Computing Lab – I

Assignment 4 (OS System Calls)

17 August, 2017

Objective of this Assignment

- To understand OS system calls for process creation, executing applications under multi-process environments and process terminations.

- This is an individual assignment.

Input to the System

- We want to build up a system for getting summarized information from Twitter based on the personal interests of the user.

- Assume that you have a system that can crawl Twitter to collect different tweets at every hour and store them in a database (say, in a file)
  - You don't need to implement the crawler. You can assume that you already have this database of tweets written in a file.

Database (File) Format

#PMOIndia Violence in the name of faith is unacceptable.

Deep Learning can tell a gentleman by his shoes **#DeepLearning #TensorFlow #MachineLearning #ArtificialIntelligence**

India's stature in the world is rising. The world is with us in fighting the menace of terror. I thank all nations helping us doing so: PM **#PMOIndia**

Like <3 or ReTweet this tweet & we will inform you when your fav Nokia 6 is launching on Amazon.in **#UniteFor #Fun #AmazonExclusive**

Microsoft builds autonomous **#AI**-controlled sailplane—able to identify, predict & act on multiple, complex variables http://msft.social/z6dcnz

Warm greetings & good wishes to all my fellow citizens, especially my Parsi brothers & sisters, on the Parsi New Year **#PresidentKovind**

Govt to conduct assessment of learning outcomes on Nov 13 **#QualityEducation #NCERT #Transformingeducation**

- The tweets are associated with some hashtags.

User Input and System Output

- Every user connects to the system, and gives a set of hashtags as an input to the system.

- The system finds out the tweets related to every hashtag.

- The system returns a summarization of those tweets corresponding to every hashtag.

Sample Output

>Enter User:

user123

>Enter hashtags (one at every line, put STOP to stop):

#PMOIndia

#AI

>Enter User:

Summary of hashtags for user123 is written at file summary_user123.txt

Sample Output (Summary File)

#PMOIndia

<summary of the tweets>

#AI

<summary of the tweets>

Process Flow

- The parent process keeps on listening for the inputs (user name and hashtags) from the users.

- Once it gets the input from the user, it creates a child process to handle the summarization.

- The child process filters our relevant tweets, summarize them, and generates the output.

Submission Instructions

- The code needs to be written in C or C++. You can use the solution for Assignment 3 for summarization. Submit the C/C++ source in a single compressed file. The file must contain the name and roll number of the student.

- **Submission Deadline – August 24, 2:00 PM IST**

Marking scheme

- Creating the child process on demand: 20%
- Handling tweet filtering in child process: 25%
- Handling summarization and generating output at the child process: 25%
- Correct termination of child process and correct implementation of parallelism: 10%
- Documentation, coding, understandability: 20%

HAPPY
CODING