

# Requirements Specification Document

Group number: 02

Lab Section: L01

Team members: Kabishan Suvendran, Franklin Tian, Jiawei Yu, Bowen Zhang

# Graph Module

## Template Module

Graph( $\mathbb{N}$ )

## Uses

YouTuber, Read

## Syntax

### Exported Constants

None

### Exported Types

Graph = ?

### Exported Access Programs

Routine name	In	Out	Exceptions
new Graph	$\mathbb{N}$ , a sequence of YouTuber	Graph	
Vertices		$\mathbb{N}$	
Edges		$\mathbb{N}$	
addEdge	YouTuber, YouTuber		
adj	YouTuber	YouTuber	

## Semantics

### State Variables

vertices:  $\mathbb{N}$

edges:  $\mathbb{N}$

AdjList: a sequence of a sequence of YouTuber

### State Invariant

None

## Assumptions

The constructor Graph should be called before calling any other methods.

## Access Routine Semantics

new Graph(V, L)

- transition: vertices, edges, AdjList := V, 0, L
- output: out := self
- exception: none

Vertices()

- output: out := vertices
- exception: none

Edges()

- output: out := edges
- exception: none

addEdge(v, w)

- transition:  $(v, w : \text{YouTuber} \mid L : \text{a sequence of YouTuber} : (v \in L[0] \wedge L \in \text{AdjList} \Rightarrow L.\text{add}(w)) \vee (w \in L[0] \wedge L \in \text{AdjList} \Rightarrow L.\text{add}(v)))$
- exception: none

adj(YouTuber)

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# YouTuber Module

## Template Module

YouTuber

## Uses

None

## Syntax

### Exported Constants

None

### Exported Types

YouTuber = ?

### Exported Access Programs

Routine name	In	Out	Exceptions
new YouTuber	N, String, N, String, String, String, N	YouTuber	
getCategory_id		N	
getCategory_name		String	
getCountry		String	
getFollowers		N	
getJoinDate		String	
getTitle		String	
getVideos		N	

## Semantics

### State Variables

cat\_id: N

cat\_name: String

country: String  
followers: N  
join\_date: String  
title: String  
videos: String

## State Invariant

None

## Assumptions

The constructor “YouTuber” should be called before calling any other methods.

## Access Routine Semantics

new YouTuber(id, n, c, f, j, t, v)

- transition: cat\_id, cat\_name, country, followers, join\_date, title, videos := id, n, c, f, j, t, v
- output: out := self
- exception: none

getCategory\_id()

- output: out := cat\_id
- exception: none

getCategory\_name()

- output: out := cat\_name
- exception: none

getCountry()

- output: out := country
- exception: none

getFollowers()

- output: out := followers
- exception: none

getJoinDate()

- output: out := join\_date
- exception: none

getTitle()

- output: out := title
- exception: none

getVideos()

- output: out := videos
- exception: none

# Read File Module

## Module

Read

## Uses

YouTuber

## Syntax

### Exported Constants

None

### Exported Types

Read = ?

### Exported Access Programs

Routine name	In	Out	Exceptions
read	String	Read	FileNotFoundException
generateYouTuberList	String	Sequence of YouTuber	

## Semantics

### State Variables

filename: String

list: a sequence of YouTuber

### State Invariant

None

## Assumptions

The method “read” should be called before any other methods.

## Access Routine Semantics

read(f)

- transition: filename := f
- output: out := self
- exception: File does not exist

generateYouTuberList()

- output: out := a sequence of YouTuber
- exception: none