MA 511: Computer Programming

Lecture 22

http://www.iitg.ernet.in/psm/indexing_ma511/y08/index.html

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Semester 1, 2008-09

Mon 10:00-10:55 Tue 11:00-11:55 Fri 9:00-9:55 Class: 1G2

MA512 Lab : Wed 14:00-16:55

Command line parameters

- Without recompiling a program its possible to pass different starting values (special arguments) in an iterations through the empty parentheses of the **main** i.e., **main()**.
- Following two arguments are generally allow most of the C version.
- The parameters to be passed to **main** from OS.

```
main(int argc, char *argv[ ]){

}
```

- argc : an integer variable.
- argv : an array of pointer to characters i.e., an array of strings.
- Each string in this array will represent a parameter that is passes to **main**.

Command line parameters

mainArg.c

```
#include <stdio.h>

main(int argc, char *argv[ ]){

    int i;
    printf("argc = %d\n", argc);
    for(i = 0; i<argc; ++i)
        printf("argv[%d] = %s\n", i, argv[i]);
}
```

```
$ cc mainArg.c -o mainArg
$ ./mainArg my name is Rana
argc = 5
argv[0] = ./mainArg
argv[1] = my
argv[2] = name
argv[3] = is
argv[4] = Rana
```

Command line parameters

mainArg1.c

```
#include <stdio.h>
main(int argc, char *argv[ ]){
    int i, n;
    float sum=0.0, x, term = 1.0;
    sscanf(argv[1], "%f", &x);
    sscanf(argv[2], "%d", &n);
    for(i = 1; i<=n; ++i){
        term *= x/(float)i;
        sum = sum + term;
    }
printf("x = %f, n = %d, sum = %f\n", x,n,sum);
}
```

```
$ cc mainArg1.c -o mainArg1
$ ./mainArg1 0.3 10
x = 0.300000, n = 10, sum = 0.349859
```

Command line parameters

mainArg2.c

```
#include <stdio.h>
main(int argc, char *argv[ ]){
	FILE *fp;
	char ch;
	fp = fopen(argv[1], "r");
	if(fp == NULL) printf("Error for opening a file\n");
	else{
		while(!feof(fp)){
			fscanf(fp, "%c\n",  &ch);
			printf("%c\n", ch);
		}
	}
	fclose(fp1);
}
```

output.dat

```
A
B
C
D
E
F
```

```
$ cc mainArg2.c -o mainArg2
$ ./mainArg2 output.dat
A
B
C
D
E
F
```

Command line parameters

mainArg.c

```
#include <stdio.h>
main(int argc, char *argv[]){
	FILE *fp1;
	int n, i, j=0;
	float x, sum=0.0, term = 1.0;
	fp1 = fopen(argv[1], "r");
	if(fp1==NULL) printf("Error for opening a file\n");
	else{ while(j++!=7){
		fscanf(fp1, "%d %f\n", &n, &x);
		  for(i = 1; i<=n; ++i){
			term *= x/(float)i;
			sum = sum + term;
		  }
		  printf("n = %d, x = %f, sum = %f\n", n, x,sum);
		}
	}
	fclose(fp1);
}
```

inputFile.dat

```
2 0.200000
1 0.800000
3 0.900000
2 0.100000
3 0.700000
4 0.100000
2 0.500000
```

```
$ cc mainArg.c -o mainArg
$ ./mainArg inputFile.dat
n = 2, x = 0.200000,  sum = 0.220000
n = 1, x = 0.800000,  sum = 0.236000
n = 3, x = 0.900000,  sum = 0.258824
n = 2, x = 0.100000,  sum = 0.259028
n = 3, x = 0.700000,  sum = 0.259038
n = 4, x = 0.100000,  sum = 0.259038
n = 2, x = 0.500000,  sum = 0.259038
```