

System Test Plan - Paycheck Program

Requirements

Raleigh's Parks and Recreation Department hires landscapers to care for and maintain the city's parks.

An employee has one of three skill levels; each with a hourly pay rate:

Skill Level - Hourly Pay Rate (\$)

Level 1 - \$19.00

Level 2 - \$22.50

Level 3 - \$25.75

All employees may opt in for insurance, which results in a deduction from their pay check.

Deduction - Weekly Cost (\$)

Option 1 - Medical Insurance - \$24.50

Option 2 - Dental Insurance - \$15.30

Option 3 - Vision Insurance - \$5.25

Employees at skill level 3 may also opt to place up to 6% of their gross pay into a retirement account.

The following information is printed about the employee's pay check: 1) employee's name 2) hours worked for a week 3) hourly pay rate 4) regular pay for up to 40 hours worked 5) overtime pay (1.5 pay rate) for hours over 40 worked 6) gross pay (regular + overtime) 7) total deductions 8) net pay (gross pay – total deductions). If the net pay is negative, meaning the deductions exceeds the gross pay, then an error is printed.

System Test Plan - Paycheck

The `Paycheck` program prompts the user for information about the Employee, including the name, level (1, 2, or 3), hours worked, retirement percent, and whether he or she has medical, dental, and vision insurances. This program assumes a perfect user. There is no error checking for user input based on data type.

The following commands compile and run the `Paycheck` program:

```
$ javac -d bin src/Paycheck.java
```

```
$ java -cp bin Paycheck
```

System Test Plan

The text in bold in the **Description** column represents the test inputs to the program. You can stop program execution by pressing Ctrl+C.

System Test Plan - Paycheck

Test ID	Description	Expected Results	Actual Results																												
Boundary regular hours, All insurances, Level 1	Preconditions: Paycheck program started Employee Name: Alice Anderson Employee Level: 1 Hours Worked: 0 Medical Insurance (Y/N): Y Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y	<Error Message>																													
Boundary regular hours, Two insurances, Level 1	Preconditions: Paycheck program started Employee Name: Bob Baker Employee Level: 1 Hours Worked: 1 Medical Insurance (Y/N): N Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y	<Error Message>																													
Mid-range regular hours, Two insurances, Level 1	Preconditions: Paycheck program started Employee Name: Carol Cole Employee Level: 1 Hours Worked: 10 Medical Insurance (Y/N): Y Dental Insurance (Y/N): N Vision Insurance (Y/N): Y	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Carol Cole</td> <td>10.00</td> <td>19.00</td> <td>190.00</td> <td>0.00</td> <td>190.00</td> <td>29.75</td> </tr> <tr> <td></td> <td></td> <td></td> <td>160.25</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Carol Cole	10.00	19.00	190.00	0.00	190.00	29.75				160.25				
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Carol Cole	10.00	19.00	190.00	0.00	190.00	29.75																									
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System Test Plan - Paycheck

Test ID	Description	Expected Results	Actual Results																												
Boundary regular hours, One insurance, Level 1	Preconditions: Paycheck program started Employee Name: Frank Frankenstein Employee Level: 1 Hours Worked: 40 Medical Insurance (Y/N): Y Dental Insurance (Y/N): N Vision Insurance (Y/N): N	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Frank Frankenstein</td> <td>40.00</td> <td>19.00</td> <td>760.00</td> <td>0.00</td> <td>760.00</td> <td>24.50</td> </tr> <tr> <td>735.50</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Frank Frankenstein	40.00	19.00	760.00	0.00	760.00	24.50	735.50							
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Mid-range overtime hours, No insurance, Level 1	Preconditions: Paycheck program started Employee Name: Hilda Henderson Employee Level: 1 Hours Worked: 50 Medical Insurance (Y/N): N Dental Insurance (Y/N): N Vision Insurance (Y/N): N	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Hilda Henderson</td> <td>50.00</td> <td>19.00</td> <td>760.00</td> <td>285.00</td> <td>1045.00</td> <td>0.00</td> </tr> <tr> <td>1045.00</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Hilda Henderson	50.00	19.00	760.00	285.00	1045.00	0.00	1045.00							
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Hilda Henderson	50.00	19.00	760.00	285.00	1045.00	0.00																									
1045.00																															
Boundary regular hours, All insurances, Level 2	Preconditions: Paycheck program started Employee Name: Alice Anderson Employee Level: 2 Hours Worked: 0 Medical Insurance (Y/N): Y Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y	<Error Message>																													
Boundary regular hours, Two insurances, Level 2	Preconditions: Paycheck program started Employee Name: Bob Baker Employee Level: 2 Hours Worked: 1 Medical Insurance (Y/N): N Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bob Baker</td> <td>1.00</td> <td>22.50</td> <td>22.50</td> <td>0.00</td> <td>22.50</td> <td>20.55</td> </tr> <tr> <td>1.95</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Bob Baker	1.00	22.50	22.50	0.00	22.50	20.55	1.95							
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System Test Plan - Paycheck

Test ID	Description	Expected Results							Actual Results
Mid-range regular hours, Two insurances, Level 2	Preconditions: Paycheck program started Employee Name: Carol Cole Employee Level: 2 Hours Worked: 10 Medical Insurance (Y/N): Y Dental Insurance (Y/N): N Vision Insurance (Y/N): Y	Name Net Carol Cole 195.25	Hours 10.00	PayRate 22.50	Regular 225.00	OT 0.00	Gross 225.00	Deduc. 29.75	
Mid-range regular hours, Two insurances, Level 2	Preconditions: Paycheck program started Employee Name: Danny D David Employee Level: 2 Hours Worked: 20 Medical Insurance (Y/N): Y Dental Insurance (Y/N): Y Vision Insurance (Y/N): N	Name Net Danny D David 410.20	Hours 20.00	PayRate 22.50	Regular 450.00	OT 0.00	Gross 450.00	Deduc. 39.80	
Boundary regular hours, One insurance, Level 2	Preconditions: Paycheck program started Employee Name: Ellen Edwards Employee Level: 2 Hours Worked: 39 Medical Insurance (Y/N): N Dental Insurance (Y/N): N Vision Insurance (Y/N): Y	Name Net Ellen Edwards 872.25	Hours 39.00	PayRate 22.50	Regular 877.50	OT 0.00	Gross 877.50	Deduc. 5.25	
Boundary regular hours, One insurance, Level 2	Preconditions: Paycheck program started Employee Name: Frank Frankenstein Employee Level: 2 Hours Worked: 40 Medical Insurance (Y/N): Y Dental Insurance (Y/N): N Vision Insurance (Y/N): N	Name Net Frank Frankenstein 875.50	Hours 40.00	PayRate 22.50	Regular 900.00	OT 0.00	Gross 900.00	Deduc. 24.50	
Boundary overtime hours, One insurance, Level 2	Preconditions: Paycheck program started Employee Name: George George Employee Level: 2 Hours Worked: 41 Medical Insurance (Y/N): N Dental Insurance (Y/N): Y Vision Insurance (Y/N): N	Name Net George George 918.45	Hours 41.00	PayRate 22.50	Regular 900.00	OT 33.75	Gross 933.75	Deduc. 15.30	

System Test Plan - Paycheck

Test ID	Description	Expected Results	Actual Results																												
Mid-range overtime hours, No insurance, Level 2	Preconditions: Paycheck program started Employee Name: Hilda Henderson Employee Level: 2 Hours Worked: 50 Medical Insurance (Y/N): N Dental Insurance (Y/N): N Vision Insurance (Y/N): N	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Hilda Henderson</td> <td>50.00</td> <td>22.50</td> <td>900.00</td> <td>337.50</td> <td>1237.50</td> <td>0.00</td> </tr> <tr> <td>1237.50</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Hilda Henderson	50.00	22.50	900.00	337.50	1237.50	0.00	1237.50							
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Hilda Henderson	50.00	22.50	900.00	337.50	1237.50	0.00																									
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Boundary regular hours, All insurances, Level 3, Boundary retirement	Preconditions: Paycheck program started Employee Name: Alice Anderson Employee Level: 3 Hours Worked: 0 Medical Insurance (Y/N): Y Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y Retirement Percentage (0-6): 0	<Error Message>																													
Boundary regular hours, Two insurances, Level 3, Boundary retirement	Preconditions: Paycheck program started Employee Name: Bob Baker Employee Level: 3 Hours Worked: 1 Medical Insurance (Y/N): N Dental Insurance (Y/N): Y Vision Insurance (Y/N): Y Retirement Percentage (0-6): 1	<table border="1"> <thead> <tr> <th>Name</th> <th>Hours</th> <th>PayRate</th> <th>Regular</th> <th>OT</th> <th>Gross</th> <th>Deduc.</th> </tr> </thead> <tbody> <tr> <td>Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bob Baker</td> <td>1.00</td> <td>25.75</td> <td>25.75</td> <td>0.00</td> <td>25.75</td> <td>20.80</td> </tr> <tr> <td>4.95</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Bob Baker	1.00	25.75	25.75	0.00	25.75	20.80	4.95							
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Name	Hours	PayRate	Regular	OT	Gross	Deduc.																									
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Carol Cole	10.00	25.75	257.50	0.00	257.50	32.32																									
225.18																															

System Test Plan - Paycheck

Test ID	Description	Expected Results							Actual Results
Mid-range regular hours, Two insurances, Level 3, Mid-range retirement	Preconditions: Paycheck program started Employee Name: Danny D David Employee Level: 3 Hours Worked: 20 Medical Insurance (Y/N): Y Dental Insurance (Y/N): Y Vision Insurance (Y/N): N Retirement Percentage (0-6): 4	Name Net Danny D David 454.60	Hours 20.00	PayRate 25.75	Regular 515.00	OT 0.00	Gross 515.00	Deduc. 60.40	
Boundary regular hours, One insurance, Level 3, Boundary retirement	Preconditions: Paycheck program started Employee Name: Ellen Edwards Employee Level: 3 Hours Worked: 39 Medical Insurance (Y/N): N Dental Insurance (Y/N): N Vision Insurance (Y/N): Y Retirement Percentage (0-6): 5	Name Net Ellen Edwards 948.79	Hours 39.00	PayRate 25.75	Regular 1004.25	OT 0.00	Gross 1004.25	Deduc. 55.46	
Boundary regular hours, One insurance, Level 3, Boundary retirement	Preconditions: Paycheck program started Employee Name: Frank Frankenstein Employee Level: 3 Hours Worked: 40 Medical Insurance (Y/N): Y Dental Insurance (Y/N): N Vision Insurance (Y/N): N Retirement Percentage (0-6): 6	Name Net Frank Frankenstein 943.70	Hours 40.00	PayRate 25.75	Regular 1030.00	OT 0.00	Gross 1030.00	Deduc. 86.30	
Boundary overtime hours, One insurance, Level 3, Mid-range retirement	Preconditions: Paycheck program started Employee Name: George George Employee Level: 3 Hours Worked: 41 Medical Insurance (Y/N): N Dental Insurance (Y/N): Y Vision Insurance (Y/N): N Retirement Percentage (0-6): 2	Name Net George George 1031.95	Hours 41.00	PayRate 25.75	Regular 1030.00	OT 38.62	Gross 1068.62	Deduc. 36.67	

System Test Plan - Paycheck

Test ID	Description	Expected Results	Actual Results																												
Mid-range overtime hours, No insurance, Level 3, Mid-range retirement	Preconditions: Paycheck program started Employee Name: Hilda Henderson Employee Level: 3 Hours Worked: 50 Medical Insurance (Y/N): N Dental Insurance (Y/N): N Vision Insurance (Y/N): N Retirement Percentage (0-6): 3	<table border="1"> <thead> <tr> <th data-bbox="657 228 989 261">Name</th> <th data-bbox="989 228 1087 261">Hours</th> <th data-bbox="1087 228 1226 261">PayRate</th> <th data-bbox="1226 228 1365 261">Regular</th> <th data-bbox="1365 228 1503 261">OT</th> <th data-bbox="1503 228 1642 261">Gross</th> <th data-bbox="1642 228 1810 261">Deduc.</th> </tr> </thead> <tbody> <tr> <td data-bbox="657 261 989 293">Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td data-bbox="657 293 989 326">Hilda Henderson</td> <td data-bbox="989 293 1087 326">50.00</td> <td data-bbox="1087 293 1226 326">25.75</td> <td data-bbox="1226 293 1365 326">1030.00</td> <td data-bbox="1365 293 1503 326">386.20</td> <td data-bbox="1503 293 1642 326">1416.20</td> <td data-bbox="1642 293 1810 326">42.48</td> </tr> <tr> <td data-bbox="657 326 989 358">1373.72</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Hours	PayRate	Regular	OT	Gross	Deduc.	Net							Hilda Henderson	50.00	25.75	1030.00	386.20	1416.20	42.48	1373.72							
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