Tree Theo Rowlett -Contact leaf * root; Project 3 CS202-Winter '21 +Tree(); +Tree(const Tree & to_copy); +~Tree(); //Tree is a 2-3 tree sorted by comparing +void insert(const Contact & to_insert); + denotes public Contact objects +void remove_all() - denotes private +void remove_all(Contact *& curr); # denotes protected +Contact *& retrieve(string name); +Contact *& retrieve(string name, Contact * curr); "Has a" +void display_all(); relationship Leaf "Is a" relationship -Contact * leftkey; -Contact * rightkey; -Leaf * left; -Leaf * middle; -Leaf * right; +Leaf(); +Leaf(const Leaf & to_copy); +Leaf(const Contact & a_contact); +~Leaf(); +void insert(const Contact & to_insert); +Leaf *& go_right(); +Leaf *& go_middle(); +Leaf *& go_left(); Contact -string name; -Device * head; +Contact(); +Contact(const Contact & to copy) //Operator overloading is used in the +Contact(string a_name); Contact class to compare Contact's for +void display(); operations in inserting, removing, and +void remove_contact(); sorting the 2-3 tree. +,+=, and [] are +Contact& operator = (const Contact&); included as program requirement. +bool operator == (const Contact&)const; +bool operator != (const Contact&)const; +bool operator > (const Contact&)const; +bool operator < (const Contact&)const; +Contact operator + (const Contact&) const; +Contact& operator += (const Contact&); +Contact& operator [] (const Contact&); Device #Device * next //Device is an abstract base class for the 3 different sub classes. The only info it +Device() contains is a pointer to the next Device. +Device(const Device & to_copy); +virtual ~Device(); +virtual void display() = 0; +virtual void change_device() = 0; +Device *& go_next(); Cell_Phone Discord Email -string provider -string username -string provider -bool nitro status -int phone num -string address -bool textable; -bool paid status; +Discord(); +Email(); +Discord(const Discord & to_copy); +Email(const Email & to_copy); +Cell Phone(); +Discord(string a_name, bool nitro); +Email(string a_address, string +Cell_Phone(const Cell_Phone & to_copy) +~Discord(); a_provider); +Cell_Phone(string a_provider, int a_num, +void display(); +~Email(); bool text): +void change_device(); +void display(); +~Cell_Phone(); -string change username(); +void change_device(); +void display(); -bool change_nitro(); -string change_provider(); +void change_device(); -string change_address(); -int change num(); -string change_provider(); -bool change_text(); -bool change_status();