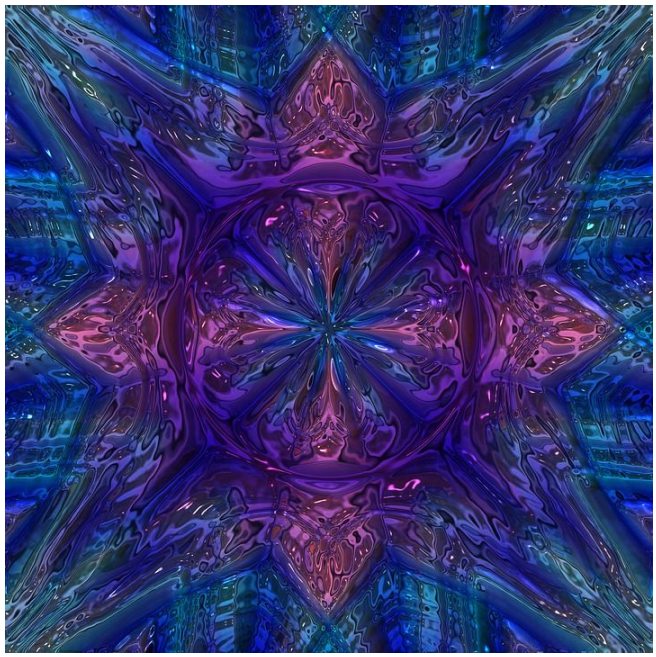
Fractal Factory



Project Plan

Kenny Mejia, Candice Rivera, Jada Tijani, Brandon Kline, and Eric Stenton
Professor Rivas
CMPT_475N_200
11 September 2019

Questions:

Features:

- **In your own words, what is the purpose/function of the application?**
- ❏ The purpose of this application is to provide users a platform that is easy and quick to use that allows them to upload lines of codes that will be converted to blocks. Our program will calculate the fractal dimension of the users code and then match it with an art piece in our database that has a similar fractal dimension. Our program will then create a new art piece based on the lines of code and chosen artwork.
- **What priority would you give to each feature?**
- ❏ The top priority of the application would be to make sure our calculations are correct, updating profiles with previous files users have uploaded and making sure that the payment system is running smoothly.
    - **Are there some that are essential to the application while others are more nice additions to be considered if there is enough time and resources to actualize them?**
    - ❏ The previous features mentioned above are all essential ones that would e considered nice additions would be allowing users to print the pictures, allowing users to see multiple matches and not just one as well as showing users a progress report while the fractal dimensions are being compared
- **Are there other projects/systems with which this project/system will interface?**
- ❏ Yes, some other systems that we will be using to make our application run smoother are Kaggle to get our database of paintings, Canvas Pop to allow users to print their painting and Ron Coleman's Paper on Fractal dimension to help with calculating the fractal dimension and turning the into blocks.
- **What resources will be available to us? (Servers for database and hosting?)**
- ❏ We will have a database that we create and a local server created by out IT team member
- **What are the conditions for this project to be successful?**
- ❏ The conditions given to us by our client are :
    - ❏ A login page for users , using Marist credentials, Facebook and Google
    - ❏ A main page for users where they can see previous paintings
    - ❏ Profile page
    - ❏ The ability to upload code and print paintings
    - ❏ Ability to see multiple matches
    - ❏ Allow multiple forms of payment including bitcoin
    - ❏ Ability to save code
    - ❏ Cheap paintings

Users:

- **Who are the key stakeholders and users?**
  - ❏ Stakeholders: Pablo Rivas, Marist College
  - ❏ Users: Faculty at Marist , Students , Young Adults, Programmers of the World (English speaking)

Data:

- **What types of data should we expect to store?**
  - ❏ Paintings, fractal dimensions, profile information, and the photos user save to their profile

- **Will certain data require privileged access to view?**

  - ❏ Yes, the admin will be the only one allowed to add new art, trigger processes, delete and ban users
  - ❏ Admin will also be the only one to see the progress reports for weekly and daiy data
- **Will any data be collected that is not expressly given such as user statistics or storing the pictures offered to the application beyond using it to supply the user with a feature?**
  - ❏ No

Outward Design and Access:

- **What kind of visuals would you like for the application?**
  - **Is there a theme or a feeling that you wish to invoke in the user when using the application?**
    - ❏ The background could possibly be a block of code to entice users or a painting from the database, we haven't made a final decision yet but we will get back to you when we do .

Miscellaneous/Remaining Questions:

- **Is there any existing documentation available to us about the application and underlying model?**

❏ Stack Overflow Link given to us by Pablo Rivas, Ron Coleman's Paper and Kaggle

User Requirements:

Front End:

- A login page for users, with sign-in supported by Marist, Facebook, and Google APIs
- A profile page for each user (simplistic, no plans for a social network)
- The ability to upload code and print stylized renders of said code
- A selection of top 3 paintings for different stylization options, sorted by fractal dimension
- The ability to save previously uploaded code and paintings per user
- The ability to print a full-size image with the Canvas Pop API for a small fee
- Other basic web pages (main page, about us, etc)
- Interactive loading bar while processing to increase immersion

Back End:

- Administrator and User roles/access
- Neural network connected to painting database for code analysis and art production
- Fractal dimension calculator
- Code block converter
- Statistics tracking

Project Plan

Date	Milestone	Tasks	Responsible	Notes
8/28/2019	Project Start	Form team: make introductions; inventory skill strengths and weaknesses; formulate and document initial roles and responsibilities (to be modified as needed later).	All	
9/3/2019	Project Start	Schedule 1st team meeting - and attempt to choose recurring team meeting times that work for everyone (can be established later); establish a communications plan (ie. share emails, cell#'s, and establish how you will stay in touch)	All	
9/4/2019	Team Meeting; 1st homework started	Fully understand what the project requirements will be, Create Github Repo for the project, Start question portion of PDF, Start user requirements portion of PDF, Editing project plan	All	Eric - Create Github repo and use case diagram; Candice - Client questions; Kenny - IT Requirements and Project plan editing; Brandon - User requirements
9/9/2019	VM	Ensure VMs are working properly	Brandon	
9/10/2019	Team Meeting; Going over project requirements with	Finishing Project Plan Schedule, Establishing a contract between team and	All	

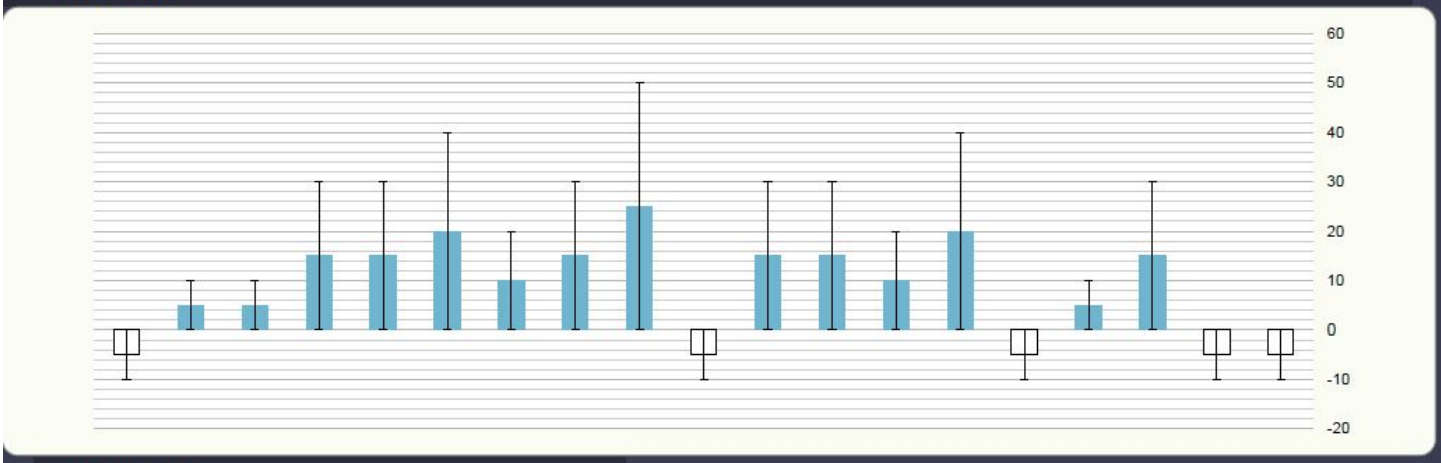
	client	client using the user requirements		
9/11/2019	Assignment #1 Due	PDF including questions, user requirements, project plan, and UML use case diagram due	All	Finalize and push PDF to Github
9/12/2019	Wireframes	Begin work on wireframes/mockups of front end pages	Kenny, Candice	
9/15/2019	IT Requirements	Finalizing IT requirements and creating PDF to push	All	
9/16/2019	Meet with client: E-R Diagram, IT Requirements	Go over E-R diagram and IT requirements	All	Eric - E-R diagram; Kenny, Brandon, Candice, Jada - IT Requirements
9/18/2019	Homework #2 Due	E-R diagrams complete with supporting documentation if explanation is required for anything you document in your diagrams.	All	Finalize and push E-R diagram and IT requirements
9/19/2019	Front-end work	Begin work on front end, HTML and CSS to create the pages needed	Kenny, Candice, Jada	Design sign-in page, profile page, about us page, results page
9/23/2019	Database Design Meeting	Finalize ideas on best design for database and data generating	All	Final details and gather sample data to populate database
9/25/2019	Homework #3 Due	Complete mock-ups (ie. wireframes) of your user interface.	All	Mockups completed and pushed to Github
9/26/2019	Database Testing	Ensure database is working and queries are outputting correctly	Eric	
10/2/2019	E-R diagram and Functional	Database system design completed and	All	Functional database with sample data pushed to github

	Database	uploaded to github		
10/3/2019	Back-end work	Back-end coding started	Eric, Kenny	Upload, neural networks, fractal calculator, code block converter, statistic tracking
10/7/2019	Review back-end	Ensure that any problems with neural network and other pieces are worked out	Eric, Kenny	
10/14/2019	Back-end final review	Review all parts of back-end and test to make sure everything works as intended	Eric, Kenny	
10/16/2019	Early Demo	Early demo due and presented	All	User interfaces connected and navigable, a proper connection to the DBMS, all external APIs and accounts tested, implemented test cases in a functional stage
10/16/2019	Mid-semester peer reviews due	Complete initial (ie. first pass feedback) peer reviews	All	
10/30/2019	Homework #4 Due	Database prototype complete	All	
11/6/2019	First Demo of Prototype	Complete project prototype first-pass demo ready	All	
11/13/2019	Project Portfolio Assigned	Begin discussing and working on project portfolio	All	
11/20/2019	User Validation & Test plan finalized	Test plan for all aspects of the prototype complete User validation tests to be performed by client documented	All	
11/25/2019	Client Visit	Updates to user validation complete (as required) One key question to ask the client documented	All	

12/1/2019	Draft Documentation	All documentation required for the project in draft form	All	
12/2/2019	Paper Due - Final Documentation	All documentation required for the project in FINAL form	All	
12/3/2019	Final Peer Evaluations	Complete final peer evaluation forms and submit	All	
12/4/2019	FINAL PRESENTATION !	Git er dun!	All	

Fractal Factory

TIMELINE



PROJECT DETAILS

DATE	MILESTONE	POSITION
8/28/2019	Project Start	-5
9/4/2019	Team Meeting; 1st homework started	5
9/9/2019	UML diags final	5
9/11/2019	Homework #1 Due	15
9/18/2019	Homework #2 Due	15
9/19/2019	Front-end work begins	20
9/23/2019	Database design draft	10
9/25/2019	Homework #3 Due	15
10/3/2019	Back-end work begins	25
10/16/2019	Mid-semester peer reviews due	-5
10/16/2019	Early demo presentation	15
10/30/2019	Homework #4 Due	15
11/6/2019	First Demo of Prototype	10
11/20/2019	User Validation & Test plan finalized	20
11/25/2019	Client Visit	-5

UML Use Case Diagram: