Project Proposal – Team 080

Design Your Code
: Designer Helper
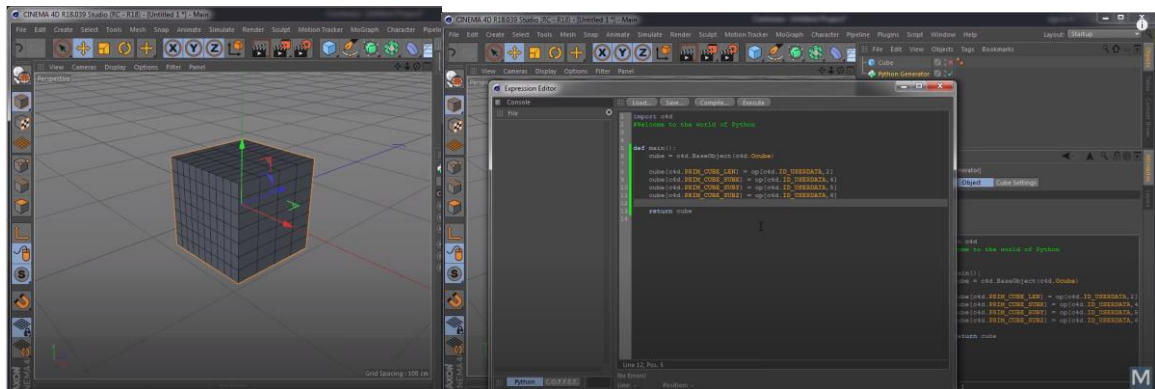
Team: 080

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목차

1 Project Overview and Motivation

Lower Learning curve – Immediate Use

Many junior developers, even the software major students, feel nervous when they learn the new computer language. Sometimes, there's no one to help them when they learn, or they have some difficulties to find function which they want.

Especially, designer's burden about computer language and communication with developer can be grown up in the tight development schedule of the startup, which must show prototype results quickly and accurately.

Based on these problems, we devise a 'Design Your Code : designer helper' which can help the junior coder and designer especially the 3D graphic designer who covers program like C4D(Cinema 4D) using Python, to do more easier works using Block coding like Scratch. Also, it will help communication between designer and developer by adding a function that changes the design result to code.

[Picture 1, 2 – C4D program and using python example]

2 Project Objective

'Design Your Code: designer helper' goal is to lower the entry barrier of computer language so that designers and junior coders can easily access the development environment and designer do not concern about developing, they can only concentrate to designing.

1. When user drags and assembles blocks such as reservation word and external module which are already created, it will automatically change them to Python code.
2. Tips about Python code and current project. SNS function like Q&A board for sharing the information of how the others are using it and questions.
3. The function that changes the UI to React Code by drawing. Through these functions, developer can reduce the time for develop. Also, designer can easily communicate with developer more than before.

3 User case

- Mr. A who graduated the Visual Media Major that just taught about making Visual Media got a job immediately. But the Job uses Python for the simple iteration contents to speed up the video-making process. Many people say that it is better to learn while doing work, but he was not interested in it so took a long time to study.
A. Designers or creators can focus only on the creations they are interested in and make better creations by shortening the learning period for code.
B. Although users don't know about Python's grammar, they can use Python's various powerful functions.

- Designer B wants to see how his UI looks on a real device. However, it is embarrassing to ask a UI development because it can be cost a lot.

A. The UI created by the designer can be converted directly into a code so that it can run on the actual device.
B. Can deliver the UI as it is created by the designer.

4 Development environment and implement

4.1   Development Environment

We will develop this program with web-base, there are few reasons.

- For easy access from everywhere.

- For reduce download – install troublesome work.

- For support SNS function.

   And also, we have a plan to extend SNS function to Android / Swift Application, we will use React.js.

   Front-end will be developed with React.js like above. Back-end SNS Function will be developed with Node.js because it has many libraries and it is easy to use. There is also an advantage that we already know the language. Python Module analysis and conversion to python language will be developed with Python3, because there is many text processing while analyzing Python module.

4.2   Implement Features

- Code Conversion (Python – Block)

   Need to be implemented that can develop Python code with block-coding style.

1. Basic reserved word and Data structure block need to be selected.
2. Third-party module upload / select function.
3. Need to show Block Code`s Result.
4. Conversion with Block code to Python Code.
5. Block explanation function.

- **SNS Feature (React + Node)**
  Basic Q&A notice board will be implemented.
  1. Basic Login, Sign-in or proceed with anonymous function.
  2. Basic write, revise, delete function with notice board.
  3. Basic Commenting and comment revise / delete function.

- **Code Conversion (GUI - React / React Native)**
  When user draw UI, need to convert to React code. But we will not implement event system.
  1. Basic GUI Drawing Kit will be offered.
  2. When drawing UI, project need to change it to React or React Native Code. (This will support only one language via 2.)

4.3 Project Problems

- **Code Conversion**
  There are very many features for coding style. Coding Style will combine naming style, indentation, or abstract levels. Coding Style will as close as Python regular library. Naming style will be opened to user, but project can automatically named.

- **Non-developer** (User who is not familiar with coding)
  However, block coding is very easy only to developer. Non computer-major student / designers are hard to understand about function, class or data structure. For this, we will make tutorial for making function or coding with block. And also, project will automatically correct or make "Class" for who do not want to know and do not interested in. (Project will automatically correction.)

  And also, if function is named with English, we will name function English as it is, but we will add comment for that function block or other block. We will use module`s comment for this function. We also think about hovering event for block-comment style.

- Interpreter Server Security

As we need to run Python conversed code at our server, that python code can attack or corrupt our python code running server (which can say Interpreter Server). This can be dangerous for our system, so we will use "Docker Container" to make virtual running system.

5 Task Assignment / Project Schedule

5.1   Task Assignment

구동완

- Back-end – SNS function development.
- Some Front-end task will be shared.

김민지

- Front-end – SNS function development
- React GUI function development

최현준

- Python – Block, React GUI – Code conversion function development
- Python, React GUI function development.

5.2 Task Schedule

Week	1	2	3	4	5	6	7
구동완	Idea planning and preparation for presentation	• Determining the project content. • Distributing detail roles. • Study for Project Language. • Determine How Git will be used, or how we will cooperate.	Study Language (Node.js)	Make Rest API for SNS and make DB Schema for API. • Login Feature. • Profile Feature.	Make Rest API for SNS and make DB Schema for API. • Q&A boards.	Make Rest API for SNS and make DB Schema for API. • Comment and re-comment	Make Rest API for SNS and make DB Schema for API. • Anonymous feature.
김민지			Study Language (React.js)	Make Front-end for SNS. • Login form. • Profile form. • Main form.	Make Front-end for SNS. • Q&A boards. • Comment and re-comment • Main form.	Integration for Python – block coding boards.	Make Front-end for SNS. • Anonymous feature.
최현준			Project UI Design.	Make auto-module analyzing process. • Auto variable finder. • Auto Function Finder.	Make auto-module analyzing process. • Auto comment finder. • Auto-classification variable and constants.	Make python front-end block coding boards with React components. - 1	Make python front-end block coding boards with React components. - 2

Week	8	9	10	11	12	13	14
구동완	• Functional Integration and Bug fixing. • Second demo preparation	• Learning Language for React Native. • Develop UI draw boards - div / span.	Develop UI draw boards – button and Image for react.	Develop UI draw boards – button and Image css for react	Make shadow feature for drawable contents.	• Functional Integration and Bug fixing. • Final Demo preparation. • Make Project with our app, so we can use with Final Demo.	Final Demo
김민지		Develop UI draw boards – view.	Develop UI draw boards – button and Image for react.	Develop UI draw boards – button and Image css for react	Make color picker system for drawable contents.		
최현준		Develop UI draw boards – boards and css for div, span, view.	Develop code-conversion system for above things. - 1	Develop code-conversion system for above things. - 2	Make navigation and simple event system for drawable contents.		

6 Summary

Motivation

- to lower the entry barrier of computer language.
- designer do not concern about developing, they can only concentrate to designing.

Develop Contents

- Code Conversion (Block – Python)
- Code Conversion (Graphic – React)
- SNS Features

Develop Stack

- React.js
- Node.js
- Python3
- Docker