

User Manual: PODEM:

The program has been built using C++. The program can be run from Linux terminal.

README:

1. Unzip the file *DST_project_Mohammad_Adnaan*
2. The circuit files are kept in the following folder

`DST_project_Mohammad_Adnaan/PODEM/files`

3. Edit the file `input_fault_list_podem.txt` kept in this folder to give input fault list for which test vector will be generated.

	16	0
	10	1
Node Number	14	0
	3	1
		Stuck at value

Input fault list file format

4. Navigate to the **src** folder of **PODEM** . All source code files are kept here.

`DST_project_Mohammad_Adnaan/PODEM/src`

5. Run command `vi podem.cpp` and press I in the keyboard to edit the main file in order to select the circuit file and mode parameters.
6. Set the desired circuit file.

```
#include <iostream>
#include <string.h>
#include <stdio.h>
#include <stdlib.h>
#include <assert.h>
#include <fstream>
#include "gates.h"

#include <string>
#include <vector>

char file_name[100]="../files/s349f_2.txt";
char fault_list_file[100]="../files/input_fault_list_podem.txt";

int main()
{
    Node faultx;
    int result,i,j,total_input_faults,initial=0;

    Circuit_init circuit;
    circuit.input_calc(file_name);
    FILE *generetaed_tests;
    FILE *f=freopen(fault_list_file, "r",stdin);
    for(i=1;;i++)
    {
        scanf("%d",&faultx.node_number);
        scanf("%d",&faultx.value);
        if (feof(f)) break;
    }
    total_input_faults=i;
    fclose(f);
    Node* fault_list = (Node*)malloc(sizeof(Node) * total_input_faults);
```

7. After setting the circuit file name press escape in keyboard, type the command `:wq` and press enter to save the changes and exit the file.

8. In the terminal run the command

```
make all
```

9. Run the following command to set execution permission for the program

```
chmod +x podem
```

10. Finally run the following command to run the deductive simulator

```
./podem
```

11. Output results are saved in the file

```
DST_project_Mohammad_Adnaan/PODEM/files/generated_tests.txt
```

12. The generated test vectors file format is as follows:

```
Test for Node 25 stuck at 1:  xxxxxxxxxxxxxxx1xxxxxxxx
Test for Node 51 stuck at 0:  00xxxxxxxxxxxxxxxx0xxxxxxxx
Test for Node 105 stuck at 1:  101xxxx0xxxxxxxxxxxxxxxx
Test for Node 105 stuck at 0:  101xxxx1xxxxxxxxxxxx0xxxx
Test for Node 83 stuck at 1:  01xx001xxx0x01x0xxxxxxxx
Test for Node 92 stuck at 0:  01xxxxx0xxxxxxxxxxxx0xxxxx
Test for Node 198 stuck at 0:  FAILURE
Test for Node 7 stuck at 0:   xxxxxx1xxxxxxxxxxxxxxxx
```