S3 (6) - Cod Cool - MIPS

Tuesday, January 10, 2023 1:30 PM

1 DEFAULT DISPATCH TABLES

Object_dispTab:

.word Object.abort .word Object.type_name

.word Object.copy

IO_dispTab:

.word Object.abort

.word Object.type_name

.word Object.copy

.word IO.out_string

.word IO.out_int

.word IO.in_string

.word IO.in_int

Int_dispTab:

.word Object.abort

.word Object.type_name

.word Object.copy

String_dispTab:

.word Object.abort

.word Object.type_name

.word Object.copy

.word String.length .word String.concat

.word String.substr

Bool_dispTab:

.word Object.abort

.word Object.type_name

.word Object.copy

Main_dispTab:

.word Object.abort

.word Object.type_name

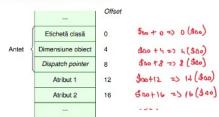
.word Object.copy

.word Main.main

.globl heap_start

ORGANIZARE OBJECT - 500 self digit

Reprezentarea obiectelor în memorie I



3) THREGISTRAREA DE ACTI VARE

evenitos de actinores

Conținut	Adresă
Parametru n	
:	:
Parametru 2	\$fp + 16
Parametru 1	\$fp + 12
\$fp	
\$s0	
\$ra	\$fp
	\$sp

The pegintrarua de adinare cu mariabile LET

$\operatorname{Continut}$	Adresă
Parametru n	
:	:
Parametru 2	\$fp + 16
Parametru 1	\$fp + 12
\$fp	
\$s0	
\$ra	\$fp
Variabilă 1et 1	\$fp - 4
Variabilă 1et 2	\$fp - 8
:	:
Variabilă 1et m	
	\$sp

```
_
```

1

```
class A {
content : String <- "abc";
f(str : String) : String {{
    content <- str.concat(content);
};
};</pre>
```

ohr 2 primul param of lie f => \$fp+1

contat = offset 16 im thing - disp Tab

content = primul abilud at classi => \$100+12

\$ 065 → la apelul de functie

(= sinite of soverni enibro ni mara pa di

```
esen (param m)

our $00 0($0p)

addin $0p $0p -4
```

- (2) se incorrà object de la la la face object (ex: 2.7())
 - · relf => more \$00 \$100

```
· died static (ar: "alic") => la jao str_cont1 -> str_const1:

. word 2
. word 5
. word int_const2
. asciiz "abc"
. asciiz "abc"
. asciiz "abc"
. align 2
```

- innerga iene intéribane lubakeuser.
- bian no ubtagail weifines 3
- (1) in circare advesa dispotel. Table in \$1,
 - (stotică: eQA. LC) -> la 31, A. diop Tab
 - (3) dinamità: ef() -> lu 31, 8(dao) -> diapide str nume la
- opt/one ub řed 8 texto dospolu (doto) (doto) dospolu bezto usorání (doto) (doto) doto) doto ventání (doto)

No with the of the property and the transfer with the class motion of alice against out odds property

```
lw $a0 k ($s0) 7 push content
sw $a0 0($sp)
addiu $sp $sp -4

\[
\left[ $a0 \gamma ($fp) => get dispatch diject (&n)
\]
<verificate dispatch on void>
lw $t1 8($a0) => dispTell
lw $t1 \( \left[ ($t1) => method effect (concent)
jalr $t1
```

```
la $a0 str_const7
sw $a0 0($sp)
addiu $sp $sp -4
lw $a0 12($fp)
<verificare dispatch on void>
la $t1 A_dispTab
lw $t1 12($t1)
jalr $t1
```

```
class A inherits IO {};

class B inherits A{
    f() : A {{
        self@A.out_string("def");
}
```

```
A_dispTab:

.word \( \) Object.abort

.word \( \) Object.type_name

.word \( \) Object.copy

.word \( \) IO.out_string

.word \( \) IO.out_int

.word \( \) IO.in_string

.word \( \) IO.in_int
```

```
la $a0 str_const6 = dif

sw $a0 0($sp) y puch dif

addiu $sp $sp -4 Puch dif

move $a0 $s0 -> logatel di = relf

<verificare dispatch on void>

la $t1 A_dispTab => draw dispatch

lw $t1 12($t1) => multiple affect out_shring in A_dispTab

jalr $t1 sut - draing
```

```
class A {
    v1 : Int;
    v2 : C;
    f(i : Int, c : C) : SELF_TYPE {
            v1 <- i;
            v2 <- c;
             self;
    };
class B inherits A {
    index : Int;
    set(i : Int) : SELF_TYPE {{
        index <- i;
        self;
};
class C { };
class Main inherits IO {
main() : Object {
             let b : B <- new B.f(0, new C)</pre>
             in b.set(0);
            new B.set(0);
```

```
5 propune wirnatowica serv. Miss et apelle B.f (0, new C)
 tak concida? baia nu, alunci cara este secu. Cool come si coras punde?
      la
               $a0 int_const0
      SW
              $a0 0($sp)
      addiu
              $sp $sp -4
               $a0 B_protObj
              Object.copy
      jal
      jal
              B init
 <verificare dispatch on void>
              $t1 8($a0) # dispatch table
      lw
               $t1 16($t1)
      jalr
              $t1
 B_dispTab:
      .word • Object.abort
      .word 4 Object.type_name
      .word % Object.copy
.word % A.f
      .word \ B.set
2) mus B, not (0)
```