Operating Systems

Assignment – 5

Implementation of Multithreading

A. Multithreading Using JAVA

Code:

Main.java

```java
public class Main {
    public static void main(String[] args) {
        System.out.println("Multithreading Demo");
        int n = 12;
        for (int i = 0; i < n; i++) {
            Demo object = new Demo();
            object.start();
        }
    }
}
class Demo extends Thread{
    public void run(){
        try {
            System.out.println("Thread " + Thread.currentThread().getId()+ " is running");
        }
        catch (Exception e){
            System.out.println("Exception is caught");
        }
    }
}
```

Output:

```
Multithreading Demo
Thread 12 is running
Thread 13 is running
Thread 14 is running
Thread 16 is running
Thread 21 is running
Thread 10 is running
Thread 15 is running
Thread 17 is running
Thread 11 is running
Thread 20 is running
Thread 19 is running
Thread 18 is running


...Program finished with exit code 0
Press ENTER to exit console.
```

B. Multithreading Using PTHREAD

Code:

main.c

```c
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <pthread.h>
int g = 0;
void *myThread(void *vargp){
    int *myid = (int *)vargp;
     ++g;
    printf("Thread ID: %d, Global: %d\n", *myid, g);
}

int main(){
    int i;
    pthread_t tid;
    for (i = 0; i < 6; i++)
        pthread_create(&tid, NULL, myThread, (void *)&tid);
    pthread_exit(NULL);
    return 0;
}
```

Output:

```
Thread ID: -1079957760, Global: 1
Thread ID: -1079957760, Global: 2
Thread ID: -1079957760, Global: 3
Thread ID: -1079957760, Global: 4
Thread ID: -1079957760, Global: 5
Thread ID: -1079957760, Global: 6
```

Submitted By:
Harshita Pasupuleti
21BCE8421