

QUESTION #1 <30 points >

```
import java.util.*;
import type.lang.*;

public class CodeStyle
{
    public static void main(String[] ar)
    {
        IO.print("Filename: ");
        String inFile = IO.readLine();
        String outFile = "Styled" + inFile;
        UniReader ur = new UniReader(inFile);
        UniWriter uw = new UniWriter(outFile);
        int indent = 0;
        for (String rec = ur.readLine(); !ur.eof(); rec = ur.readLine())
        {
            rec = rec.trim();
            if (rec.length() > 0 && rec.charAt(0) == '{')
            {
                indent--;
            }
            uw.print(IO.repeat(indent, '\t'));
            StringTokenizer stk = new StringTokenizer(rec);
            for (; stk.hasMoreTokens(); )
            {
                String token = stk.nextToken();
                if (token.equals("{")
                {
                    uw.print("\t");
                    indent++;
                } else
                {
                    uw.print(token + " ");
                }
            }
            uw.println();
        }
        ur.close();
        uw.close();
        IO.print("Done. The file: \" + outFile + "\"");
        IO.println("has been generated.");
    }
}
```

Marking Guideline

Give 30, 22, 15, 8, or 0. A few minor errors lead to 22, one major error leads to 15, and two or three major errors lead to 8. The key points are:

- An outer loop to read lines (major)
- An inner loop to tokenize the line (major)
- Outputting the tokens delimited by spaces (major)
- Indenting (major)
- Adding a tab after a '{' (minor)
- Reducing the indent upon encountering a '}' (minor)

QUESTION #2A <15 points >

Marking Guideline

For each question, give +3 if correct, +2 if almost correct, or zero.

- Incorrect
Should be 700 (without quotes)
- Incorrect
Should be `new Route(11)`
Alternatively, can start by: `Route r = new Route(11);`
and then passing `r`
- Incorrect
Should be `Trip.UP`
(this is a static field; it is accessed on the class name)
- Incorrect
Should be `new Time(11,30)`
Alternatively, can start by: `Time s = new Time(11, 30);`
and then passing `s`
- Incorrect
Should be `new Time(13,15)`
Alternatively, can start by: `Time e = new Time(13, 15);`
and then passing `s`

QUESTION #2B <15 points>

Marking Guideline

For each question, give +3 if the answer is correct, +2 if the answer does not give an explanation as to what is wrong, or zero.

- Incorrect
No such method in the Trip class
- Correct
The output is: Steeles
- Correct
The output is: 11 : 30
- Incorrect
Invalid invocation: Route is a class name!
- Incorrect
The add method is void.

Give +1 if the answer is 13 : 25.

QUESTION #3A <10 points >

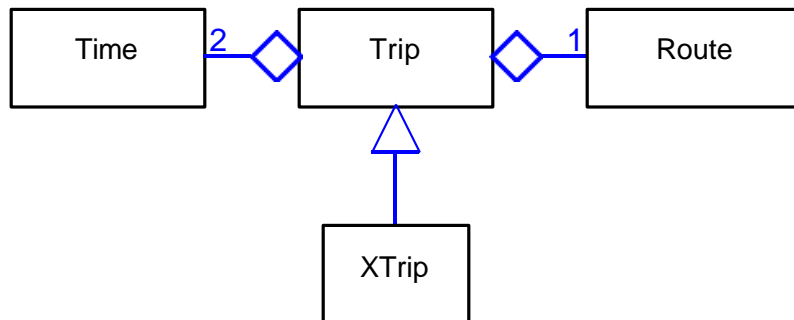
Marking Guideline

For each part, give +5.

QUESTION #3A.1

- Inherited
`getVehicleNumber()`, `getRoute()`, `getDirection()`,
`getStartTime()`, `getEndTime()`, `equals(Object)`
- Overriding
`toString()`
- Cross-Class Overloading
`equals(XTrip)`
- New
`getSavedTime()`

QUESTION #3A.2



QUESTION #3B <30 points >

Marking Guideline

For each part, give +2.5.

QUESTION #3B.1

```
Time start = new Time(10:05);
Time end = new Time(11:40);
t1 = new Trip(20, new Route(11), Trip.UP, start, end);
```

We could have also written:

```
t1 = new Trip(20, new Route(11), Trip.UP, new Time(10:05), new Time(11:40));
```

QUESTION #3B.2

```
Time start = new Time(10:05);
Time end = new Time(11:40);
t2 = new XTrip(20, new Route(11), Trip.UP, start, end);
```

QUESTION #3B.3

```
Time start = new Time(10:05);
Time end = new Time(11:40);
t3 = new Trip(20, new Route(11), Trip.DOWN, start, end);
```

QUESTION #3B.4

```
Time start = new Time(11:45);
Time end = new Time(13:40);
t4 = new Trip(20, new Route(11), Trip.DOWN, start, end);
```

QUESTION #3B.5

A Transit Trip

The toString method is overridden and its late binding here is to Trip.

QUESTION #3B.6

An Express Transit Trip

The toString method is overridden and its late binding here is to XTrip.

QUESTION #3B.7

An Express Transit Trip

The toString method is overridden and its late binding here is to XTrip.

QUESTION #3B.8

Syntax Error

The `getSavedTime` method is not in `Trip` so early binding will fail.

QUESTION #3B.9

`true`

`equals` is *not* overridden so early binding prevails and it is to `Trip`. Since the two trips have the same route, direction, and start/end times, the return is `true`.

QUESTION #3B.10

`false`

`equals` is *not* overridden so early binding prevails and it is to `Trip`. Since the two trips have different directions, the return is `false`.

QUESTION #3B.11

`false`

`equals` is *not* overridden so early binding prevails and it is to `XTrip` after the cast. `XTrip` has two (overloaded) methods and the one that fits the signature is the one inherited from `Trip`. Hence, this is the same as the previous question.

QUESTION #3B.12

`true`

`equals` is *not* overridden so early binding prevails and it is to `XTrip` after the cast. `XTrip` has two (overloaded) methods and the one that fits the signature is the one in `XTrip` (due to the parameter cast). And since `equals` in `XTrip` does not check directions, the answer is `true`.