Solution Document (Team Cipher)

Venture Challenge

1. What problem does your idea solve-

a. Problem: In order to develop business applications and tools, Enterprises require employees with sound technical knowledge and also have to spend an ample amount of time, effort, and money in developing these applications which makes it quite challenging for them to satisfy the growing customer needs.

b.Solution: Creating an application that can aggregate all hard coding and tedious tasks such as analyzing statistical data, making a basic layout for a website(or, an app), or building other commercial tools under a single GUI component. Basically, a user can simply use these features to acquire information or selecting layouts and use it in their own application without hard coding them from scratch. The idea is described as follows:

***Main Idea:** The GUI application would have three principal components :

Statistical data analyzer (performing exploratory data analysis over a dataset)

UI/UX Designer

Commercial application add-ons.

- **a. Statistical Analyser:** Statistical Analyser has the main motive of analyzing data and save time for a long tedious EDA. The application would prompt the user to enter a link to the dataset. App's backend server would perform necessary EDAs through various python libraries and gather all the statistical information and store it in a database. Apart from these, it would also generate histograms, graphs, trends (for time series data). Now users can simply gather all necessary information about data avoiding writing a script from scratch.
- **b. UI/UX Designer:** This Component focuses on generating a website's User Interface dynamically. As various users have different requirements of layouts so a dynamic layout property should be included. Leveraging OpenAI's GPT-3 API, layout templates (JSX, CSS, etc), would be generated by the API, given to a user prompt.
- **c. Commercial Application Addons:** This component will involve some already premade prototypes of various commercial applications be it web or mobile. The users will have the option to customize the layout and content of the prototype according to their needs. The customization will only involve drag and

drop and option selections, no prior coding knowledge will be required to make these customizations.

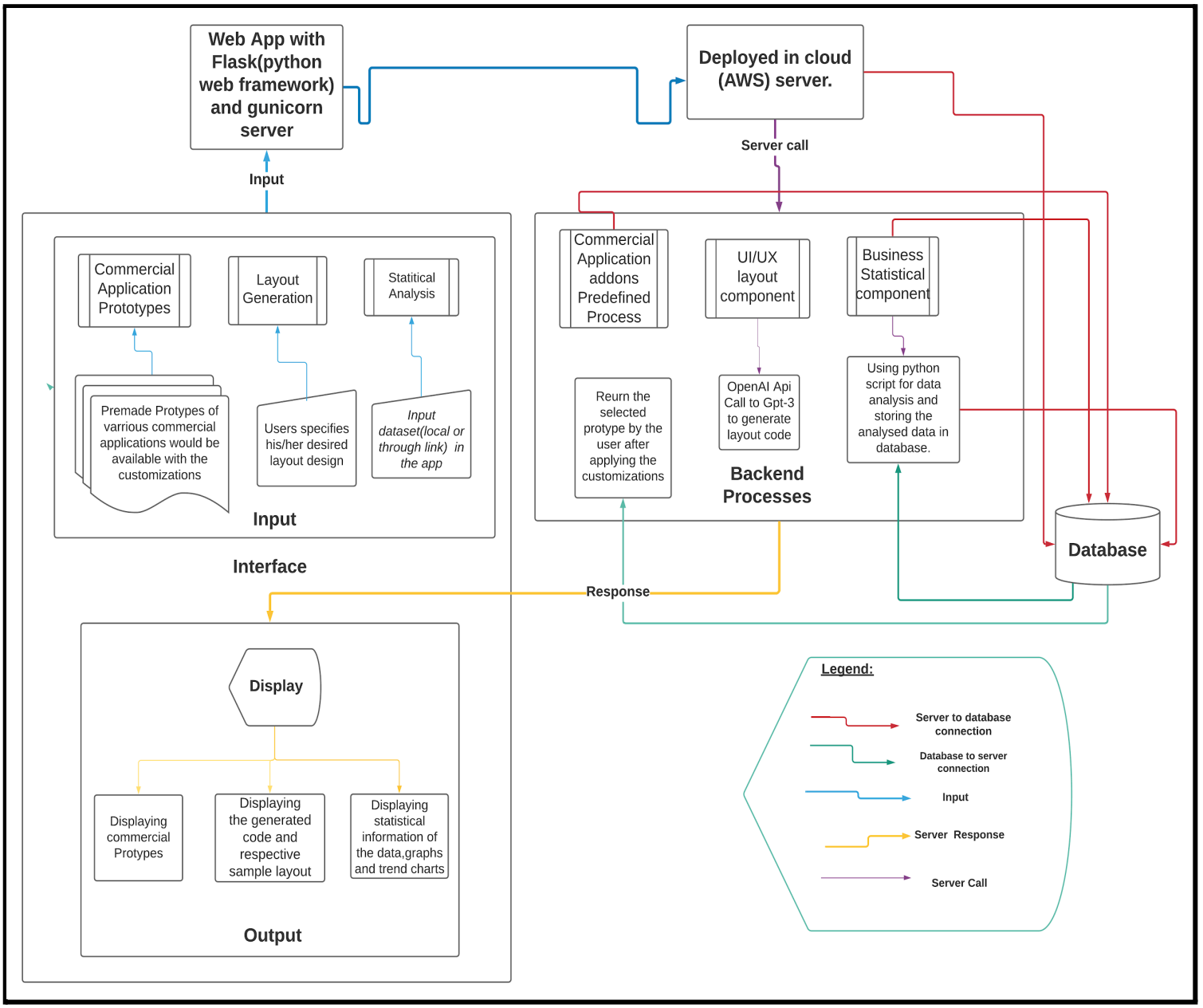
c. Current Scope: The main objective of the application is to save time in writing applications or scripts for some trivial stuff, by generating code snippets and getting information previously. For Example: If a company wants to invest in a stock or tries to analyze its own stocks they would have to write programs from scratch. Instead, the Statistical section of the server would analyze data trends find statistical information(like mean, variance, skewness, trends, seasonality, etc.), and store it in the database for future use without writing a single line of code. However, if they try to analyze their sales, the graphs generated would easily help to spot the community-area of major profit. Apart from these, making a dynamic layout and adding commercial application addons would ease the effort of building a business application as it covers all its aspects without writing a single line of code.

d.Targeted Audience: This Application generally targets all the start-ups and even the ones who are trying to build a single system project.

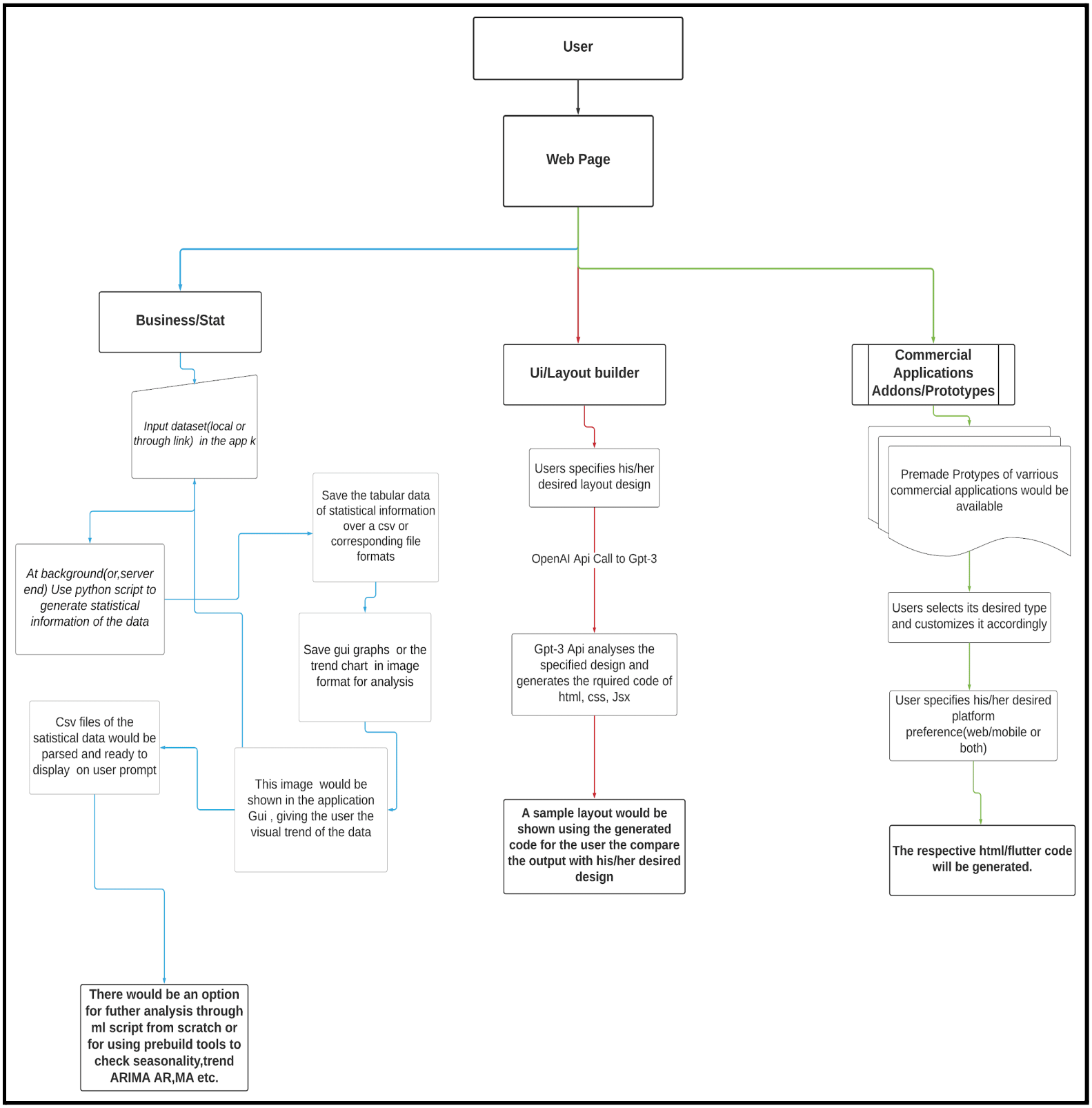
e. Relevance of the application to the existing ones: The application would help small business companies and start-ups to create a business app by writing as minimal code as possible. As most of the work is done by the application's backend server and the resultant would be wrapped by the applications GUI. In our knowledge, any app does not leverage all these features under a single GUI component. So it may be quite relevant and unique on its own.

2. How will you go about solving it-- the approach?

a. High Level Design :



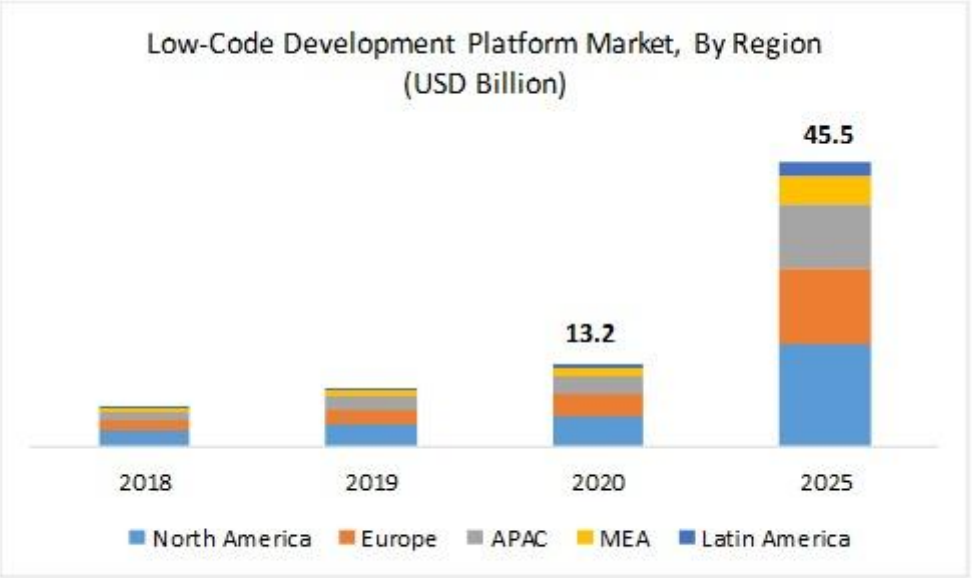
b. UML Diagrams supporting your approach:-



c. Current Market Analysis/Stats:-The worldwide low-code advancement stage market size is extended to develop from USD 13.2 billion out of 2020 to USD 45.5 billion by 2025, at a Compound Annual Growth Rate (CAGR) of 28.1% during this time frame. The expanding need for digitalization and development of agile DevOps practices are expected to enhance the use of low-code development platform markets across the globe.

The BFSI(Banking, Financial Services, and Insurance) industry requires market services and platforms on a large-scale due to the voluminous information produced across these organizations. Organizations have implemented low-code development platforms and services to improve the automation in the customer service business functions, as customer service is the core factor responsible for customer acquisition and retention in the BFSI industry. This industry frequently keeps introducing new and improved financial products and services to enhance its business operations, which makes it attractive for the low-code development platform providers to offer advanced solutions to the industry.

E: Estimated; P: Projected Source: Secondary Research, Expert Interviews, And Marketsandmarkets Analysis



Source: MarketsandMarkets Analysis

The web application is considered the face of an organization and by using the low-code development platform organizations can roll out user-defined web-based applications quickly. Instead of writing the programming language for the development of web-based applications, employees with less development experience can also create sophisticated applications. For those who have relevant experience, this platform can ease out the daily work chores and can even help them create more custom web-based applications by integrating already existing digital ecosystems.

Some Recent developments include-

- In March 2020, Deloitte and Appian announced a strategic alliance to help modernize mission systems for its clients within the commercial, federal civilian, defense, and state and local government agencies.
- In March 2020, Appian launched the latest version of the Appian Low-code Automation Platform. The new version delivers material business impact with unified, flexible, and fast enterprise automation.
- In February 2020, Salesforce acquired Evergage, a cloud-based personalization and customer data platform.
- In February 2020, Microsoft PowerApps announced the public preview for two core canvas apps, which are canvas components and the PowerApps component framework.
- In January 2020, Appian partnered with Celonis to accelerate digital business process transformation.

d.Technologies/ Frameworks/ Languages Involved :-

Technologies and Frameworks:-

- Flask(python web framework for server-side development)
- AWS cloud service
- OpenAi's GPT-3 API
- Gunicorn
- React js.
- Flutter

Languages:-

a. Python
b. Dart
c. Javascript.

3. How would your solution be scalable for a larger audience?

---For scalability of our application we will deploy our app on cloud services such as AWS, GCP, etc.. which can automatically scale the site with a change in the no. of audiences other than that we will go with less and only required functional requirements. Therefore the application will work fluently even for larger audiences. In order to make it more easily accessible, we will also make the API available with a license.

4. How would it behave with the changing need and demand, also with the changing tech?

----The application will change with changing need and demand 'cause as the product grows, we will add more features and code generation first we're going with statistical analysis , layouts and business application templates but with time we will add many more snippets like generating a deep learning architecture code just by describing the dataset and type of problem so with time we will build a complete tool which will cut the coding part of development more than 50 percent. As the current technological development is focused on web and deep learning development so we're gonna first focus on providing complete coding solution for these two and for this code generation of different type we're gonna use GPT3 which is the current advancement and best existing model in field of language processing trained on 175B parameters which uses Transformers. So with changing tech and growth in fields of AI our application will keep getting better and better as it's based on AI, just like how language translation evolved with changing in tech and development in AI. We've seen the growth of language Translation which is most common and visible example which once used just the **ENCODER-DECODER** now uses **ATTENTION** and **TRANSFORMER** with which accuracy keeps getting better. So with change in Tech, Demand and Need our application will grow in extensive way with increase in performance capabilities.

5. Impact Analysis of your solution?

---NCDPs(No code Development Platforms) are applied to fulfill the necessities of organizations that need to automate or digitize measures with cloud-based versatile applications. No-code applications are every now and again made remembering the prerequisites of big business clients, not the same as standard IT and engineer groups.

However, those stages are not uniform by the way they are promoted but instead vary in their usefulness, mixes, and business use cases. Explicit applications, for example, business mechanization seamlessly coordinate ERP workflows. This turn in focus is intended to further the advancement of the software development cycle where getting IT teams to work on building business apps may take up excessive resources, funds, and time, all of which may be hard to come by in comparison to market demands.

The shift from conventional business software to a lean no-code development methodology may also impact IT leaders and tech departments. According to analysts, the usage of no-code tools may put IT in a more governance-centric and supervisory role rather than dynamic software programming and debugging.

The potential benefit of utilizing an NCDP tool is that with web access and practical business intelligence one can become an application developer, which is transformational for enterprise productivity.

On the other hand, IT folks have pointed out that business users inept at debugging code may create further challenges for tech teams, given the sensitivity around cybersecurity and business theft events caused by software bugs. Nevertheless, NCDPs have been anticipated as the next wave in programming and techniques for rapid app development, which could be revolutionary for the software world.

According to analysts, the rise of no-code platforms is similar to the time before the coming of computer operating systems, which impacted personal computing with the help of GUIs. Prior to the current operating systems, computers could only be accessed by technologists and people versed in languages such as DOS.

6. Future Scope:-

---Today, effective IT requires smart enterprise system management, which increasingly means building a custom-made digital ecosystem. As organizations continue investing in digital transformation technologies, they must consider what apps and platforms will fulfill their specific needs at the lowest cost, with the least internal IT resources, and with minimal disruption.

Enterprise applications managers, IT team leads, CIOs, CTOs, and department heads will raise their IT infrastructure to a higher level by adopting platforms that offer low-code and no-code application development.

Low-code/no-code technology enables organizations to overcome the usual obstacles in acquiring enterprise applications and satisfying unique needs. Departments throughout the organization have the potential to develop, test, and use apps without relying on IT.

After alleviating some of this demand, organizations can benefit from greater bandwidth for custom applications, lower costs, faster deployment, and easier transitions from legacy systems to modern applications.

Some companies have already begun to understand the value of low-code technology, but haven’t realized how the addition of no-code tools for business users can heighten those benefits even more. With both, developers can focus on high-value work, while business users enjoy the independence of building and improving apps to serve their own needs