

Welcome to Week 8 with BWIB Tech!



Fall Quarter Project

Data Science Track + PM Track

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01

Project Introduction

Data Science

Prompt: Write a data blog article with visualizations that answers a question/topic

Step 1: Choose a dataset - we'll give you 2 choices! - and ask questions/make guesses on a topic

Step 2: Create visualizations in R to answer questions and make conclusions

Step 3: Explain conclusions in a short article

PM

Prompt:

Step 1: Conduct a SWOT analysis on 1) Apple, 2) Uber, or 3) Netflix.

Step 2: Using your SWOT analysis, come up with 1 or 2 additional features or products for your company. Write a Product Requirements Document (PRD) outlining the vision, goals, and requirements for said features.

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Datasets

Dataset 1: Data Science Job Salaries

This dataset lists salaries aggregated by ai-jobs.net. Source: Kaggle.

Some of the variables found in this dataset:

Column	Description
work_year	The year the salary was paid.
experience_level	The experience level in the job during the year with the following possible values: EN Entry-level / Junior MI Mid-level / Intermediate SE Senior-level / Expert EX Executive-level / Director
employment_type	The type of employment for the role: PT Part-time FT Full-time CT Contract FL Freelance
job_title	The role worked in during the year.
salary	The total gross salary amount paid.

Example questions:

- Does the year the salary was paid greatly affect the salary amount?
- What are the average salaries for Data Scientists vs Data analysts?

Dataset 2: Life Expectancy

This dataset lists life expectancies in different countries from 2000-2015. Source: Kaggle

Some of the variables found in this dataset:

- Country: 119 countries names. The list is available [here](#).
- Year: from 2000 to 2015 (both included). Longitudinal format.
- Continent: names of the different continents (6 continents: Europe, Asia, Africa, North America, South America, and Oceania) from this [link](#).
- Least Developed: if the value is TRUE, the country is classified as "Least Developed". Data of Least Developed countries taken from this [link](#).
- Life Expectancy: data taken from this [link](#).
- Population: data taken from this [link](#).
- CO2 emissions: data taken from this [link](#).
- Health expenditure: data taken from this [link](#).
- Electric power consumption: data taken from this [link](#).

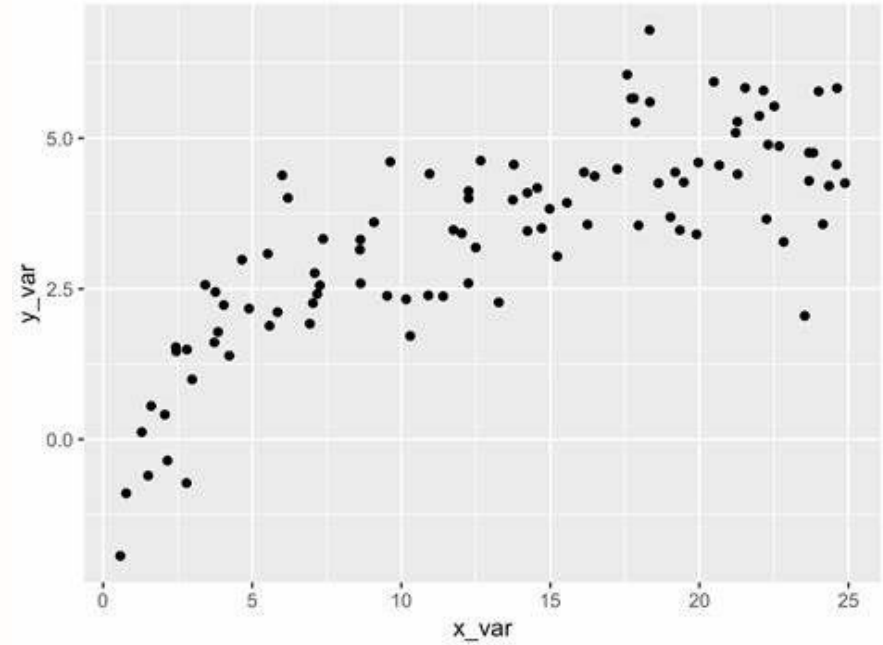
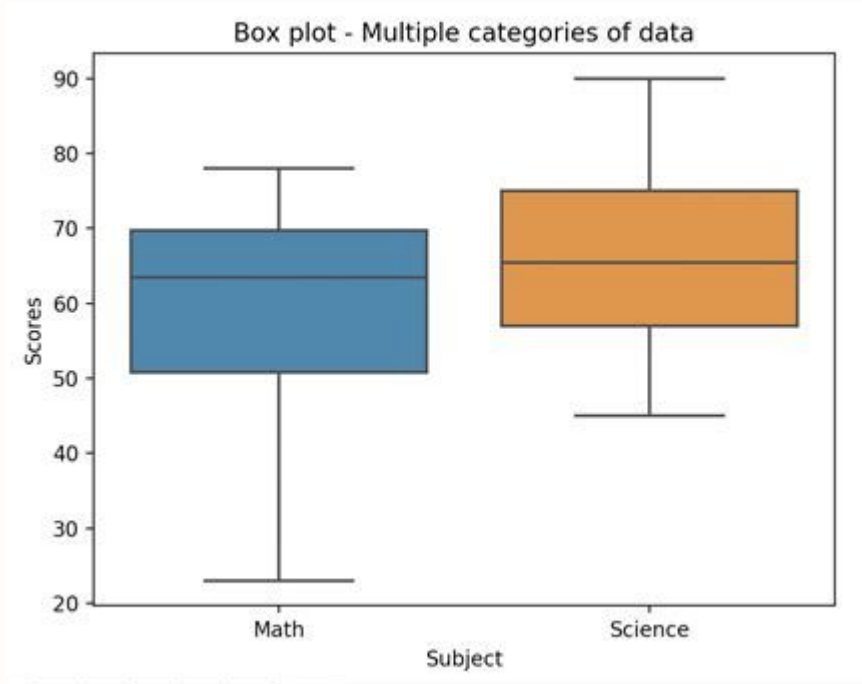
Example questions:

- Is there any correlation between CO2 emissions in the country and life expectancy?
- Which continents have higher life expectancies? Why?

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Visualizations

Example Visualizations



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Writing a Data Article

Data Article Writing



- No set structure or rules
- **Some recommendations:**
 - Start with an introduction of the problem (why is your findings important/interesting?)
 - Introduce the dataset (state the source, size, etc.)
 - Explain your findings through both visualizations and writing
 - The article should be easy to read and understand (tell a story!)
- For inspiration, you can visit:
 - DataRes UCLA's Data Blog: *ucladatares.medium.com*
 - Daily Bruin's Stack: *stack.dailybruin.com*



PM Track



What is a PRD?

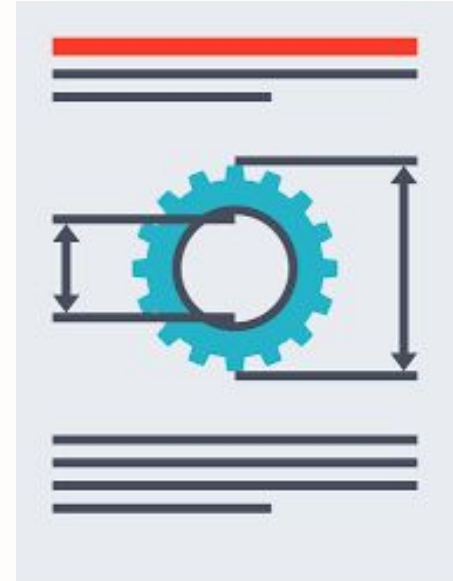
PRD Definition

What is a Product Requirements Document (PRD)?

- A product requirements document (PRD) **defines the requirements of a product, including the product's purpose, features, functionality, and behavior.**
- Serves as a guide for business and technical teams to help build and launch the product.
- Doesn't touch on market opportunity or revenue; Rooted in use cases and functionality.

What Should a PRD Contain?

- A PRD must include every explicit capability required for the release.
- Details use cases illustrating how a user would utilize various functionalities.
- Includes an overview/purpose for the release. It should detail exactly what the product team is trying to achieve with this specific release.
- Spell out any additional requirements. These include any system or environmental requirements as well as any usability requirements.



What goes into a PRD?



Objectives/Goals

Explain why you're building the product and detail any goals you hope to accomplish with this release. Answer questions like: "Why are we doing this? How does this fit into the overall company objectives?"



Features

For each feature, you should include a description, goal and use case at a minimum. Additional details may be helpful or necessary depending on the complexity of the feature, such as out-of-scope items.



UX Flow & Design Notes

Most organizations complete the UX design of features after the PRD has been reviewed and accepted. PRD's don't need to include wireframes that map out every possible scenario; instead, they are used to describe the overall user workflow.



System & Environmental Requirements

Which end-user environments will be supported (such as browsers, operating systems, memory, and processing power, etc.)

Assumptions, Constraints, and Dependencies

The final batch of ingredients for a PRD is the Assumptions, Constraints, and Dependencies list. PMs must list out what is expected of users, any limits for the implementation to be aware of, and any outside elements required for the final solution to be functional.

Assumptions



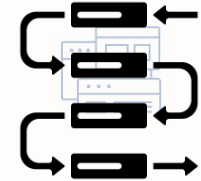
- **Assumptions** are anything you expect to be in place (yet isn't guaranteed), such as assuming that all users will have Internet connectivity.

Constraints



- **Constraints** dictate something the eventual implementation can't require, be it a budgetary constraint or a technical one.

Dependencies



- **Dependencies** are any known condition or item the product will rely on, such as depending on Google Maps to add directions for a dog walking app.

PM Track

Example Project: Slack

Project Idea:

Improving Slack's Collaborative Features



Overview: Slack is a business communications platform designed to help companies and teams work effectively together. Though it's a growing force in the enterprise software space, it's lacking key features that, if implemented properly, could help increase its market share.

Project Component 1: Design a more useful collaborative call feature for Slack.

- Think scheduled zoom calls, but directly within Slack's interface.
- Although Slack has an existing call feature, it's limited in functionality.

Project Component 2: Re-vamp Slack's existing organizational / task management features.

- Think Trello, Notion, Asana, OneNote (Note taking/ To-Do List)

Case Study: Slack

SWOT Analysis

Strengths
Weaknesses
Opportunities
Threats

Strengths

- Relevant channels
- Intuitive UI
- Multiple workspaces in app
- Thread
- Reactions
- Customization

Opportunities

- Remote communication is becoming more popular.
 - ◆ Lower costs to businesses in general through remote work
 - ◆ International communications

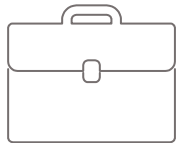
Weaknesses

- Can be too formal
- Similar to Discord / other existing competitors
- Can be disorganized (possible cluttering)

Threats

- Discord
- Zoom
- FB Messenger
- Skype
- Microsoft Teams
- Google Classroom/Hangouts

Strategy + Product Framework



Case Study: Slack

Key Competitors

- Discord
- Zoom
- FB Messenger
- Skype
- Microsoft Teams
- Google Classroom/Hangouts

Goals

- Cuts out a middle man
- Be the one stop shop for group collaboration

Use Cases / User Needs

- Larger capacity to fit more teams
- No gallery view → less interaction w/ teams
- Regulated/scheduled announcements
- Needs an improved user interface

Potential Challenges

- People hate change.
 - ◆ Legacy users
- Learning curves
- Too many things in one app

How do you define product success?

Metrics:

How would you implement these features? Are there trade-offs to certain implementation strategies?

Call Feature

- Feature Engagement?
- Daily Active Users?
- Monthly Active Users?
- Retention?
- Churn Rate?
- Growth rate?
- Reviews?
- Feature Responsiveness?
- App Stickiness?

Task Management Feature

- Feature Engagement?
- Daily Active Users?
- Monthly Active Users?
- Retention?
- Churn Rate?
- Growth rate?
- Reviews?
- Feature Responsiveness?
- App Stickiness?

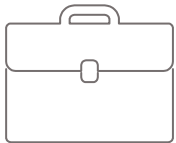
Questions to keep in mind: What makes one metric more applicable than another? Are certain metrics better for measuring short-term vs. long-term success? Should we choose different metrics depending on the feature we're analyzing?

A PRD is like a thesis statement. It guides all subsequent portions of a project, outlines the product's vision/goals, and sets up a concrete path to implementation.



Synthesis:

Product Vision (Who, What, Why)



Objective: What problem are we solving with these features?

Call Feature Purpose: faster communication (real-time), more interactive, more personalized, immediate

Task Management Purpose: Better organization for team projects

Vision Statement: Where goals are we working towards?

Call Feature Vision: Create a more effective, collaborative, real-time work environment

Task Management Vision: Tracking progress real-time whether it be in terms of small projects or accomplishing overarching company objectives (streamline user work flow)

Personas: Who are we building these features for?

A PRD is like a thesis statement. It guides all subsequent portions of a project, outlines the product's vision/goals, and sets up a concrete path to implementation.



Synthesis:

Feature Overview (What, How)



Call Feature:

User Problem: Pain Point/Challenge (Identified in Strategy)

User Value: How the proposed feature helps the user

Assumptions: Business, user, or technical assumptions

Metrics: This feature is successful if... (Identified in Implementation)

Task Management Feature:

User Problem: Pain Point/Challenge (Identified in Strategy)

User Value: How the proposed feature helps the user

Assumptions: Business, user, or technical assumptions

Metrics: This feature is successful if... (Identified in Implementation)



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Project Application

[https://forms.gle/T7Tgww6vP
_GFynqr9](https://forms.gle/T7Tgww6vP_GFynqr9)



Thank you! Any questions?

Please feel free to email BWIB directly afterwards if you have any questions. Don't hesitate to reach out to any of the Committee Directors either. We're here to help!

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