University of Washington

Outreach Program

Name_____

1. Having identified the major requirements for the cell phone of the future, we are now ready for the next step in the development lifecycle. To that end, we will formalize our requirements into UML use cases then identify the major functions that will comprise those use cases. Based upon these functions, our next step will be to define and design the classes that provide the public interface to our phone and provide the behaviour that we have specified. To do this, we will begin by writing CRC cards; from these, we will write the classes.

   As a side note, at this stage in the development, observe that we are completely independent of any implementation language.

   a. From the list of features or requirements that you have proposed for your cell phone, develop a UML use case diagram. Be certain to include both the graphical and textual views for each use case.

   b. For each of your use cases, identify the top and secondary level functions that implement the use case. Be sure to identify the information that must flow between or amongst the functions.

   c. With the major functions identified, we are now ready for the first step in designing the classes that will implement the functional behaviour. Using CRC cards, identify the classes, and their associated responsibilities, that will implement the behaviours that you have specified.

      Further, identify the collaborators with whom each class must work to affect the flow of information between the functions that you identified earlier.

      Note that a piece of functionality may be implemented by more than one class. Put another way, more than one class will most likely be required to implement each piece of functionality.

      Note further that a class may comprise other classes through composition or reflect inherited capabilities through an inheritance relationship. Be sure to identify all such relationships.

   d. To conclude this portion of the design, write a class diagram for each class and the relationships that you have identified in step c.