**ASSIGNMENT REPORT FOR JAVA SE PROGRAMMING I**

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This project is called “Family.”

In **Package 1**, the parentClass is “**Parent**”. The following are the variables, methods and constructors in the parentClass.

**Variables:** (with one type of access modifiers each)

*public String eyeColour;*

*protected String phonePW;*

*int age;*

*private float salary;*

**Constructor:**

*public Parent(String eyeColour, String phonePW, int age, float salary) {*

*this.eyeColour = eyeColour;*

*this.phonePW = phonePW;*

*this.age = age;*

*this.salary = salary;*

*}*

**Methods:**

*public void annualsal(float salary){*

*float annualsal = this.salary \*12;*

*System.out.println("Annual salary:: " + annualsal);*

*}*

In the same package (Package 1), there is a childClass called “**Son**”. Son inherits all from parent, but has an additional variable “playGames”.

Son can access:

* eyeColour (as it is public)
* phonePW (as it is protected, thus accessible to child and same package)
* age (as it has no modifiers, and Son is in the same package as parent)

Son cannot access:

* salary (as it is private)

In Package 1, there is another class called “**Dog**”. This class is not a child of Parent.

Dog can access:

* eyeColour (as it is public)
* phonePW (as it is protected, thus accessible to same package, even though it is not a child)
* age (as it has no modifiers, and Dog is in the same package as parent)

Dog cannot access:

* salary (as it is private)

In a different package (Package 2), there is a childClass called “**Daughter**”. Daughter inherits all from parent, but has an additional variable “playGames”.

Daughter can access:

* eyeColour (as it is public)
* phonePW (as it is protected, thus accessible to child, even though it is in different package. However, must access through the creating of child objects, not parent object!!)

Daughter cannot access:

* age (as it has no modifiers, and Daughter is in a different package)
* salary (as it is private)

In Package 2, there is another class called “**Cat**”. This class is not a child of Parent.

Cat can access:

* eyeColour (as it is public)

Cat cannot access:

* phonePW (as it is protected, and Cat is not a child and is in different package)
* age (as it has no modifiers, and Cat is in a different package)
* salary (as it is private)

The table below summaries the results:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | default | private | protected | public |
| Same class | Yes | Yes | Yes | Yes |
| Same package,  childClass | Yes | No | Yes | Yes |
| Same package,  Non-childClass | Yes | No | Yes | Yes |
| Different package,  childClass | No | No | Yes | Yes |
| Different package,  Non-childClass | No | No | No | Yes |