Project Documentation

for the

Procedural City Generator Project

BCIT

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PART I. Executive Summary

Project Objective: The project is to create an auto generator using Python for building city scenes in Maya 2020. It should include a user interface and functions to create elements of the city, extra functions can be included as well such as creating shaders for meshes and dynamic lighting. The project is aiming to be aesthetic and fully functional and can be reused in future projects.

Goals: The Procedural City Generator enables users to efficiently build city scenes based on various users' needs and can be applied to multiple projects. The project helps the organization to reach the goal of improving efficiency thereby saving development costs and time. The developed tool should be seen as a long-term intellectual property of the organization. In addition, multiple derivative assets can be generated from this project.

PART II. Project Definition

Project Scope: The project is a Python script that can be used in Maya 2020 to generate city scenes based on the choice of users. Windy Wen is the project sponsor, supported by BCIT. The project is to deliver the final product within 150 days, with a fully functioning city builder inside Maya software.

Expected Time Frame:
  Week 1: Planning content
  Week 2: Working on UI
  Week 3: Working on UI
  Week 4: Working on Functions
  Week 5: Working on Functions
  Week 6: Accomplish part of the functions.
  Week 7: Working on functions
  Week 8: Working on functions
  Week 9: Working on functions
  Week 10: Working on functions
  Week 11: Debugging

Week 12: Polishing and finishing up

Project Resources: Resources available for the project include Windy's personal computer, fast-speed internet, educational resources from BCIT including assistance of instructors and lab computers, online educational resources, software and applications including Python, Maya, PyCharm, Visual Studio Code, and source control applications.

Project Constraints: The project quality is limited to Windy's current scripting and software abilities and knowledge, and it is for educational purposes. The time constraint is 12 weeks. The project should be done individually and should be able to satisfy the course requirements.

PART III. Risk Assessment

RISK	PROBABILITY	POTENTIAL IMPACT	STEPS TO MANAGE THIS RISK
Time zone differences	high	low	Do things before hands
Lack of professional knowledge	high	high	Seek support from BCIT
Other work conflicting with this project	high	high	Time management

PART IV. Project Progress

FOR THE PERIOD FROM: May 22   **TO: May 29**

CURRENT PROJECT STATUS: preparation phase

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
Finding resources	UI scripting
UI concept design	Script stucture
Learning required techniques	
Conceptualizing	

KEY CHALLENGES:			
CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Technical knowledge	Missing scripting techniques	Low	Google the problem or ask friends

Schedule conflict	Having MBA classes though out the week	High	Make up missing works in the later weeks

FOR THE PERIOD FROM: May 30   **TO: June 6**

CURRENT PROJECT STATUS: UI design

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
Learning UI Scripts	UI scripting
UI scripting (Tabs)	Research online resources for script techniques
Design UI icons (Partial)	

KEY CHALLENGES:			
CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Technical knowledge	Difficulties of applying icons to the script	High	Ask friend or instructors for help

FOR THE PERIOD FROM: June 6   **TO: June 13**

CURRENT PROJECT STATUS: UI design

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
Planning building tab content	Building Tab Functions
UI scripting	Organizing and comment written scripts

KEY CHALLENGES:			
CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Schedule conflict	Having MBA research paper due in 10 days	High	Do my best to catch up the progress

FOR THE PERIOD FROM: Jun 26   **TO: Jul 3**

CURRENT PROJECT STATUS: Developing

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
Building Tab	Shader options
Road / River Tab (Partial)	Lighting
	Terrain
	Extra functions

KEY CHALLENGES:

CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Lack of technical skills	May need more time to do the project for research	low	Watch tutorials and documentations
Schedule conflict	Having classes from other school	high	Time management

FOR THE PERIOD FROM: July 4 **TO: July 11**

CURRENT PROJECT STATUS: Scripting

KEY MILESTONES FOR THIS PERIOD:

ACHIEVED (list)	COMING UP NEXT (list)
Find partner for collaboration	Find specific part of work for cooperation
Part of terrain function	Finish terrain function
Road / River Tab	Begin lighting function

KEY CHALLENGES:

CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Jet lag	Travelling back to Canada	Mid	Stay healthy…

FOR THE PERIOD FROM: July 12 **TO: July 18**

CURRENT PROJECT STATUS: Scripting

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
Terrain function (still need to fix)	Start doing UV
	Testing

KEY CHALLENGES:			
CHALLENGE	POSSIBLE CAUSES	POTENTIAL IMPACT	RECOMMENDED ACTION
Terrain Randomization	Soft selection function didn't apply properly	Mid	Review the script and test using different numbers

FOR THE PERIOD FROM: July 19   **TO: Aug 26**

CURRENT PROJECT STATUS: Review &Testing

KEY MILESTONES FOR THIS PERIOD:	
ACHIEVED (list)	COMING UP NEXT (list)
UV Mapping	User Testing
	Debugging

PART V. Project Reflection

The project was a great challenge for me regarding the time conflicts and knowledge constraints. However, I enjoyed the developing process and learned a lot from the experience, especially the application of "class". This project is the first individual scripting project for me along with my education and I am satisfied with the quality and functionality I have approached. The project can be used for my future projects in Maya to improve my efficiency. There are still many places that need future development and improvements, and I will keep the script up to date when my scripting skills are further enhanced.