort to show who you have contacted and what was the response.



After all, a job isn't worth doing unless  
you enjoy it.

*Dinah Sheridan*

# Ask us for help!

- ◇ The purpose of the internship is to learn.
- ◇ Please ask for help as much as you need.
- ◇ We don't want to dictate you. So it is up to you to seek guidance.
- ◇ The tasks given may seem very easy or very difficult. We expect that you give professional due regard to the tasks.
- ◇ Best of luck!!



# Support the Cause

Please Join Us and Spread the Word about what we are doing. With your help we can reach out to more students...

- ◇ FB: <https://www.facebook.com/thesparksfoundation.info>
- ◇ TSF @ LinkedIn: <https://www.linkedin.com/company/the-sparks-foundation/>
- ◇ TSF Network: <https://www.linkedin.com/groups/10379184/>
- ◇ Twitter: <https://twitter.com/tsfsingapore>
- ◇ Instagram: <https://instagram.com/thesparksfoundation.info>
- ◇ Medium: <https://medium.com/thesparksfoundation>

