## Program 2A Report

## **Screen Shots**

```
[nithis13@csslab11 Program2a]$ g++ driver.cpp
• [nithis13@csslab11 Program2a]$ ./a.out
  scheduler: initialized
 func1: Bothell 0
 func1: Bothell 1
  func1: Bothell 2
  func1: Bothell 3
  func1: Bothell 4
  func2: Seattle 0
 func2: Seattle 1
 func2: Seattle 2
  func2: Seattle 3
  func2: Seattle 4
  func3: Tacoma 0
  func3: Tacoma 1
  func3: Tacoma 2
  func3: Tacoma 3
 func3: Tacoma 4
  func1: Bothell 5
  func1: Bothell 6
  func1: Bothell 7
  func1: Bothell 8
  func1: Bothell 9
  func2: Seattle 5
 func2: Seattle 6
 func2: Seattle 7
  func2: Seattle 8
  func2: Seattle 9
  func3: Tacoma 5
  func3: Tacoma 6
  func3: Tacoma 7
 func3: Tacoma 8
 func3: Tacoma 9
 scheduler: no more threads to schedule
[nithis13@csslab11 Program2a]$
```

An illustration of the stack layers before and after

	Illustrication of Stack before & after &
Context Switching Before	Thurstriention of Stack before  Code  man; Schidulu()  func3()  func2()  func3()  func3()  func3()  func3()  func3()  trap  Spacef1  Spacef2  Tagueue
Context Switching after	Space f3  The queue  Space f3  Func 3 moves back and other  Func 1 & func 2  Func 2 & func 2  Func 3   Func 3   Func 20   func 20    Func 1 & func 20   func 20   func 20    Func 20   Func 20   func 20    Func 3   Func 20    Func 4    F
	Spacefil -memcpy() - Sigalrmo stackgrow Spacefil -memcpy() - Sigalrmo stackgrow stackgrow func2() - activitation data  Spacefil -memcpy() - Sigalrmo stackgrow activitation data  Func2() - activitation data  Schedulall)  Mainti

Each thread has its own stack, which is stored in TCB while it is not active. The scheduler controls these stacks using round-robin scheduling, which creates the illusion of concurrency. The essential context-switching techniques are implemented via capture(), sthread\_yield(), and sthread\_exit(), which save, restore, and free stack states respectively. The thr\_queue guarantees that each thread receives a fair turn, with the round-robin technique performed by putting the active thread's TCB to the rear of the queue after yielding.