**202211341 컴퓨터공학부 이윤희**

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| **Question1** |
| **Source code** |
| **// Employee.h**  #pragma once  #include <string>  #include <iostream>  using namespace std;  class Employee  {  protected:  string firstname;  char initial;  string lastname;  public:  virtual void print() = 0;  }; |
| **// SalaryEmployee.h**  #pragma once  #include "Employee.h"  class SalaryEmployee:public Employee  {  private:  string firstname;  char initial;  string lastname;  int salary;  public:  SalaryEmployee(string, char, string, int);  ~SalaryEmployee();  void print();  }; |
| **// SalaryEmployee.cpp**  #include "SalaryEmployee.h"  SalaryEmployee::SalaryEmployee(string fn, char i, string ln, int s)  :firstname(fn), initial(i), lastname(ln), salary(s) {  }  SalaryEmployee::~SalaryEmployee() {  }  void SalaryEmployee::print() {  cout << "Salary Employee:" << endl;  cout << firstname << " " << initial << ". " << lastname << endl;  cout << "Salary: " << salary << endl;  cout << "Payment: " << salary << endl;  } |
| **// HourlyEmployee.h**  #pragma once  #include "Employee.h"  class HourlyEmployee:public Employee  {  protected:  string firstname;  char initial;  string lastname;  int workedhour;  double rate;  public:  HourlyEmployee(string, char, string, int, doubles);  ~HourlyEmployee();  void print();  }; |
| **// HourlyEmployee.cpp**  #include "HourlyEmployee.h"  HourlyEmployee::HourlyEmployee(string fn, char i, string ln, int wh, double r)  :firstname(fn),initial(i),lastname(ln), workedhour(wh), rate(r) {  }  HourlyEmployee::~HourlyEmployee() {  }  void HourlyEmployee::print() {  cout << "Hourly Employee: " << endl;  cout << firstname << " " << initial << ". " << lastname << endl;  cout << "Hours worked: " << workedhour << endl;  cout << "Rate: " << rate << endl;  cout << "Payment: " << rate \* workedhour << endl;  } |
| **// main.cpp**  #include "SalaryEmployee.h"  #include "HourlyEmployee.h"    int main(void) {  SalaryEmployee employee1("John", 'A', "Pape", 2500);  employee1.print();  cout << endl;  HourlyEmployee employee2("Lucie", 'C', "Bush", 70, 20.0);  employee2.print();  cout << endl;  SalaryEmployee employee3("Jw", 'B', "Shin", 6000);  employee3.print();  cout << endl;  HourlyEmployee employee4("Hy", 'D', "Joe", 30, 80.0);  employee4.print();  cout << endl;  SalaryEmployee employee5("Yh", 'E', "Lee", 9000);  employee5.print();  cout << endl;  HourlyEmployee employee6("Nk", 'F', "Jeong", 52, 60.0);  employee6.print();  cout << endl;  return 0;  } |
| **Output** |
| **Question2** |
| **Source code** |
| **// Employee.h**  #pragma once  #include <string>  #include <iostream>  using namespace std;  class Employee  {  protected:  string firstname;  char initial;  string lastname;  public:  Employee(string, char, string);  void print();  }; |
| **// SalaryEmployee.h**  #pragma once  #include "Employee.h"  #include "SalaryType.h"  class SalaryEmployee:public Employee, public SalaryType  {  private:  double salary;  public:  SalaryEmployee(string, char, string, int);  ~SalaryEmployee();  void printSalary();  void print();  }; |
| **// SalaryType.h**  #pragma once  class SalaryType  {  public:  virtual void print() = 0;  virtual void printSalary() = 0;  }; |
| **// HourlyEmployee.h**  #pragma once  #include "Employee.h"  #include "HourlyType.h"  class HourlyEmployee:public Employee, public HourlyType  {  protected:  int workedhour;  double rate;  public:  HourlyEmployee(string, char, string, int, double);  ~HourlyEmployee();  void print();  void printPayment();  }; |
| **// HourlyType.h**  #pragma once  class HourlyType  {  public:  virtual void print() = 0;  virtual void printPayment() = 0;  }; |
| **// SalaryHourlyEmployee.h**  #pragma once  #include "Employee.h"  #include "SalaryType.h"  #include "HourlyType.h"  #include<string>  #include<iostream>  using namespace std;  class SalaryHourlyEmployee:public Employee, public SalaryType, public HourlyType{  private:  int workedhour;  double rate;  int salary;  public:  SalaryHourlyEmployee(string fn, char i, string ln, int s, int h, double r);  void print();  void printSalary();  void printPayment();  }; |
| **// Employee.cpp**  #include "Employee.h"  Employee::Employee(string fn, char i, string ln)  : firstname(fn), initial(i), lastname(ln){  }  void Employee::print() {  cout << firstname << " " << initial << ". " << lastname << endl;  } |
| **// SalaryEmployee.cpp**  #include "SalaryEmployee.h"  SalaryEmployee::SalaryEmployee(string fn, char i, string ln, int s)  :Employee(fn,i,ln), salary(s) {  }  SalaryEmployee::~SalaryEmployee() {  }  void SalaryEmployee::print() {  Employee::print();  cout << "Salary Employee" << endl;  printSalary();  }  void SalaryEmployee::printSalary() {  cout << "Salary: " << salary << endl;  cout << "Total Payment: " << salary << endl;  } |
| **// HourlyEmployee.cpp**  #include "HourlyEmployee.h"  HourlyEmployee::HourlyEmployee(string fn, char i, string ln, int wh, double r)  :Employee(fn,i,ln), workedhour(wh), rate(r) {  }  HourlyEmployee::~HourlyEmployee() {  }  void HourlyEmployee::print() {  Employee::print();  cout << "Hourly Employee" << endl;  printPayment();  }  void HourlyEmployee::printPayment() {  cout << "Hours worked: " << workedhour << endl;  cout << "Rate: " << rate << endl;  cout << "Total Payment: " << workedhour \* rate << endl;  } |
| **// SalaryHourlyEmployee.cpp**  #include "SalaryHourlyEmployee.h"  SalaryHourlyEmployee::SalaryHourlyEmployee  (string fn, char i, string ln, int s, int h, double r)  :Employee(fn, i, ln), salary(s), workedhour(h), rate(r) {  }  void SalaryHourlyEmployee::print() {  Employee::print();  cout << "Salary Hourly Employee" << endl;  printSalary();  printPayment();  if (workedhour > 180)  cout << "Total Payment: " << salary + (workedhour - 180) \* rate << endl;  else  cout << "Total Payment: " << salary << endl;  }  void SalaryHourlyEmployee::printSalary() {  cout << "Salary: " << salary << endl;  }  void SalaryHourlyEmployee::printPayment() {  cout << "Hours worked: " << workedhour << endl;  cout << "Rate: " << rate << endl;  } |
| **// Main.cpp**  #include "SalaryEmployee.h"  #include "HourlyEmployee.h"  #include "SalaryHourlyEmployee.h"  int main(void) {  SalaryEmployee john("John", 'A', "Pape", 2500);  john.print();  cout << endl;  HourlyEmployee lucie("Lucie", 'C', "Bush", 70, 20.0);  lucie.print();  cout << endl;  SalaryHourlyEmployee ann("Ann", 'A', "White", 3500, 230, 20.0);  ann.print();  cout << endl;  SalaryEmployee pink("Pink", 'P', "Light", 8000);  pink.print();  cout << endl;  HourlyEmployee red("Red", 'R', "Deep", 100, 30.0);  red.print();  cout << endl;  SalaryHourlyEmployee orange("Orange", 'O', "Fresh", 6000, 170, 20.0);  orange.print();  cout << endl;  SalaryEmployee yellow("Yellow", 'Y', "Lemon", 6500);  yellow.print();  cout << endl;  HourlyEmployee blue("Blue", 'B', "Sky", 85, 40.0);  blue.print();  cout << endl;  SalaryHourlyEmployee violet("Violet", 'V', "Purple", 5000, 300, 15.0);  violet.print();  cout << endl;  return 0;  } |
| **Output** |