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Lab 5

1. Random Data
2. Int val
3. Switch (type)
4. Case U: case u
5. Val = Math.floor(a+Math.random\*(b+1-a))
6. Break
7. Case E: case e
8. Val = Math.floor(-1\*a\*naturalLog(Math.random))
9. Break
10. Case N: case n
11. Val = Math.floor(a + b\*cosine(2pi\*Mathrandom)\*squareroot(-2\*naturalLog(Math.random)))
12. break
13. Default:
14. Val = Math.floor(a+Math.random\*(b+1-a))
15. break
16. Return val
17. FederalTax

**Federaltax class**

1. Private double taxableIncome
2. Private final double TAXBRACKET(1 to 5), TAXPERCENT(1 to 5), TAXBASE(1 to 5)
3. Private final numberformat dollar = numberformat.getcurrencyinstance()
4. Public FederalTax()
5. Taxableincome = 0
6. Public FederalTax(double income)
7. Taxableincome = income
8. Public double getincome()
9. Return taxableincome
10. Public void changeincome(double newincome)
11. Taxableincome = newincome
12. Public double taxPaid()
13. If taxableincome less than 22100 and greater than 0
14. Taxpaid = 0.15 \* taxableincome
15. If 22100 <= taxableincome <= 53500
16. Taxpaid = 3315 + 0.28 \* taxableincome
17. If 53500 <= taxableincome <= 115000
18. Taxpaid = 12107 + 0.31 \* taxableincome
19. If 115000 <= taxableincome <= 250000
20. Taxpaid = 31172 + 0.36\* taxableincome
21. If taxableincome greater than 250000
22. Taxpaid = 79772 + 0.396 \* taxableincome
23. Return taxpaid
24. Public string toString()
25. Return (“taxable income: “ + dollar.format(taxableincome )+ “ tax paid: “ + dollar.format(taxpaid))

**federaltaxApp**

1. create objects that classifies into each brackets(bracket 1 to 5)
2. prints each object(taxable income = … tax paid = …
3. asks user for their income
4. prints their taxable income and tax paid

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| --- | --- | --- | --- |
| Test Case | Sample Data | Expected Result | Tested? |
| Negative Value | -10 | Taxable income = 0  tax paid = 0 | yes |
| Bracket 1 | 10000 | Taxable income = $10,000  tax paid = $1,500 | yes |
| Bracket 2 | 50000 | Taxable income = $50,000  tax paid = $17,315 | yes |
| Bracket 3 | 100000 | Taxable income = $100,000  tax paid = $43,107 | Yes |
| Bracket 4 | 200000 | Taxable income = $200,000  tax paid = $103,172 | Yes |
| Bracket 5 | 300000 | Taxable income = $300,000  tax paid = $198,572 | yes |