[1.] Несоответствие типов LuNA:C:

LuNA:

import printVal(real) as print;

printVal(1.0);

C:

void printVal(int val){

      printf("%d\", val);

}

Реакция:

```
luna: fatal error: recom-generation failed (see below):
Traceback (most recent call last):
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1697, in <module>
    content=Fa(ja).gen()
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1664, in __init__
    self.Subs[sub_name]=create_sub(self, sub_name)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1653, in create_sub
    return SubStruct(fa, sub_name, None)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1604, in __init__
    parse_bi(self.Items, bi, self.Regs, self)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 826, in parse_bi
    sub=ja[bi['code']]
KeyError: 'printVal'
```

[2.] Несуществующая подпрограмма:

LuNA:

print("129.0");

import printstr(string) as prints; //неверно написано название подпрограммы

Реакция:

```
luna: fatal error: recom-generation failed (see below):
Traceback (most recent call last):
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1697, in <module>
    content=Fa(ja).gen()
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1664, in __init__
    self.Subs[sub_name]=create_sub(self, sub_name)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1653, in create_sub
    return SubStruct(fa, sub_name, None)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1604, in __init__
    parse_bi(self.Items, bi, self.Regs, self)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 826, in parse_bi
    sub=ja[bi['code']]
KeyError: 'print'
```

[3.] Повторная инициализация ФД:

LuNA:

import c_init(int, name) as init;

df x;

init(1, x[1]);

init(2, x[1]);

C:

void c_init(int val, OutputDF &df){

    df.setValue(val);

}

Реакция:

```
[DESKTOP-G3K412L:00919] *** Process received signal ***
[DESKTOP-G3K412L:00919] Signal: Aborted (6)
[DESKTOP-G3K412L:00919] Signal code:  (-6)
[DESKTOP-G3K412L:00919] [ 0] /lib/x86_64-linux-gnu/libc.so.6(+0x3ef10)[0x7fa8fa5a0f10]
[DESKTOP-G3K412L:00919] [ 1] /lib/x86_64-linux-gnu/libc.so.6(gsignal+0xc7)[0x7fa8fa5a0e87]
[DESKTOP-G3K412L:00919] [ 2] /lib/x86_64-linux-gnu/libc.so.6(abort+0x141)[0x7fa8fa5a27f1]
[DESKTOP-G3K412L:00919] [ 3] /usr/lib/x86_64-linux-gnu/libstdc++.so.6(+0x8c957)[0x7fa8fabf7957]
[DESKTOP-G3K412L:00919] [ 4] /usr/lib/x86_64-linux-gnu/libstdc++.so.6(+0x92ae6)[0x7fa8fabfdae6]
[DESKTOP-G3K412L:00919] [ 5] /usr/lib/x86_64-linux-gnu/libstdc++.so.6(+0x92b21)[0x7fa8fabfdb21]
[DESKTOP-G3K412L:00919] [ 6] /usr/lib/x86_64-linux-gnu/libstdc++.so.6(+0x92d54)[0x7fa8fabfdd54]
[DESKTOP-G3K412L:00919] [ 7] /home/inthr/gitrepo/luna/lib/librts.so(_ZN3RTS5_postERK2IdRK2DFi+0x5d1)[0x7fa8fb441f41]
[DESKTOP-G3K412L:00919] [ 8] /home/inthr/gitrepo/luna/build/programs/home/inthr/school2023/test.fa/libucodes.so(_Z7block
_2R2CF+0x161)[0x7fa8ed1938c1]
[DESKTOP-G3K412L:00919] [ 9] /home/inthr/gitrepo/luna/lib/librts.so(+0x3fdf3)[0x7fa8fb43fdf3]
[DESKTOP-G3K412L:00919] [10] /home/inthr/gitrepo/luna/lib/librts.so(_ZN10ThreadPool7routineEv+0x171)[0x7fa8fb44a871]
[DESKTOP-G3K412L:00919] [11] /usr/lib/x86_64-linux-gnu/libstdc++.so.6(+0xbd6df)[0x7fa8fac286df]
[DESKTOP-G3K412L:00919] [12] /lib/x86_64-linux-gnu/libpthread.so.0(+0x76db)[0x7fa8fa1466db]
[DESKTOP-G3K412L:00919] [13] /lib/x86_64-linux-gnu/libc.so.6(clone+0x3f)[0x7fa8fa68361f]
[DESKTOP-G3K412L:00919] *** End of error message ***
luna: fatal error: run-time error: errcode=-6
err> 0 ERROR:   Duplicate id in post: ID<0, 0, 1> ./src/rts/rts.cpp:627
err> 0 ABORT
err> terminate called after throwing an instance of 'RuntimeError'
err>   what():  std::exception
err>
```

[4.] Неверный порядок аргументов в подпрограмме:

LuNA:

import c_init(int, name) as init;

df res;

init(res[0], 10);

Реакция:

```
luna: fatal error: recom-generation failed (see below):
Traceback (most recent call last):
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1697, in <module>
    content=Fa(ja).gen()
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1664, in __init__
    self.Subs[sub_name]=create_sub(self, sub_name)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1653, in create_sub
    return SubStruct(fa, sub_name, None)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1604, in __init__
    parse_bi(self.Items, bi, self.Regs, self)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 828, in parse_bi
    items.append(BiExecExtern(bi, regs, parent))
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1438, in __init__
    BiExec.__init__(self, bi, regs, parent)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1421, in __init__
    ExprIdRef(arg['ref'], self.Regs), self.Regs,
KeyError: 'ref'
```

[5.] Попытка использования неинициализированного ФД:

LuNA:

import c_print(real) as printFloat;

df x;

printFloat(x[0]);

Может произойти, например, из-за неверного определения границ оператора for (обе границы достигаются):

LuNA:

init(1, x[0]);

for i = 0..1 {

    print(x[i]);

}

Реакция: программа зависнет (один блок будет вечно ждать результатов ФВ, хотя самого ФВ нет). Стоит отметить, что ФВ независимы, и программа может частично посчитать необходимое.

[6.] Несовпадение количества аргументов при объявлении и вызове:

LuNA:

```
sub solve(int size, name a, name x, name b, int iterations){
    *тело*
}


sub main(){
    solve(a, x, b, iterations);
}
```

Реакция:

```
luna: fatal error: recom-generation failed (see below):
Traceback (most recent call last):
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1697, in <module>
    content=Fa(ja).gen()
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1664, in __init__
    self.Subs[sub_name]=create_sub(self, sub_name)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1653, in create_sub
    return SubStruct(fa, sub_name, None)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1604, in __init__
    parse_bi(self.Items, bi, self.Regs, self)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 830, in parse_bi
    items.append(BiExecStruct(bi, regs, parent))
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1498, in __init__
    BiExec.__init__(self, bi, regs, parent)
  File "/home/inthr/gitrepo/luna/scripts/fcmp", line 1415, in __init__
    assert len(self.code['args'])==len(self.j['args'])
AssertionError
```

[7.] Двойная инициализация ФД в подпрограмме:

LuNA:

sub main() {

    df x;

    df y;

}

Реакция:

```
luna: compile error: syntax error at ./test.fa:3
    df y;
      ^--here
```

[8.] Несоответствие типов LuNA:
LuNA:
sub main(){
    df x, y, z;
    x = 1;
    y = z;

}

Реакция:

```
luna: compile error: syntax error at ./test.fa:5
    x = 1;
        ^--here


luna: compile error: syntax error at ./test.fa:7
    y = z;
        ^--here
```

[9.] Использование ФД после его удаления:
LuNA:

```
import c_init(int, name) as init;
import c_print(value) as print;
import c_sum(name, value, value) as sum;

sub main() {
    df x;
    init(1, x);

    print(x) @ {
        locator_cyclic : 0;
        delete x;
    };

    print(x) @ { locator_cyclic : 1; };

}
```

C:

```
#include <cstdio>
#include "ucenv.h"

extern "C" {

void c_init(int val, OutputDF &df) {
        df.setValue(val);
}

void c_sum(OutputDF& out, InputDF& in_a, InputDF& in_b) {
    out.setValue(in_a.getValue<int>() + in_b.getValue<int>());
}

void c_iprint(int val) {
        printf("%d ", val);
}

void c_print(InputDF df) {
        printf("%d \n", df.getValue<int>());
}

}
```

Реакция:
программа ссрабатывает