[Workshop Report-1]

Student Id : NP03A190051

Student Name : Rishab Sharma

Section : L5CG7

Lecturer : Jnaneshwor Bohara

Module Leader : Hiran Patel

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The following code prints out the value of an int variable and a string (char *) :

```
#include <stdio.h>
void main(int argc, char *argv[])
{
 int age = 10;
 char *name = "Hiran";
 printf("Hello %s, you are %d years old.", name, age);
}
```

1. Now modify the program so that it uses the command line arguments to supply name and age. i.e. it uses the argc and argv arguments/parameters.

   When you run it, it should produce the following:

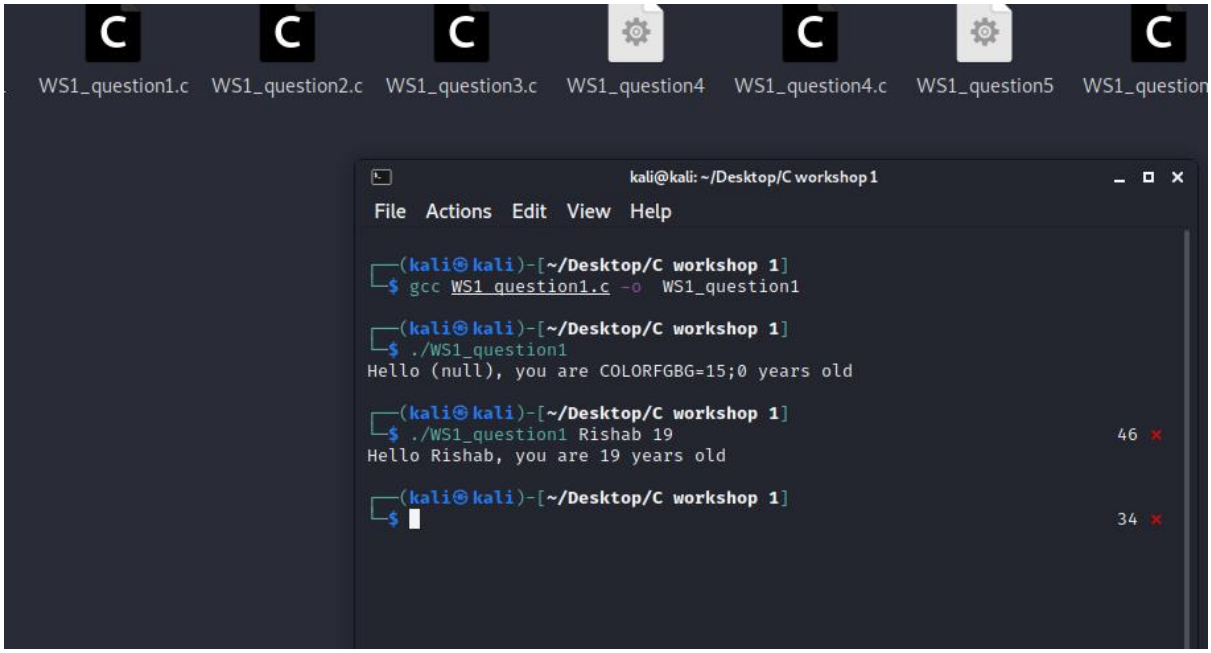
   ./myprog Jnaneshwar 100

   Hello Jnaneshwar, you are 100 years old.

= >

```
#include <stdio.h>
 #include <unistd.h>

void main (int argc, char *argv[])
 {
   printf("Hello %s, you are %s years old", argv[1], argv[2]);
}
```

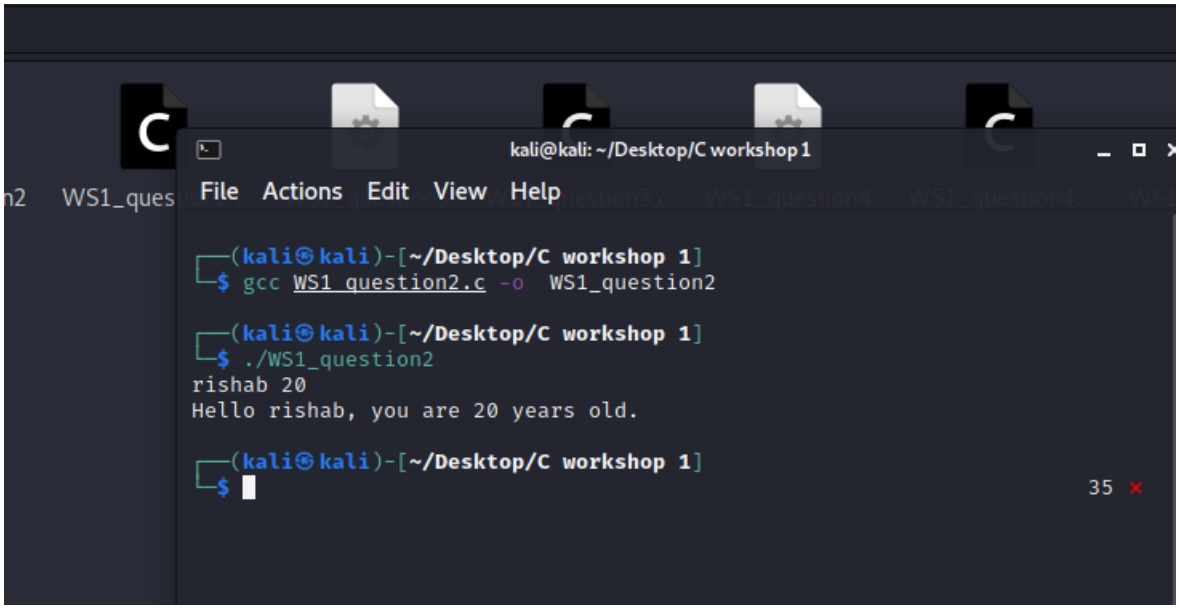


2. Now modify the program again so that it uses the scanf() function to get input from the user for the name and age.

   The following code count the integer variable n from 0 to 9 and prints out “Odd” if n is even and just the value of n if it is even:

   = > #include <stdio.h>

   ```
   void main()
   {
      char name [20];
      int age;
      scanf("%s", name);
      scanf("%d", &age);
      printf("Hello %s, you are %d years old.", name, age);
   }
   ```



3. Now modify the program so that it counts the variable n from 1 to 100 and, if n is a multiple of 2 (eg. 2, 4, 6, etc), it would print out the word “Bish”, and if n is a multiple of 3 (eg. 3, 6, 9. 12 etc), it would print out the word “Bash”, and if n is a multiple of 5 (eg. 5, 10, 15 etc), it would print out the word “Bosh”.

   However, if n is a multiple of 2 and 3 (eg. 6), it would print out the words “BishBash”, and if n is a multiple of 2 and 5 (eg. 10), it would print out the words “BishBosh”, and if n is a multiple of 3 and 5 (eg. 15), it would print out the words “BashBosh”. Finally, if n is a multiple of 2, 3 and 5 (eg. 30), it would print out the words “BishBashBosh”.

   = > #include <stdio.h>

```
void main (int argc, char *argv[]) {
    for (int n=1; n<=100; n++) {

        if(n % 2 == 0 && n % 3 == 0 && n % 5 == 0) {
            printf("BishBashBosh\n");
        }

        else if(n % 3 == 0 && n % 5 == 0) {
            printf("BashBosh\n");
        }

        else if(n % 2 == 0 && n % 5 == 0) {
            printf("BishBosh\n");
        }

        else if(n % 2 == 0 && n % 3 == 0) {
            printf("BishBash\n");
        }
```

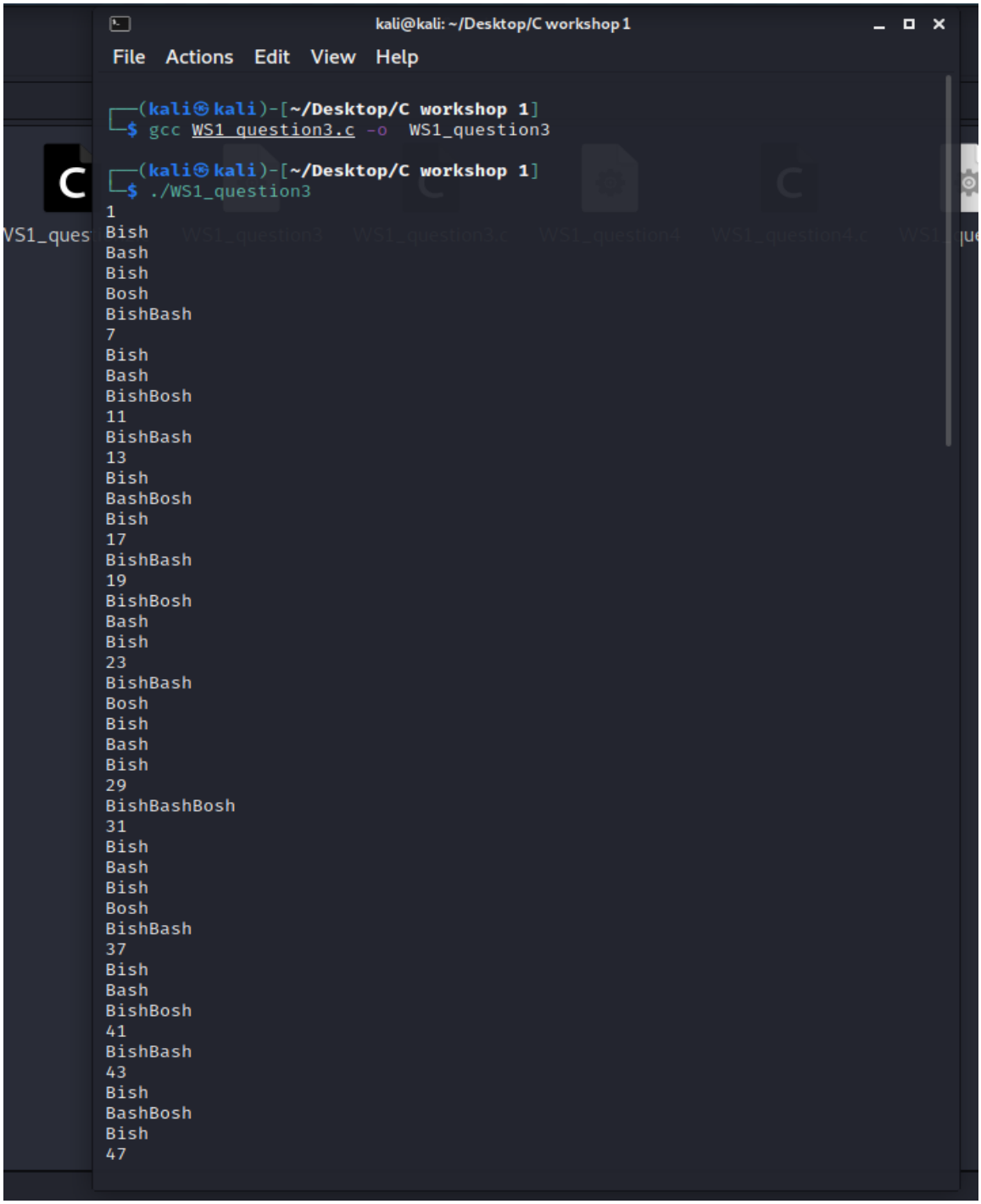
```
        else if(n % 2 == 0) {
            printf("Bish\n");
        }

        else if(n % 3 == 0) {
            printf("Bash\n");
        }

        else if(n % 5 == 0) {
            printf("Bosh\n");
        }

        else if(n % 3 == 0) {
            printf("BishBash\n");
        }

        else {
            printf("%d\n", n);
        }
    }
}
```


kali@kali: ~/Desktop/C workshop 1
File Actions Edit View Help
(kali㉿kali)-[~/Desktop/C workshop 1]
$ gcc WS1_question3.c -o WS1_question3
(kali㉿kali)-[~/Desktop/C workshop 1]
$ ./WS1_question3
1
Bish
Bash
Bish
Bosh
BishBash
7
Bish
Bash
BishBosh
11
BishBash
13
Bish
BashBosh
Bish
17
BishBash
19
BishBosh
Bash
Bish
23
BishBash
Bosh
Bish
Bash
Bish
29
BishBashBosh
31
Bish
Bash
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37
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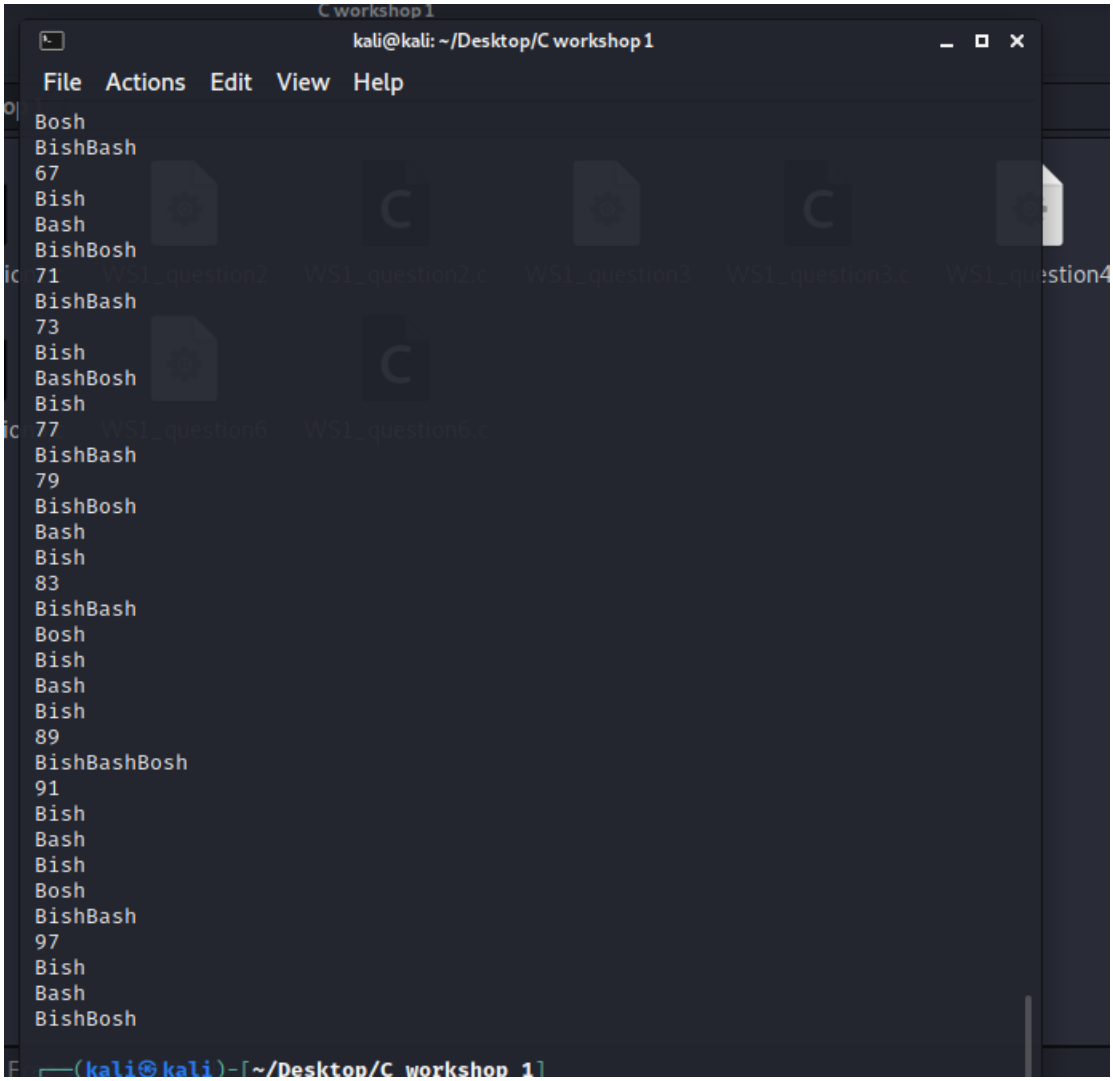
Bash
BishBosh
41
BishBash
43
Bish
BashBosh
Bish
47



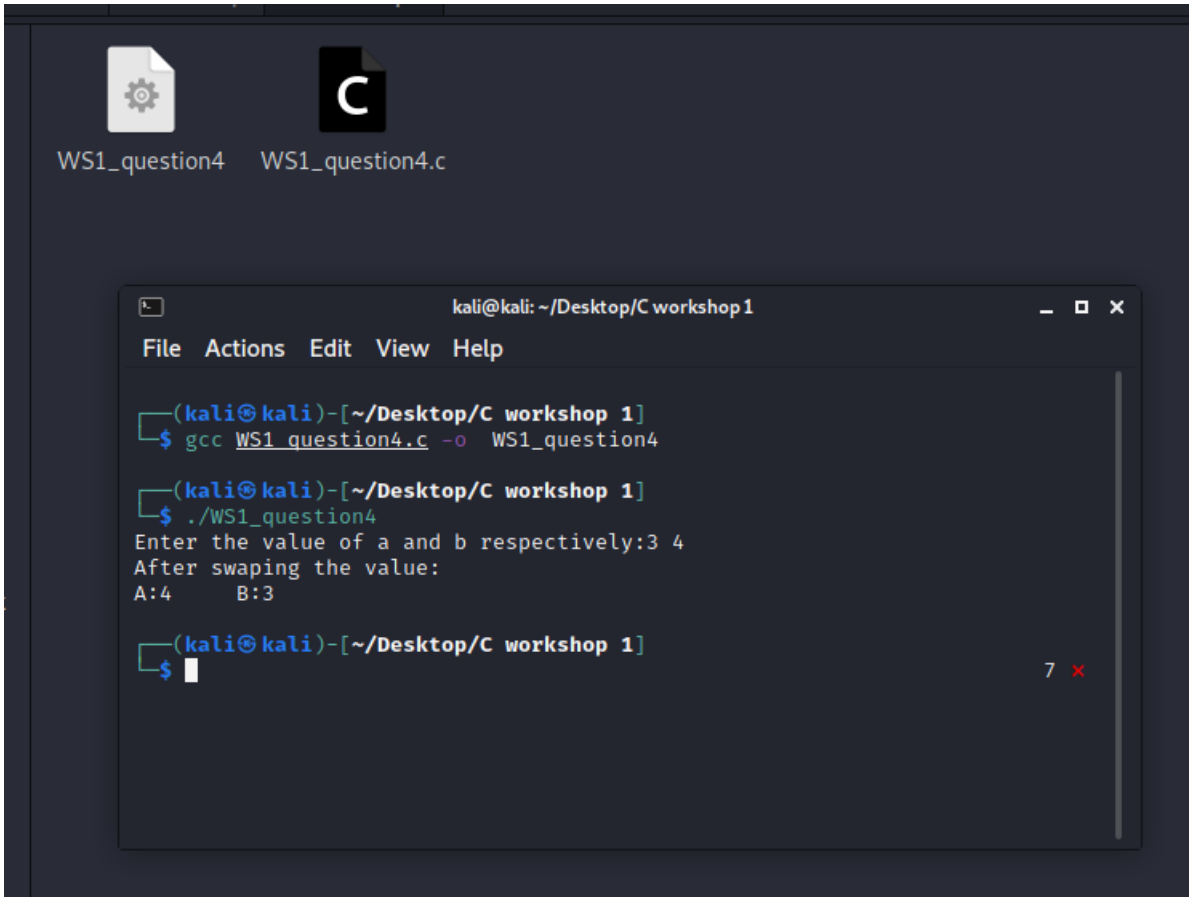
4. Now write a function called swap() that would swap the values of the variables a and b, when you call the swap() with the variables a and b as parameters. Please note, this exercise requires pointers.

   The following program fills an int array of size 10 and fills it with random numbers and prints them out:

   = > #include<stdio.h>

   ```
   void swap(int *a, int *b)
   {
       int temp;
       temp = *a;
       *a = *b;
       *b = temp;
   }
   ```

```
void main()
{
   int a,b;
   printf("Enter the value of a and b respectively:");
   scanf("%d%d",&a,&b);
   swap(&a,&b);
   printf("After swaping the value:\n");
   printf("A:%d\tB:%d",a,b);
}
```



5. Now modify it to will ask the user for a number between 1 and 50, and then use the C function malloc() to allocate an int array of that size, fill it with random numbers and print out the value of each element of that array.

   The following code creates 2 threads in a program and counts to 10 in each thread :

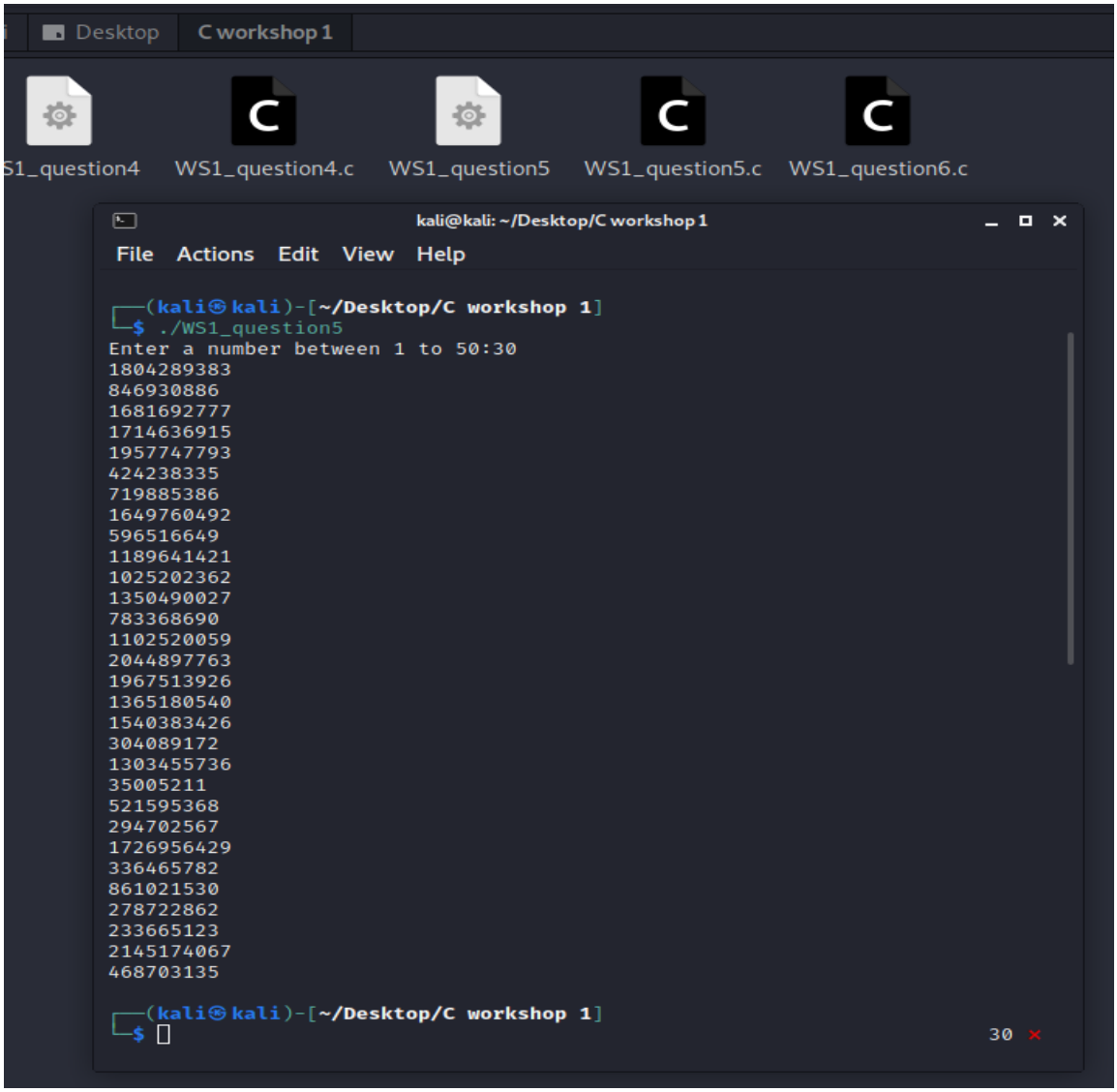
   = > #include<stdio.h>
   #include<stdlib.h>

   ```
   void main(){
      int n,i;  // n is total number of items
      int *p;   //pointer variable
   ```

```
    printf("Enter a number between 1 to 50:");
    scanf("%d",&n);
    p = (int*)malloc(n * sizeof(int));
    for(i=0;i<n;i++){
        *(p+i) = rand();
    }
    for ( i = 0; i < n; i++)
    {

      printf("%d\n",*(p+i));

    }
}
```



6. Modify the program to accept a command line argument to specific the number of threads, and then create that many threads dynamically to run.

= > #include <stdlib.h>
#include <stdio.h>

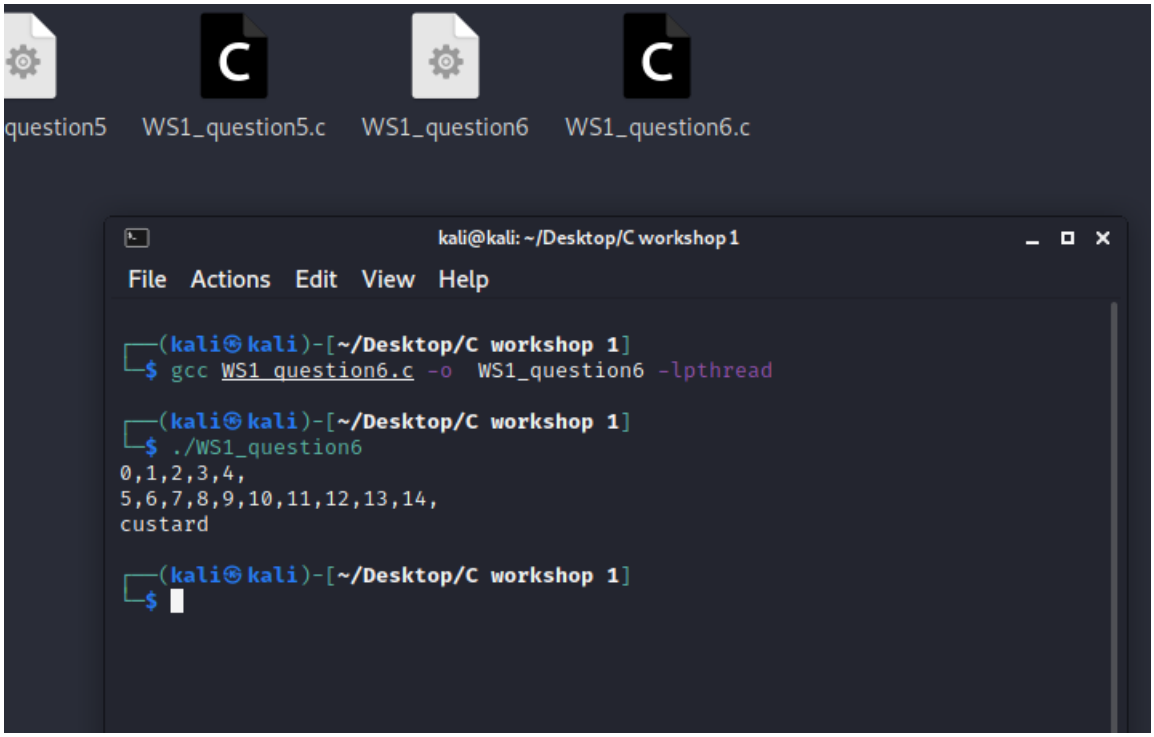
```
int main() {
    int i;
    for(i=0;i<5;i++)
   {
        printf("%d,", i);
    }
    printf("\n");

    while(i<10)
   {
        printf("%d,", i);
        i++;
    }

    do {
        printf("%d,", i);
        i++;
      }
        while(i<15);
        printf("\n");


    if(i>13){
        printf("custard\n");
    } else
   {
        printf("gravy\n");
    }

    return EXIT_SUCCESS;
}
```


question5
WS1_question5.c
WS1_question6
WS1_question6.c
kali@kali: ~/Desktop/C workshop 1
File Actions Edit View Help
┌──(kali㉿kali)-[~/Desktop/C workshop 1]
└─$ gcc WS1_question6.c -o WS1_question6 -lpthread
┌──(kali㉿kali)-[~/Desktop/C workshop 1]
└─$ ./WS1_question6
0,1,2,3,4,
5,6,7,8,9,10,11,12,13,14,
custard
┌──(kali㉿kali)-[~/Desktop/C workshop 1]
└─$