List of Figures

Figure 1.1: Project schedule of PedigreePro ......................................................4

Figure 2.1: Common pedigree symbols, definitions and abbreviations (Bennett et al, 1995)..........................................................13

Figure 2.2: Pedigree symbols and abbreviations for pregnancies not carried to term (Bennett et al, 1995).................................................................14

Figure 2.3: Relationship line definitions (University of Alberta, 2006).............14

Figure 2.4: Pedigree line definitions (Bennett et al, 1995)...............................15

Figure 2.5: Pedigree chart for five generations of a family...............................16

Figure 2.6: A typical autosomal dominant pedigree.........................................19

Figure 2.7: A typical autosomal recessive pedigree........................................20

Figure 2.8: A typical X-linked pedigree ..........................................................22

Figure 2.9: Polygenic or multifactorial pattern of inheritance............................23

Figure 2.10: Standard Pedigree Tree in Family Tree Maker 2005......................24

Figure 2.11: Pedigree View in Family Tree Maker 2005...................................24

Figure 2.12: Pedigree chart drawing in Cyrillic 2.02........................................25

Figure 2.13: Pedigree chart in GenoPro version 1.91b.....................................26

Figure 2.14: Pedigree View in GenealogyJ........................................................27

Figure 2.15: Pedigree chart drawing using PED 5............................................29

Figure 2.16: Pedigree chart created using Pedigree Assistant..........................30

Figure 2.17: Pedigree chart created using Progeny..........................................31

Figure 4.1: Main Modules of PedigreePro........................................................43

Figure 4.2: Use case diagram of drawing of the family tree.............................47

Figure 4.3: Activity diagram of drawing of the family tree..............................48

Figure 4.4: Use case diagram of assigning genetic symbols.............................50

Figure 4.5: Activity diagram of assigning genetic symbols.............................51

Figure 4.6: Use case diagram of updating an individual’s medical history record...51
Figure 4.33: Main page of a PedigreePro ..................................................74
Figure 4.34: Screen design of the Child Information .................................75
Figure 4.35: Screen design to create a New Pedigree .................................75
Figure 4.36: Screen design of Print Preview.................................................76
Figure 4.37: Screen design of the Legend used ..............................................76
Figure 4.38: Screen design of an Individual’s medical history .......................77
Figure 4.39: Screen design of Annotation .....................................................77
Figure 4.40: Screen design of the Genetic Symbols .......................................78
Figure 4.41: Screen design of Properties Form .............................................79
Figure 4.42: Screen design of Add Child .......................................................80
Figure 4.43: Help file design of PedigreePro ...............................................81
Figure B.1: Pedigree line definitions ..........................................................108
Figure B.2: Generations in a Pedigree chart ...............................................111
Figure C.1: Autosomal Dominant Inheritance Case ....................................119
Figure C.2: Autosomal Recessive Inheritance Case ....................................120
Figure C.3: X-Linked Inheritance Case .......................................................120
Figure C.4: Polygenic Multifactorial Inheritance Case ................................121
Figure C.5: Consanguinity and ‘Join Family’ Case ......................................122
Figure C.6: Real Case Application Example ..............................................123