[LANGUAGE SPECIFICATION IN JAVA]

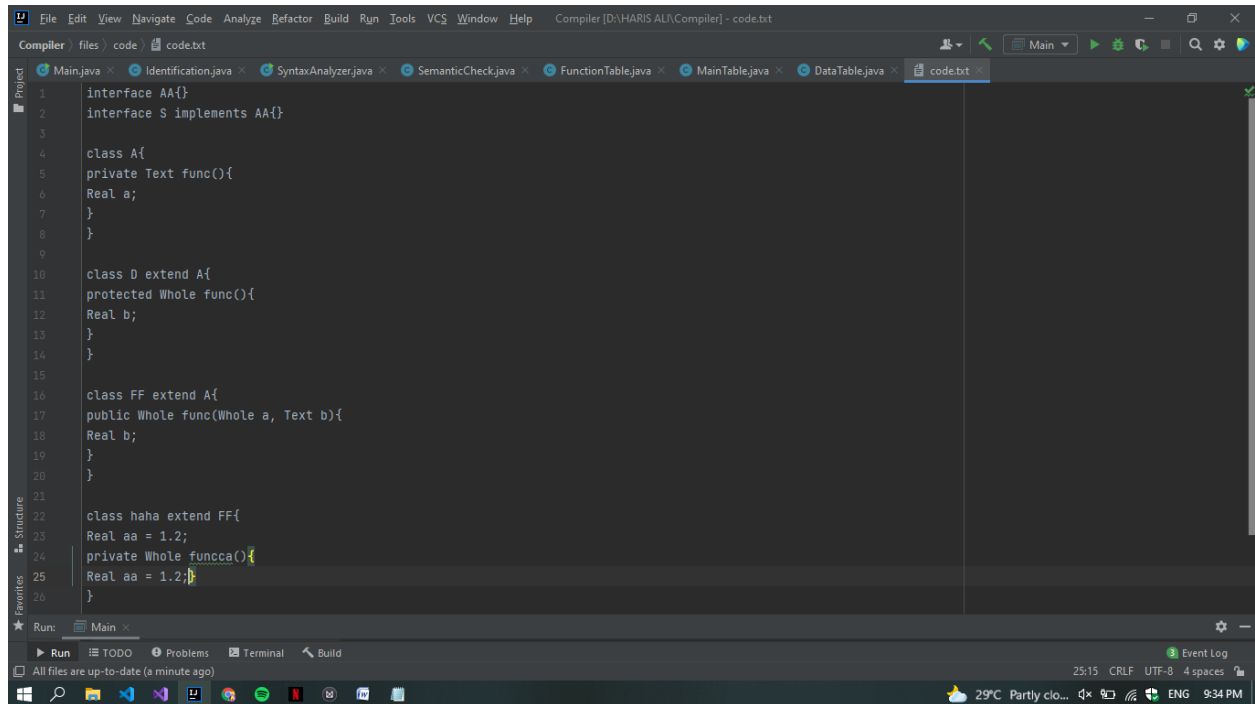**UNIVERSITY OF KARACHI**

COMPILER CONSTRUCTION 501
SUBMITED MISS ARISHA

GROUP MEMBERS
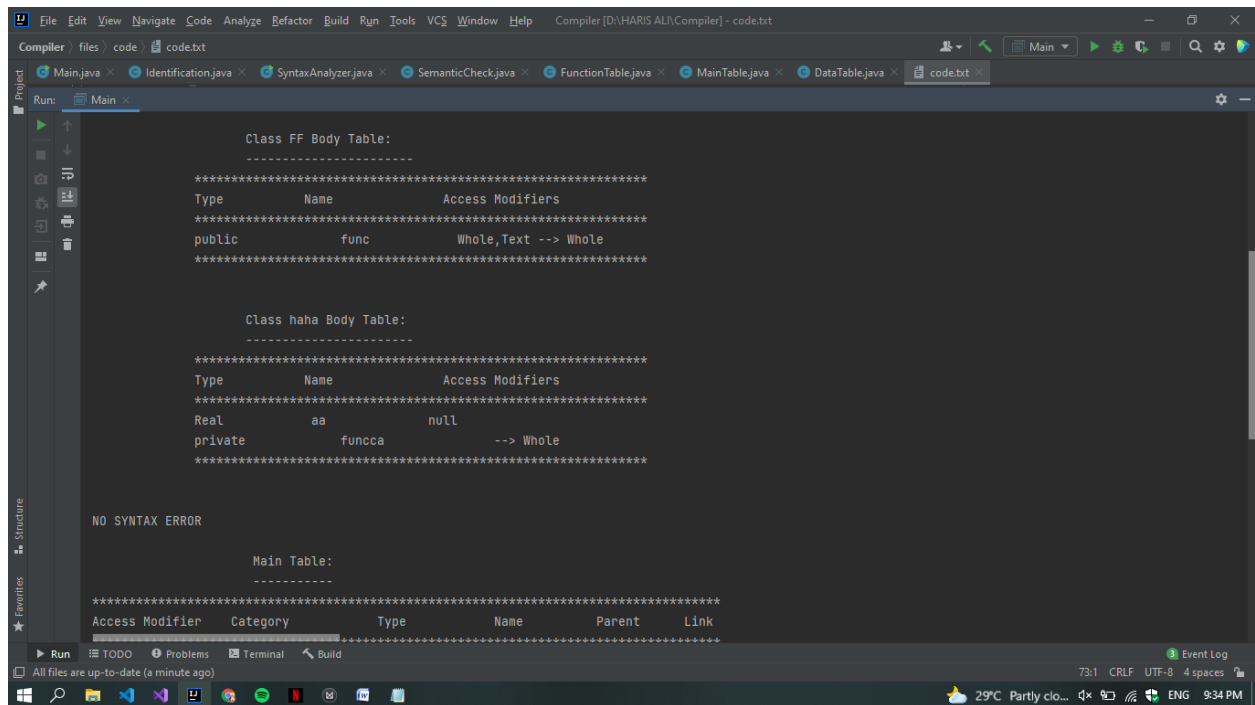
ALI UMAIR EB19103013
HARIS ALI EB19103033
M. ZANAEN ULLAH EB19103089

Question 01:-

Screenshot 1 — code.txt editor

```
interface AA{}
interface S implements AA{}

class A{
private Text func(){
Real a;
}
}

class D extend A{
protected Whole func(){
Real b;
}
}

class FF extend A{
public Whole func(Whole a, Text b){
Real b;
}
}

class haha extend FF{
Real aa = 1.2;
private Whole funcca(){
Real aa = 1.2;
}
}
```

Screenshot 2 — Run output

```
                Class FF Body Table:
                ----------------------

        ********************************************************
        Type          Name            Access Modifiers
        ********************************************************

        public          func            Whole,Text --> Whole
        ********************************************************


                Class haha Body Table:
                ----------------------

        ********************************************************
        Type          Name            Access Modifiers
        ********************************************************

        Real            aa              null
        private          funcca                 --> Whole
        ********************************************************

NO SYNTAX ERROR


                Main Table:
                -----------

********************************************************************
Access Modifier   Category        Type          Name      Parent   Link
```

```
"C:\Program Files\Java\jdk-13.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.1\lib\idea_rt.jar=1104:C:\Program
[INTERFACE, IDENTIFIER, C_B_O, C_B_C, INTERFACE, IDENTIFIER, IMPLEMENTS, IDENTIFIER, C_B_O, C_B_C, CLASS, IDENTIFIER, C_B_O, AM, DATATYPES, IDENTIFIER, R_B_O,
                    Class A Body Table:
                    -------------------

          **********************************************************
          Type            Name            Access Modifiers
          **********************************************************
          private         func            --> Text
          **********************************************************



                    Class D Body Table:
                    -------------------

          **********************************************************
          Type            Name            Access Modifiers
          **********************************************************
          protected       func            --> Whole
          **********************************************************



                    Class FF Body Table:
                    -------------------

          **********************************************************
          Type            Name            Access Modifiers
          **********************************************************
          public          func            Whole,Text --> Whole
```

```
                    Main Table:
                    -----------

**********************************************************************
Access Modifier   Category        Type            Name      Parent     Link
**********************************************************************
null              null            interface       AA                   null
null              null            interface       S         AA
null              General         class           A         null
null              General         class           D         A
null              General         class           FF        A
null              General         class           haha      FF
**********************************************************************



                    Function Table:
                    ---------------

          **********************************************************
          Type            Name            Scope
          **********************************************************
          Real            a               2
          Real            b               4
          Whole       a               6
          Text            b           6
          Real            b           6
          Real            aa          8
```

Question 02:-

IDE window showing code.txt with the following source code:

```
class A{
Whole a ;
Whole c = a+b;
}

class B {
A a = new A();
Whole b = a.c;
}
```

Run console output:

```
"C:\Program Files\Java\jdk-13.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.1\lib\idea_rt.jar=1084:C:\Program
[CLASS, IDENTIFIER, C_B_O, DATATYPES, IDENTIFIER, S_C, DATATYPES, IDENTIFIER, ASSIGN, IDENTIFIER, PM, IDENTIFIER, S_C, C_B_C, CLASS, IDENTIFIER, C_B_O, IDENTI
                Class A Body Table:
                ----------------------

        **************************************************************
        Type            Name            Access Modifiers
        **************************************************************
        Whole           a               null
        Whole           c               null
        **************************************************************


SYNTAX ERROR
SYNTAX ERROR
SYNTAX ERROR
```