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Semantic Errors

Compilers course

Masters in Informatics and Computing Engineering (MIEIC), 3rd Year

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Exercise 1

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them

```
int f1(int A[]) {  
    int i = -1;  
    return A[i];  
}
```

(a)

```
int f2(boolean b) {  
    int c;  
    if(b) {  
        c=1;  
    } else {  
        c=2;  
    }  
    return c;  
}
```

(b)

```
int f3(int A[]) {  
    int b=1;  
    int c;  
    while(b < 20) {  
        c=b;  
        b++;  
    }  
    return c;  
}
```

(c)

✗ javac error

✓ javac no error

Exercise 1

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them

Semantic Error!

```
int f1(int A[]) {  
    int i = -1;  
    return A[i];  
}
```



(a)

```
int f2(boolean b) {  
    int c;  
    if(b) {  
        c=1;  
    } else {  
        c=2;  
    }  
    return c;  
}
```



(b)

Semantic Error!

```
int f3(int A[]) {  
    int b=1;  
    int c;  
    while(b < 20) {  
        c=b;  
        b++;  
    }  
    return c;  
}
```



(c)

Exercise 2

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them

```
int f4(int b) {  
    int c;  
    if(b>1)  
        if(b<10) c=1;  
        else c = 2;  
    else c=2;  
    return c;  
}
```

(a)


```
int f5(int b) {  
    int c;  
    if(b>1) {  
        if(b<10) c=1;  
        if(b>=10) c = 2;  
    } else c=2;  
    return c;  
}
```

(b)

```
int f6(int b) {  
    int c;  
    if(b>1)  
        if(b<10) c=1;  
        else  
            if(b==3) c = 2;  
            else  
                if(b==2) c = 4;  
                else c = 5;  
    else c=2;  
    return c;  
}
```

(c)


 javac error

 javac no error


Exercise 2

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them


```
int f4(int b) {  
    int c;  
    if(b>1)  
        if(b<10) c=1;  
        else c = 2;  
    else c=2;  
    return c;  
}
```

(a) 

```
int f5(int b) {  
    int c;  
    if(b>1) {  
        if(b<10) c=1;  
        if(b>=10) c = 2;  
    } else c=2;  
    return c;  
}
```

(b) 

```
int f6(int b) {  
    int c;  
    if(b>1)  
        if(b<10) c=1;  
        else  
            if(b==3) c = 2;  
            else  
                if(b==2) c = 4;  
                else c = 5;  
    else c=2;  
    return c;  
}
```


(c) 

Exercise 3

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them

```
public static void main(String args[]) {  
    int d1, d2;  
    int a= 5;  
    int b=2;  
    double c =2d;  
  
    d1 = (int) (a*b*c);  
    d2 = (int) a*b*c;  
    System.out.println("d1: "+d1+"\n");  
    System.out.println("d2: "+d2+"\n");  
}
```

 javac error

 javac no error

Exercise 3

- Discuss the possible semantic errors and if you expect that javac (the java compiler) reports them

Semantic Error!

```
public static void main(String args[]) {  
    int d1, d2;  
    int a= 5;  
    int b=2;  
    double c =2d;  
  
    d1 = (int) (a*b*c);  
    d2 = (int) a*b*c;  
    System.out.println("d1: "+d1+"\n");  
    System.out.println("d2: "+d2+"\n");  
}
```




Exercise 4

- Discuss the possible semantic errors and if you expect that javac reports them

```
long a = 140737488355328;
```


 javac error

 javac no error

Exercise 4

- Discuss the possible semantic errors and if you expect that javac reports them

Semantic Error!

```
long a = 140737488355328;
```

