

University of Massachusetts Dartmouth
Department of Electrical and Computer Engineering

ECE 264

Team Project – Adventure Game

1. Introduction

In this project, you will implement a text-based adventure game. You will design classes to implement key features, including rooms, items, and characters. You will be required to implement some features, but have the freedom to add your own. You must clearly document all of your implementation details and testing methodology, as well as provide a user's manual and demonstrate the workings of your game.

2. Specifications

Your project should include the following traits of a typical adventure game:

- A set of rooms, each of which can contain multiple items and characters.
 - Each room should have at least one entrance, allowing you to enter and/or exit the room. It may simply be an opening, a "locked" door, a magic door, or a magic way to enter the room.
 - Each room and item will have a description that can be displayed.
 - The number of rooms and items should not be fixed or limited—your program should work with multiple input configurations (which must be read from a file).
- An “adventurer” who can:
 - Pick up and store items, then view them later.
 - Get rid of items in some manner. Just dropping an item in a room is a simple implementation, but you might allow something more interesting like selling the item to another character.
 - Use items where appropriate—for example,; a key could be used to open a door; a credit card could be used to buy a "tool" for some other purpose.
 - Interact with the environment in more specific ways than just displaying the room description (although you must include that functionality). You should be able to "look" at some objects and gain more information—such as reading signs—perhaps talk to other characters, and so on.
- Any type of fighting or killing monsters or other is not allowed UNLESS you have already demonstrated to me a game which meets all of the other criteria.

You must also design a way to configure the initial state of your game. It is required that you read in a file (or files) that provide(s) information about the initial configuration of your "adventure". You determine the format of your input file.

Your project will be judged on both functionality and creativity. You are encouraged to add “extra” details to your game that are not specified above.

3. Deliverables and grading

You should submit the following deliverables on the dates specified (by 23:59 unless otherwise specified):

- Preferred group – must receive email from one person in group listing group members. Groups should generally be three to four persons. If I have not received an email by Friday 3/31 at noon, you will be assigned a group in class. If you are not in class on Friday, you will be assigned a group.
- High-level design plan (**file: HighLevel.doc, in M: folder, Max 15 points, due 4/7**): The design should include, but is not limited to:
 - Requirements specification—i.e., what a user should be able to do while playing your game—which may include a use case diagram.
 - UML class diagrams for all classes you plan to use.
 - Program flow description—typed out or in flow chart form.
 - Note: Extra functionality should be proposed as part of your design.
 - Note: Final versions of your class diagrams and program flow should be incorporated into your technical report.
 - NOTE: THIS IS AN IMPORTANT STEP. IF YOU SIMPLY BEGIN TO CODE, YOU ARE ALMOST GUARANTEED TO HAVE PROBLEMS. TAKE THE TIME TO DESIGN, BEFORE YOU START TO WRITE CODE.
- User's guide (**file: UserGuide.doc in M: folder, Max 15 points; due 4/12**): A document describing game play and functionality—ideally, someone who is completely unfamiliar with the project should be able to read this document and learn how to play your game (this shouldn't contain hints or secrets of the game...learning those is part of playing the game).
- Demonstration (**Max 20 points; due 4/21 or 4/26 during class, picked at random**): Each student will give a 12-minute (more than 10 and less than 15) demonstration of their project to their classmates during the last full week of classes. Your project does not have to be 100% complete, but should be to a point where you can demonstrate most of your functionality.
- Technical report (**file: TechReport.doc in M: folder, Worth 25 points; due 5/1**): This report MUST BE written in the standard UMD technical report format used in ECE 260/263 and should include:
 - A description of how you met each of the project requirements.
 - A description of any additional functionality you added.
 - A description of each module in your program—all classes, functions, variables, etc.
 - A detailed description of your testing plan. How did you test each module? How did you determine how modules worked together? How did you test the integration of modules? How did you test the system as a whole? It is suggested, but not required, that you include a list of test cases and/or formal procedures used in testing, possibly as an appendix to the report.
- The M:\ECE-264\name folder must contain the final code (**required to get any credit for anything; folders locked on 5/1**)

- Extras/Artistic Creation (**Max 25+20 points based on submitted project**)
 - Implementing a basic take object, drop object, direction, earns you 25 points. Assuming you complete all of the other pieces, you get a score of 80 for the project. To get a higher score, you must implement some puzzles, or creatures which can be interacted with (talked to, NOT killed, manipulated) or objects which need other objects to fully exploit (a key needed to open a door, or a pillow which needs to be set down in a room before a valuable vase is put down [vase breaks otherwise] or a password get into the engineering room of the Enterprise to name a few examples).

4. Example Code

- M:\ECE-264\public\adventure contains a ported C# implementation of the original DECSys-20 Adventure game by Don Woods and Will Crowther. The data file is identical to the original game. Although this is written in C#, it is not written object based. Much of the spaghetti code of the original game is left intact, although some is cleaned up. In general, it is a poor example of 21st century programming. The purpose of this code (which I wrote) was to understand the nuances of the original game, for an eventual full port using objects where appropriate.
- In class, we will also look at some classes which might be appropriate

5. **Maps, room descriptions, etc**

Adapted from Woods/Crowther adventure game

Descriptions from source code. Maps from <http://rickadams.org/adventure/>

Short descriptions

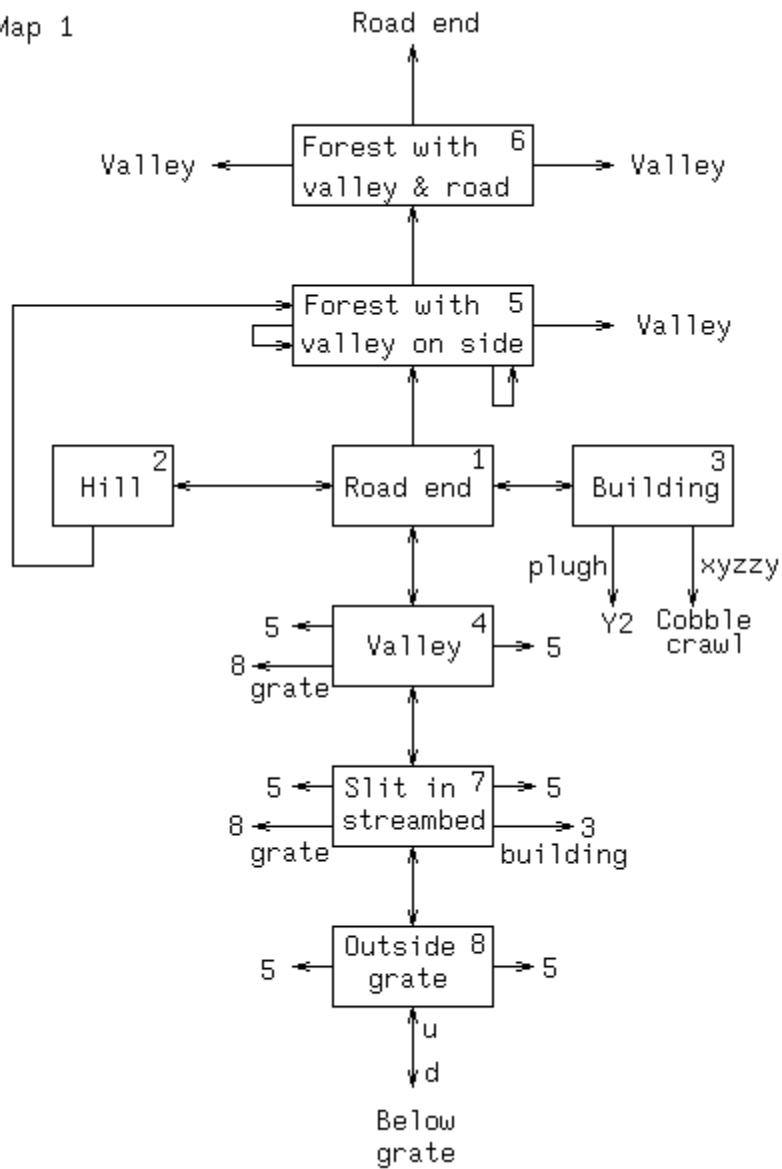
Room#	Description	Objects
1:	Road end	
2:	Hill	
3:	Building	Keys Lamp Bottle Food
4:	Valley	
5:	Forest with valley on side	
6:	Forest with valley & road	
7:	Slit in streambed	
8:	Outside grate	
9:	Below grate	
10:	Cobble crawl	Cage
11:	Debris room	Rod
12:	Sloping E/W canyon	
13:	Bird chamber	Bird
14:	Top of small pit	
15:	Hall of mists	
17:	Eastbank fissure	
18:	Gold room	Gold nugget
19:	Hall of Mt. King	
23:	West 2pit room	
24:	East pit	
25:	West pit	
27:	Westside fissure	Diamonds
28:	Low N/S passage	Silver bars
29:	Southside chamber	Jewelry
30:	Westside chamber	Coins
33:	Y2	
34:	Rock jumble	
35:	Window on pit	
36:	Dirty broken passage	
37:	Brink of clean pit	
38:	Pit with stream	

Long descriptions

1 YOU ARE STANDING AT THE END OF A ROAD BEFORE A SMALL BRICK BUILDING.
1 AROUND YOU IS A FOREST. A SMALL STREAM FLOWS OUT OF THE BUILDING AND
1 DOWN A GULLY.
2 YOU HAVE WALKED UP A HILL, STILL IN THE FOREST. THE ROAD SLOPES BACK
2 DOWN THE OTHER SIDE OF THE HILL. THERE IS A BUILDING IN THE DISTANCE.
3 YOU ARE INSIDE A BUILDING, A WELL HOUSE FOR A LARGE SPRING.
4 YOU ARE IN A VALLEY IN THE FOREST BESIDE A STREAM TUMBLING ALONG A
4 ROCKY BED.
5 YOU ARE IN OPEN FOREST, WITH A DEEP VALLEY TO ONE SIDE.
6 YOU ARE IN OPEN FOREST NEAR BOTH A VALLEY AND A ROAD.
7 AT YOUR FEET ALL THE WATER OF THE STREAM SPLASHES INTO A 2-INCH SLIT
7 IN THE ROCK. DOWNSTREAM THE STREAMBED IS BARE ROCK.
8 YOU ARE IN A 20-FOOT DEPRESSION FLOORED WITH BARE DIRT. SET INTO THE
8 DIRT IS A STRONG STEEL GRATE MOUNTED IN CONCRETE. A DRY STREAMBED
8 LEADS INTO THE DEPRESSION.
9 YOU ARE IN A SMALL CHAMBER BENEATH A 3X3 STEEL GRATE TO THE SURFACE.
9 A LOW CRAWL OVER COBBLES LEADS INWARD TO THE WEST.
10 YOU ARE CRAWLING OVER COBBLES IN A LOW PASSAGE. THERE IS A DIM LIGHT
10 AT THE EAST END OF THE PASSAGE.
11 YOU ARE IN A DEBRIS ROOM FILLED WITH STUFF WASHED IN FROM THE SURFACE.
11 A LOW WIDE PASSAGE WITH COBBLES BECOMES PLUGGED WITH MUD AND DEBRIS
11 HERE, BUT AN AWKWARD CANYON LEADS UPWARD AND WEST. A NOTE ON THE WALL
11 SAYS "MAGIC WORD XYZZY".
12 YOU ARE IN AN AWKWARD SLOPING EAST/WEST CANYON.
13 YOU ARE IN A SPLENDID CHAMBER THIRTY FEET HIGH. THE WALLS ARE FROZEN
13 RIVERS OF ORANGE STONE. AN AWKWARD CANYON AND A GOOD PASSAGE EXIT
13 FROM EAST AND WEST SIDES OF THE CHAMBER.
14 AT YOUR FEET IS A SMALL PIT BREATHING TRACES OF WHITE MIST. AN EAST
14 PASSAGE ENDS HERE EXCEPT FOR A SMALL CRACK LEADING ON.
15 YOU ARE AT ONE END OF A VAST HALL STRETCHING FORWARD OUT OF SIGHT TO
15 THE WEST. THERE ARE OPENINGS TO EITHER SIDE. NEARBY, A WIDE STONE
15 STAIRCASE LEADS DOWNWARD. THE HALL IS FILLED WITH WISPS OF WHITE MIST
15 SWAYING TO AND FRO ALMOST AS IF ALIVE. A COLD WIND BLOWS UP THE
15 STAIRCASE. THERE IS A PASSAGE AT THE TOP OF A DOME BEHIND YOU.
16 THE CRACK IS FAR TOO SMALL FOR YOU TO FOLLOW.
17 YOU ARE ON THE EAST BANK OF A FISSURE SLICING CLEAR ACROSS THE HALL.
17 THE MIST IS QUITE THICK HERE, AND THE FISSURE IS TOO WIDE TO JUMP.
18 THIS IS A LOW ROOM WITH A CRUDE NOTE ON THE WALL. THE NOTE SAYS,
18 "YOU WON'T GET IT UP THE STEPS".
19 YOU ARE IN THE HALL OF THE MOUNTAIN KING, WITH PASSAGES OFF IN ALL
19 DIRECTIONS.
20 YOU ARE AT THE BOTTOM OF THE PIT WITH A BROKEN NECK.
21 YOU DIDN'T MAKE IT.
22 THE DOME IS UNCLIMBABLE.
23 YOU ARE AT THE WEST END OF THE TWOPIT ROOM. THERE IS A LARGE HOLE IN
23 THE WALL ABOVE THE PIT AT THIS END OF THE ROOM.
24 YOU ARE AT THE BOTTOM OF THE EASTERN PIT IN THE TWOPIT ROOM. THERE IS
24 A SMALL POOL OF OIL IN ONE CORNER OF THE PIT.
25 YOU ARE AT THE BOTTOM OF THE WESTERN PIT IN THE TWOPIT ROOM. THERE IS
25 A LARGE HOLE IN THE WALL ABOUT 25 FEET ABOVE YOU.
26 YOU CLAMBER UP THE PLANT AND SCURRY THROUGH THE HOLE AT THE TOP.
27 YOU ARE ON THE WEST SIDE OF THE FISSURE IN THE HALL OF MISTS.

28 YOU ARE IN A LOW N/S PASSAGE AT A HOLE IN THE FLOOR. THE HOLE GOES
28 DOWN TO AN E/W PASSAGE.
29 YOU ARE IN THE SOUTH SIDE CHAMBER.
30 YOU ARE IN THE WEST SIDE CHAMBER OF THE HALL OF THE MOUNTAIN KING.
30 A PASSAGE CONTINUES WEST AND UP HERE.
31 >\$<
32 YOU CAN'T GET BY THE SNAKE.
33 YOU ARE IN A LARGE ROOM, WITH A PASSAGE TO THE SOUTH, A PASSAGE TO THE
33 WEST, AND A WALL OF BROKEN ROCK TO THE EAST. THERE IS A LARGE "Y2" ON
33 A ROCK IN THE ROOM'S CENTER.
34 YOU ARE IN A JUMBLE OF ROCK, WITH CRACKS EVERYWHERE.
35 YOU'RE AT A LOW WINDOW OVERLOOKING A HUGE PIT, WHICH EXTENDS UP OUT OF
35 SIGHT. A FLOOR IS INDISTINCTLY VISIBLE OVER 50 FEET BELOW. TRACES OF
35 WHITE MIST COVER THE FLOOR OF THE PIT, BECOMING THICKER TO THE RIGHT.
35 MARKS IN THE DUST AROUND THE WINDOW WOULD SEEM TO INDICATE THAT
35 SOMEONE HAS BEEN HERE RECENTLY. DIRECTLY ACROSS THE PIT FROM YOU AND
35 25 FEET AWAY THERE IS A SIMILAR WINDOW LOOKING INTO A LIGHTED ROOM. A
35 SHADOWY FIGURE CAN BE SEEN THERE PEERING BACK AT YOU.
36 YOU ARE IN A DIRTY BROKEN PASSAGE. TO THE EAST IS A CRAWL. TO THE
36 WEST IS A LARGE PASSAGE. ABOVE YOU IS A HOLE TO ANOTHER PASSAGE.
37 YOU ARE ON THE BRINK OF A SMALL CLEAN CLIMBABLE PIT. A CRAWL LEADS
37 WEST.
38 YOU ARE IN THE BOTTOM OF A SMALL PIT WITH A LITTLE STREAM, WHICH
38 ENTERS AND EXITS THROUGH TINY SLITS.

Map 1



Map 2

