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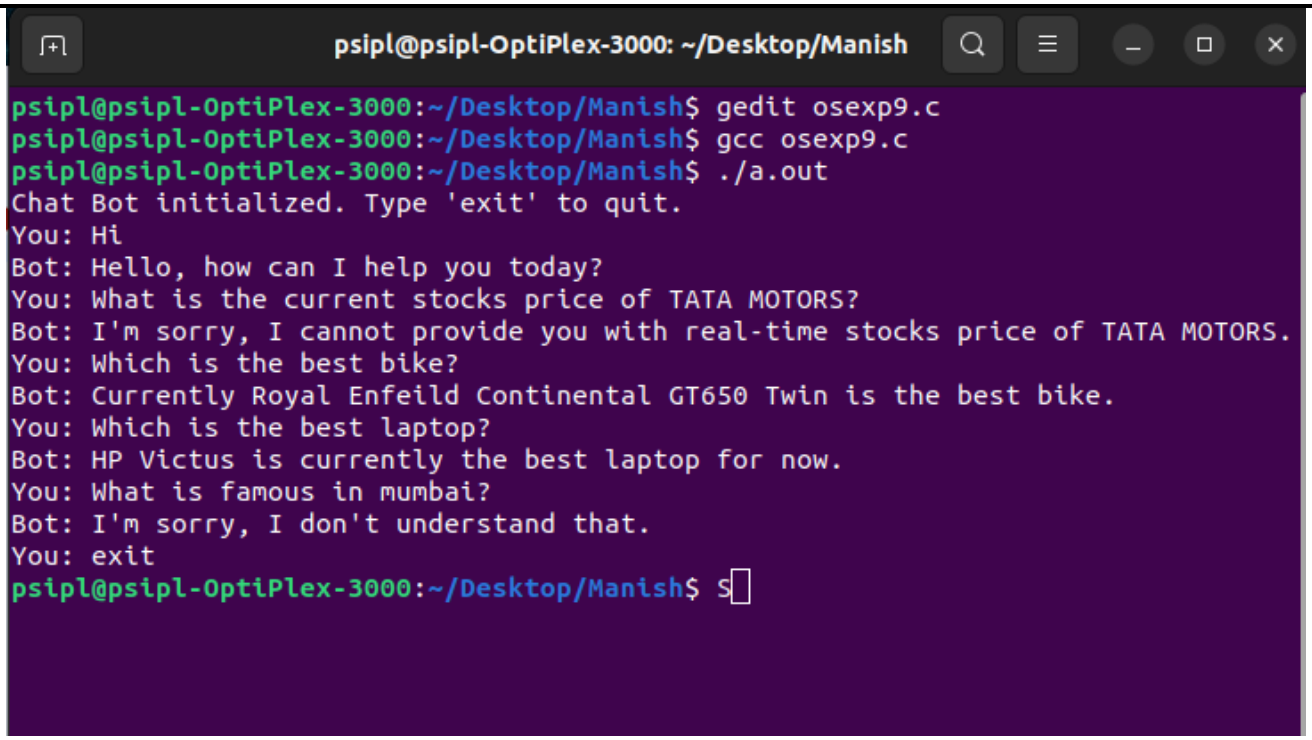
Experiment 9	
Aim	Creating a chatbot and using System V IPC mechanisms to create a shared memory segment.
Code:	

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <sys/ipc.h>
#include <sys/shm.h>

#define SHM_SIZE 1024
#define KEY 1234

// Pre-defined messages
char *responses[] = {
    "Hello, how can I help you today?",
    "I'm sorry, I cannot provide you with real-time stocks price of TATA MOTORS.",
    "HP Victus is currently the best laptop for now.",
    "Currently Royal Enfeild Continental GT650 Twin is the best bike."
};

int main() {
    int shmid;
    char *shmaddr;
    char *user_input = NULL;
    size_t len = 0;
    ssize_t read;

    // Creating a shared memory segment
```

```
    shmid = shmget(KEY, SHM_SIZE, IPC_CREAT | 0666);
    if (shmid == -1) {
        perror("shmget");
        exit(1);
    }

    // Attaching to the shared memory segment
    shmaddr = (char *) shmat(shmid, NULL, 0);
    if (shmaddr == (char *) -1) {
        perror("shmat");
        exit(1);
    }

    printf("Chat Bot initialized. Type 'exit' to quit.\n");

    // Chat loop
    while (1) {

        printf("You: ");
        read = getline(&user_input, &len, stdin);
        if (read == -1) {
            perror("getline");
            exit(1);
        }

        // Responses
        if (strncmp(user_input, "exit", 4) == 0) {
            break;
        } else if (strncmp(user_input, "Hi", 2) == 0) {
            strncpy(shmaddr, responses[0], SHM_SIZE);
        } else if (strncmp(user_input, "What is the current stocks
price of TATA MOTORS?", 37) == 0) {
            strncpy(shmaddr, responses[1], SHM_SIZE);
        } else if (strncmp(user_input, "Which is the best laptop?", 20)
== 0) {
            strncpy(shmaddr, responses[2], SHM_SIZE);
```

```
        } else if (strncmp(user_input, "Which is the best bike?", 18)
== 0) {
            strncpy(shmaddr, responses[3], SHM_SIZE);
        }
        else {
            strncpy(shmaddr, "I'm sorry, I don't understand that.",
SHM_SIZE);
        }

        // Wait for a moment
        sleep(1);

        // Read bot's response from shared memory
        printf("Bot: %s\n", shmaddr);
    }

    // Detaching from the shared memory segment
    if (shmdt(shmaddr) == -1) {
        perror("shmdt");
        exit(1);
    }

    // Cleaning up the shared memory segment
    if (shmctl(shmid, IPC_RMID, NULL) == -1) {
        perror("shmctl");
        exit(1);
    }

    free(user_input);

    return 0;
}
```

Output:	
Conclusion	Hence, by completing this experiment I came to know about creating a chatbot and using System V IPC mechanisms to create a shared memory segment.