OOP344 Test1v1 Answers

Section 1

**1)**

void Stack::push(Product\* product){

Node\* nNode = new Node;

nNode->data = product;

nNode->next = front;

front = nNode;

}

Product\* Stack::pop(){

if (!front) return nullptr;

Product\* prod = front->data;

Node\* toDelete = front;

front = front->next;

delete toDelete;

return prod;

}

**2)**

class Product {

static int idCounter;

int id;

char\* name;

public:

Product(const char\* inName = nullptr) : name(0), id(idCounter++) {

if (!inName) return;

name = new char[strlen(inName)];

strcpy(name, inName);

}

virtual ~Product() {

if (name) delete [] name;

}

const char\* getName() const { return name; }

virtual void setInfo(float, int a, b=0, c=0, d=0, e=0) = 0;

Product& operator\*(){

std::cout << name << “ with an ID of “ << id;

return \*this;

}

};

// In cpp:

int Product::idCounter = 0;

**3)**

int main(){

Stack stack;

char buf[256] = “”;

while (strcmp(buf, “Exit”)) {

std::cout << “What would you like to do? ”

<< “Exit, Deliver, Receive”

<< std::endl;

std::cin >> buf;

if (!strcmp(buf, “Deliver”)){

Product\* product = stack.pop();

\*\*product;

std::cout << “ is ready to be delivered” << std::endl;

delete product;

}

else if (!strcmp(buf, “Receive”)){

std::cout << “Please enter product type: “

<< “Furniture, Electronic, Grocery” << std::endl;

std::cin >> buf;

std::cout << “Please enter information:” << std::endl

<< “[product name] [float] [int] ”

<< “[optional int] [optional int] [optional int] “

<< “[optional int]” << std::endl;

char name[256];

std::cin >> name;

Product\* nProd;

if (!strcmp(buf, “Furniture”)) nProd = new Furniture(buf);

if (!strcmp(buf, “Electronic”)) nProd = new Electronic(buf);

if (!strcmp(buf, “Grocery”)) nProd = new Grocery(buf);

float f;

std::cin >> f;

int ints[5] = {0};

std::cin.getline(buf, 255);

for (int i = 0; \*buf && i < 5; ++i){

ints[i] = atoi(buf);

while(\*buf && \*buf != ‘ ‘) buf++;

}

nProd->setInfo(

f, ints[0], ints[1], ints[2], ints[3], ints[4]);

stack.push(nProd);

strcpy(buf, “”);

}

}

return 0;

}

Section 2

The output is: “5”

0.4

The output is: “2”

The output is: “a.out”