**Coding Exercise**

**Instructions:**

Please complete the exercise below using JAVA and send your solution in

GitHub (https://github.com/) or GitLab (<https://gitlab.com/>).

As part of this exercise, we would like to see your approach to design, implementation and unit tests covering off the principles of software development. You can include a readme file and/or any other documents that you normally would when completing a formal project.

You can demo your cloud knowledge by deploying the application as a microservice into AWS, GCP, AZURE or any cloud provider of your choice using GitHub or GitLab CI/CD to impress us. We are very keen to see you develop this as Spring web app micro service rest api, setup docker image to wrap the micro service, then deploy the app into AWS ECS.

**Exercise: Employee monthly pay slip**

When supplied with employee details: first name, last name, annual salary (positive integer) and super rate (0% - 50% inclusive), payment start date, the program should generate pay slip information which includes name, pay period, gross income, income tax, net income and super.

The calculation details will be the following:

* pay period = per calendar month • gross income = annual salary / 12 months
* income tax = based on the tax table provided below
* net income = gross income - income tax
* super = gross income x super rate

Notes: All calculation results should be rounded to the whole dollar. If >= 50 cents round up to the next dollar increment, otherwise round down.

The following rates to calculate income tax:

|  |  |
| --- | --- |
| **Taxable income** | **Tax on this income** |
| $0 - $18,200 | Nil Nil |
| $18,201 - $37,000 | 19c for each $1 over $18,200 |
| $37,001 - $87,000 | $3,572 plus 32.5c for each $1 over $37,000 |
| $87,001 - $180,000 | $19,822 plus 37c for each $1 over $87,000 |
| $180,001 and over | $54,232 plus 45c for each $1 over $180,000 |

For example, the payment in March for an employee with an annual salary of $60,050 and a super rate of 9% is:

* pay period = Month of March (01 March to 31 March)
* gross income = 60,050 / 12 = 5,004.16666667 (round down) = 5,004
* income tax = (3,572 + (60,050 - 37,000) x 0.325) / 12 = 921.9375 (round up) = 922
* net income = 5,004 - 922 = 4,082
* super = 5,004 x 9% = 450.36 (round down) = 450

Here is the csv input and output format we provide (but feel free to use any format you want):

**Input** (first name, last name, annual salary, super rate (%), payment start date):

page2image65072384page2image65072384

Monica,Tan,60050,9%,01 March – 31 March

Brend,Tulu,120000,10%,01 March – 31 March

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**Output** (name, pay period, gross income, income tax, net income, super):

Monica Tan,01 March – 31 March,5004,922,4082,450

Brend Tulu,01 March – 31 March,10000,2669,7331,1000

Request payload for rest endpoint

[

{

"firstName":"David",

"lastName":"Rudd",

"annualSalary":60050,

"paymentMonth":1,

"superRate":0.09

},

{

"firstName":"Ryan",

"lastName":"Chen",

"annualSalary":120000,

"paymentMonth":1,

"superRate":0.1

}

]

Response payload for rest endpoint

[

{

"employee":{

"firstName":"David",

"lastName":"Rudd",

"annualSalary":60050,

"paymentMonth":1,

"superRate":0.09

},

"fromDate":"01 February",

"toDate":"28 February",

"grossIncome":5004,

"incomeTax":922,

"superannuation":450,

"netIncome":4082

},

{

"employee":{

"firstName":"Ryan",

"lastName":"Chen",

"annualSalary":120000,

"paymentMonth":1,

"superRate":0.1

},

"fromDate":"01 February",

"toDate":"28 February",

"grossIncome":10000,

"incomeTax":2669,

"superannuation":1000,

"netIncome":7331

}

]

As part of your solution:

* List any assumptions that you made to solve this problem.
* Provide instructions on how to run the application.

Good luck! We look very forward to working with you.