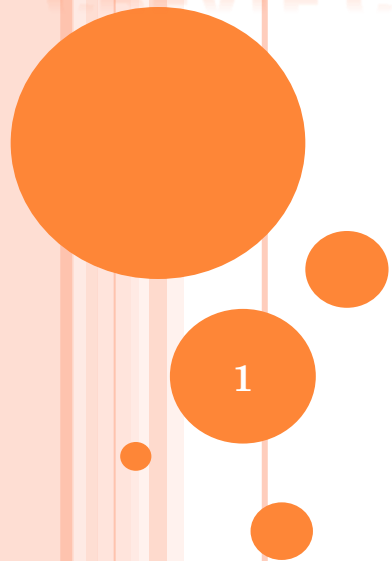


CREATE CFG FROM C CODE(SA)



T7

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Statement of Purpose

- 주어진 C코드를 이용하여 CFG로 변환 시켜주는 것이 주 기능이다.
- UI는 CUI형태로 제공되며 프로젝트 수행 방식은 Command Line 명령어 형태로 제공된다.
- Report는 입력된 코드로 생성된 CFG의 모든 State를 표시해 준다.
- 잘못된 형태의 명령어를 입력했을 시에는 도움말을 출력하도록 한다.
- 프로그램 수행 과정을 CUI로 보여준다.
- 소스코드의 크기는 100~200줄 내외의 프로그램을 대상으로 한다.
- 소스코드는 단일파일로 구성되어야 한다.
- 포인터를 사용하지 않은 소스코드를 대상으로 한다.

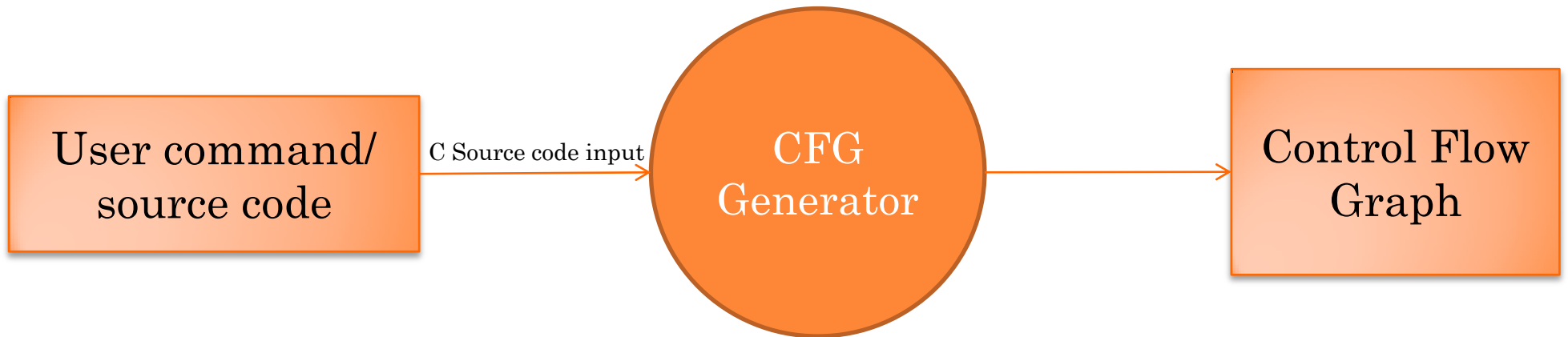
User defined Data Structure

- Graph : array of nodes
array of edges
- Graph g will represent a whole graph on its own.

System requirement

- Language : C
- Platform : cygwin

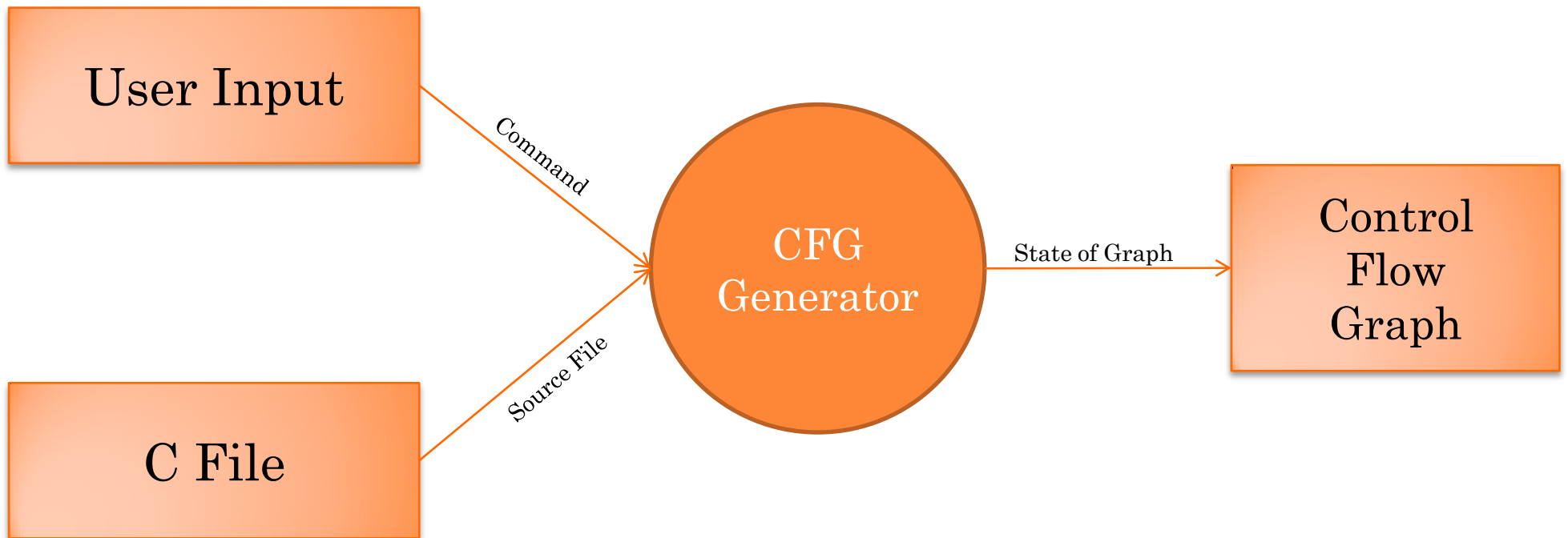
System Context Diagram



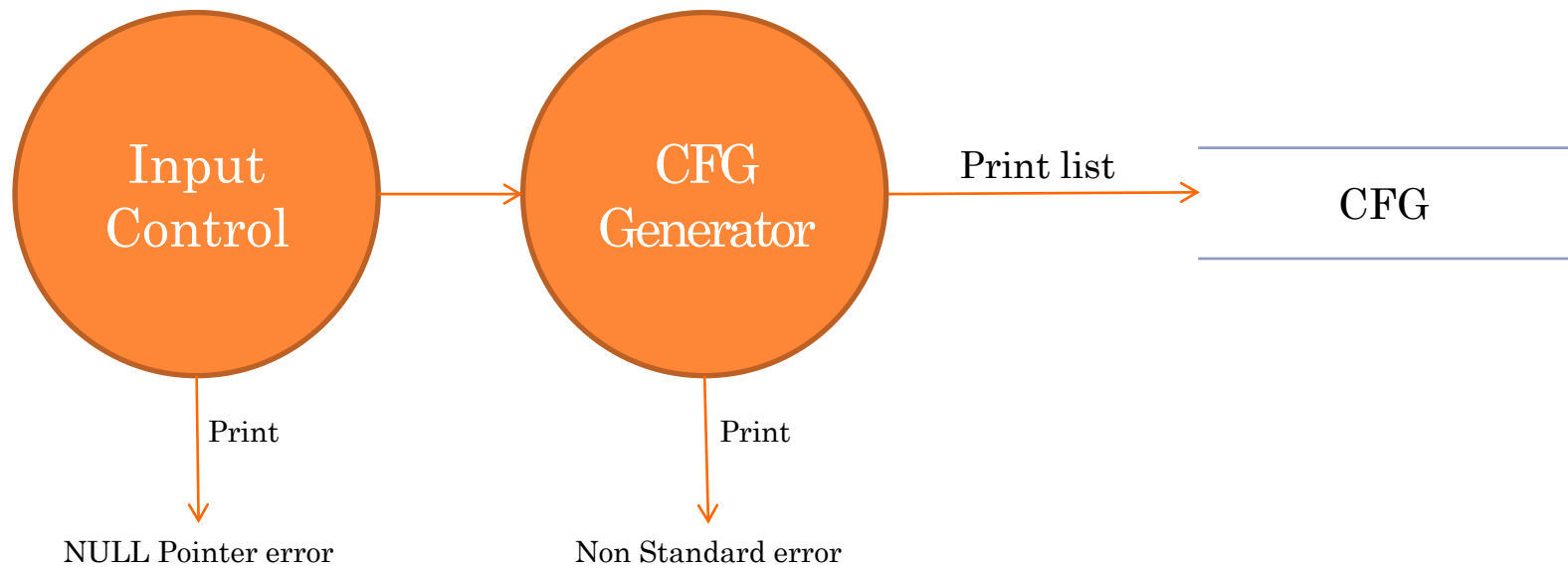
Event List

Input Event	Description
User command source code in C	Receive user command source code in C

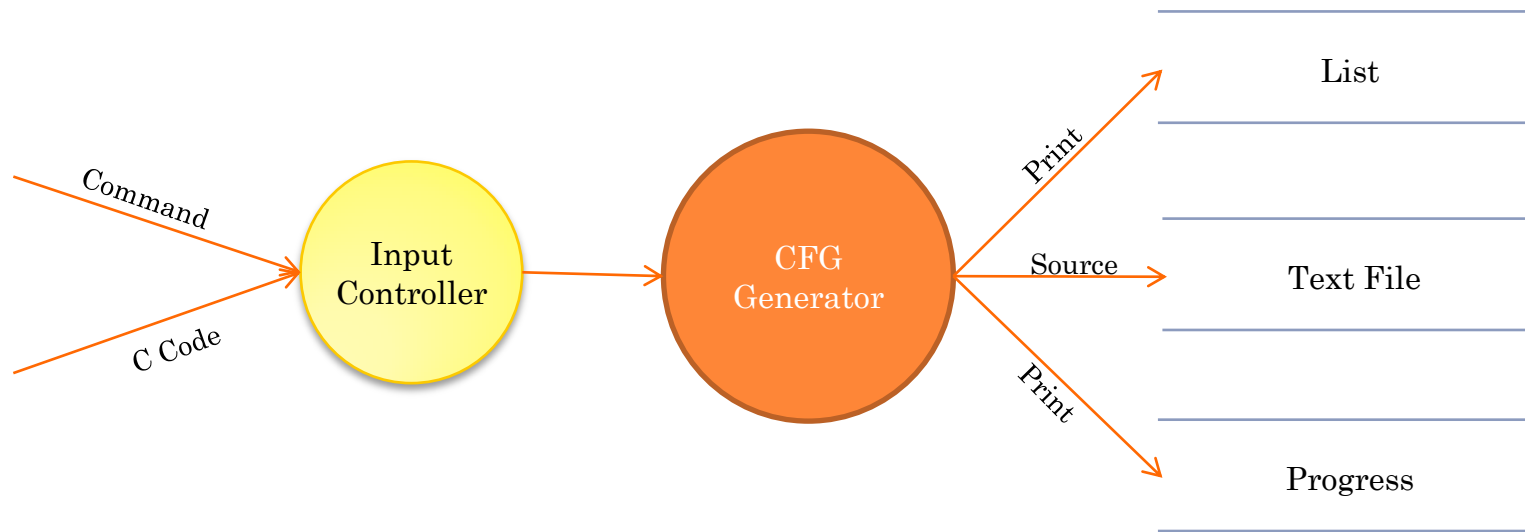
Data Flow Diagram – Level 0.



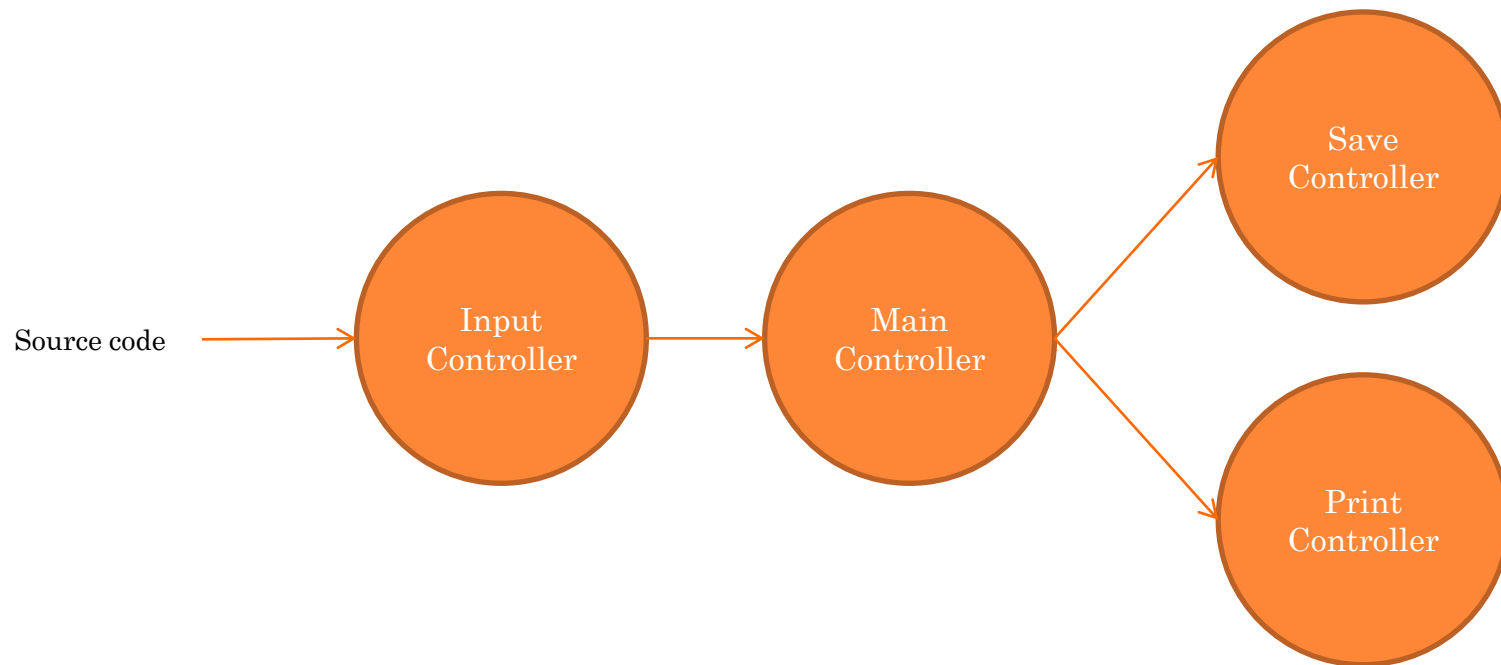
Data Flow Diagram – Level 1.



Data Flow Diagram – Level 2.



Total DFD



Data Dictionary

Data 명	설명
State of graph	Consists of nodes and edges which are all the information needed to represent a graph
Null pointer error	If specified file by use doesn't exist, file will point to null which can be handled and alerts the users.
Non standard error	If the code doesn't not meet the condition that CFG generator can handle, alerts the user that file provided doesn't meet the criteria.

Process Specification

Name	Main Controller
Input	Source Code
Output	Graph
Process Description	Reads a command from user which has source code's path. This function will try to load source code in the path directed by the user. If it is successfully loaded, it will pass the source code to be read by code analyzer and parser, Reads source code and creates list of edges and nodes.

Name	Input Controller
Input	Text line
Output	Depends on the input
Process Description	Reads any input from user and does the command. If user inputs wrong command it shows list of command.

Process Specification

Name	Print Controller
Input	Graph
Output	void
Process Description	This controller will print list of state of graph to console for user to see and also will deal with helping user with command lines, alerting user of the progress and alerting user of the error

Name	Save Controller
Input	Graph
Output	void
Process Description	It will save the list of state of graph to a text file with “_graph” at the end of source code’s file name in txt format