

## Robot Doctor Game Proposal

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CS 591: Game Development

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### Introduction

This document proposes an adventure game called “Robot Doctor.” In Robot Doctor, you direct Charlie, a young robot doctor as he travels his homeland learning his craft, challenging the evil Dr. Twig, and eventually becoming the world’s greatest robot doctor.

Robot doctor will be a single player PC game reminiscent of the old 80’s Sierra adventure games in which the user directed the protagonist by typing English commands. The player guides Charlie through the world, helping him overcome obstacles, collect items and perform surgery.

The game employs a 3<sup>rd</sup> person view of Charlie while he explores his world. The camera remains in the same location for each scene. As Charlie moves between scenes by reaching the edge of the screen or entering a door, the new scene is displayed.



Figure 1: Charlie cannot cross the bridge due to an oil spill.

## Game Play

The majority of the game is spent guiding Charlie through his world, instructing him to overcome obstacles.

Example Obstacle: The user would like to navigate Charlie across a bridge. Every time the user directs Charlie to walk across the bridge (via mouse/keyboard arrows), Charlie slips and falls. Upon examination, the bridge is covered in oil. The oil is leaking from an unplugged oil pan in an old broken down car next to the bridge. The user must locate a replacement bolt and install it before he can proceed. The only other car on the island is owned by one of Charlie's neighbors. The user would walk Charlie (via mouse/keyboard arrows) to his neighbor's house. By watching the neighbor, the user would surmise a pattern to the neighbor's obsessive gardening practices and determine when to walk over to the car, and type some close variant of "steal bolt". With the bolt now in Charlie's inventory, the user would walk Charlie back to the bridge, install the new bolt via a *Surgery Scene*, and then proceed across the bridge.

The view is changed to 1<sup>st</sup> person when he performs surgery. The surgery scenes challenge the user's spatial reasoning and engineering skills. It is fun to complete surgery scenes in the same way building IKEA furniture is fun.

Example Surgery Scene: The user selects objects and manipulates them (clockwise rotation, counter-clockwise rotation, pry off, etc). These challenges begin very simply to introduce the control scheme but become more complicated as the game progresses. In the shown example, the user has selected the nut from his available part list, and has moved it via the mouse to be close to the bolt. The bolt is illuminated red to indicate that the pressing C (from the available actions list on the left) would attempt to thread the nut onto the bolt.

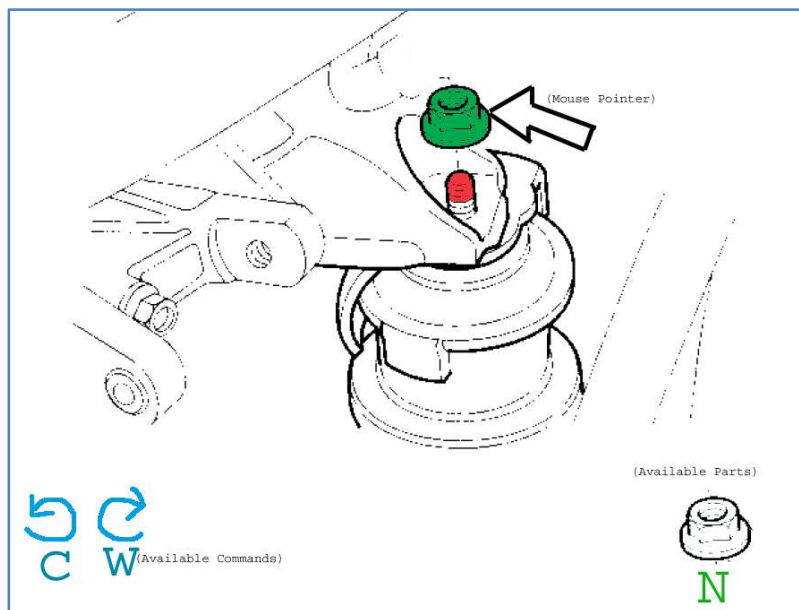
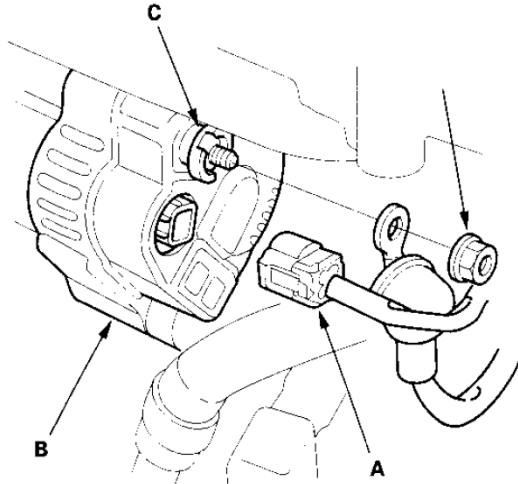


Figure 2: The user installs a nut in a *surgery scene*.

The goal and intended path of the surgery scenes are often outlined in instructions Charlie finds throughout his adventures. Early in the game the instructions are very good, although later Charlie may find some instructions harder to follow.

Will be removing the electrically operated part later A, from component B which will cause, the pine opens D. This will permit the lead wire the removal.



(image source: Honda S2000 repair manual)

Figure 3: Charlie bought some unfortunately bad instructions in a back alley.

## The Story

### Characters

Charlie is the only main character. He is a young, bright, hopeful robot.

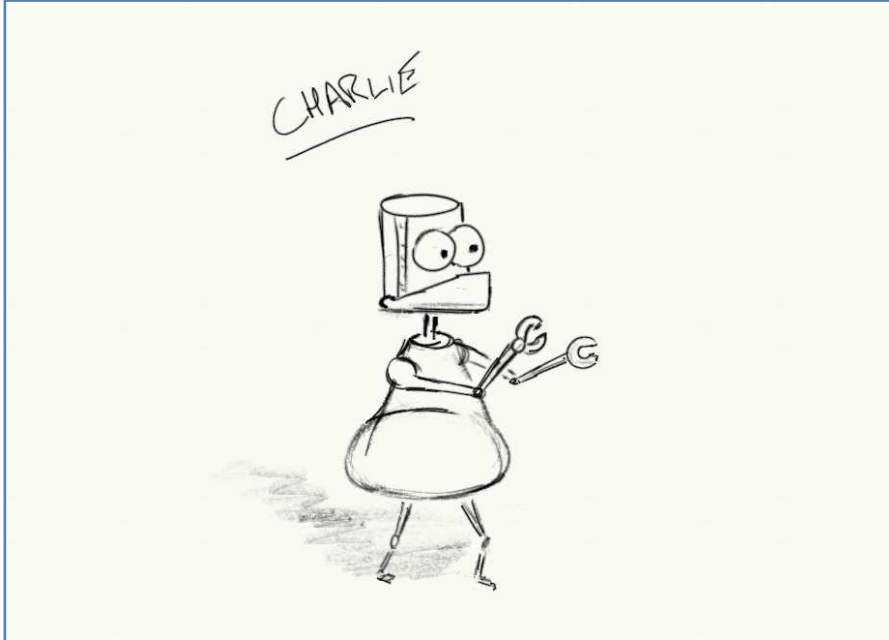


Figure 4: Charlie, the robot doctor.

There are many minor characters in Robot Doctor. These minor characters fill out the world and provide opportunities for obstacles and story. Some of the more notable characters necessary to the plot are:

- Becky: His childhood friend and love interest.



Figure 5: Becky, Charlie's love interest.

\*Note: I have a creeping suspicion I've copied the layout of Becky's head from *Futurama*. I haven't been able to find where in *Futurama* that head exists, but it looks very much like a character that would be in *Futurama*. Obviously if the drawing is derivative, the design of Becky would change.

- Dr. Twig: The evil, corner-cutting doctor. He is the main antagonist.

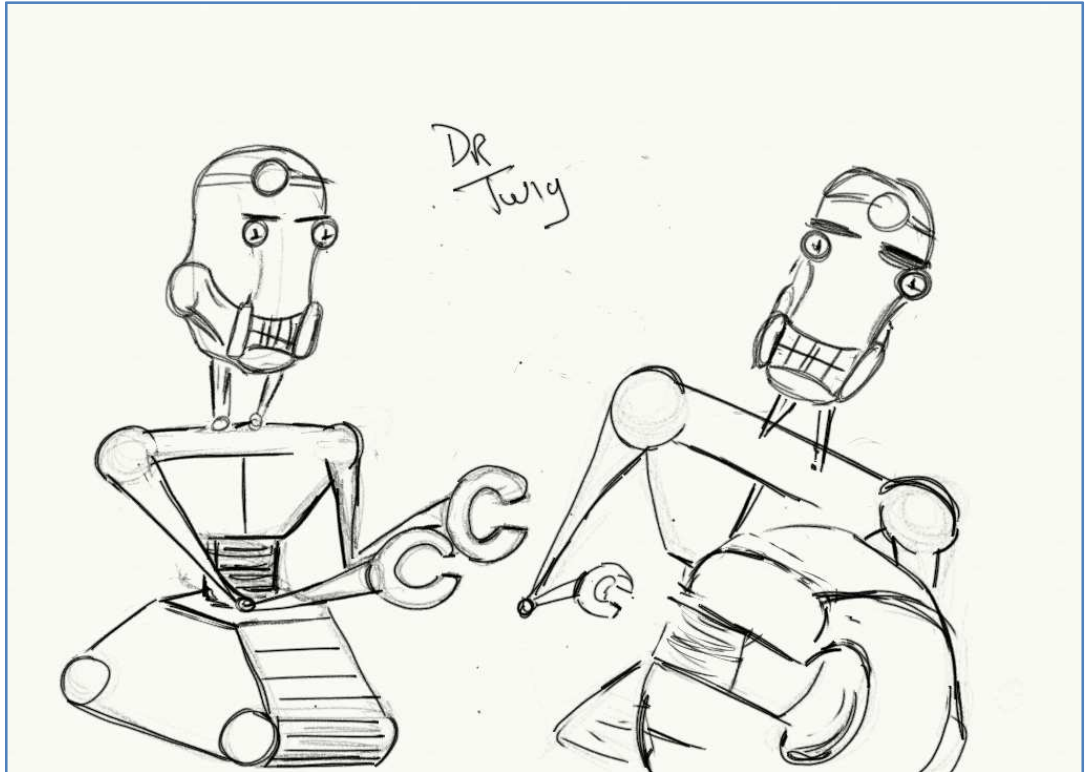


Figure 6: The evil Dr. Twig

- Nate Bullet: Becky's father, and also Otam's biggest hero.
- Charlie's Father: Encourages him to make something of himself
- Chubb: Parts dealer who teams up with Charlie to build clinic on the mainland.

## The Plot

The story is told largely interactively, since it's an adventure game. Actions may result in a text overlay, or small non-interactive segment.

## The Beginning

The game opens on the small island, Bonnet Island, upon which Charlie's family lives. Bonnet Island is one of many islands making up the nation of Otam.

We join Charlie helping cast and take up the fishing nets on the beach with his father. His father is lecturing him about how he can't just stroll through life; he must find direction, etc. His father slips when he accidentally steps on a bucket of fish and breaks his knee.

His father asks Charlie to run and get the first aid kit from their house. Charlie wants to go get a doctor but his father says "We have no money for a doctor."

So Charlie goes home, gets the medical kit and fixes his father, showing proficiency for fixing robots. His father is impressed and excited. He gives him the family 'fix yourself' guide, 200 bucks, and tells him to go to the neighboring island, Boar Island, (which is quite a bit larger), and attend medical school with the 200 dollars his father gave him.

So Charlie gathers his stuff, says goodbye to his friend next door, Becky. He tells her he'll come back for her once he's a well respected doctor.

Upon arriving on Boars Island, he seeks out the best medical school, only to find that medical school costs on the order of \$200,000. Upset, he goes to a hamburger joint to eat away his sorrows. While eating, he chokes on his own burger, but knows how to give himself the Heimlich maneuver. An impressed patron asks if he's a medical student. Charlie explains his predicament and the patron tells Charlie that his cousin went to "Bargain Medical University".

Charlie seeks out Bargain Medial University to find out it's a really just a dimly lit shack. But the sole instructor convinces him it is money well spent, and Charlie begins his formal medical training.

## The Middle

Charlie learns soon that the instructor is actually quite talented, and has good reasons for not taking part in the establishment's medical system. Charlie learns all he can from Bargain Medical University and sets out on his own.

As he travels Boar's island, he helps a number of people, and begins to establish himself.

He begins to see a lot of parts stamped "TE" that have failed. Upon doing some research he learns that they are being produced by Twig Enterprises on the mainland. He decides to track down the source of all this faulty equipment.

He arrives on the mainland, and finds out most robots are in a bad state, with their parts failing regularly, they spend a lot of their time hobbling around scraping together enough money to get new parts. Charlie tracks down a parts dealer, named Chubb, selling the "TE" parts. Charlie starts the interrogation angrily but quickly learns the parts dealer isn't happy about the state of things either, together they agree to open a clinic, and help the people, by installing things for free/cheap, and perhaps even start building superior parts themselves.

As their clinic gains momentum, Charlie gets a visit from Dr. Twig, the lead physician and primary stakeholder in Twig Enterprises. Twig promises to make Charlie rich, if he Joins Twig enterprises and

abandons his philanthropic efforts. Twig explains how they used to make robots that would require almost no maintenance, but that proved unprofitable. The more profitable thing is to sell robots disposable, unreliable parts for slightly cheaper. Charlie turns down Dr. Twig, angering him.

So Charlie begins preaching against Twig Enterprises and becomes somewhat of an underground hero.

Twig Enterprises spends its efforts to confuse the issues, discredit Charlie, and maintain their profitable status quo. One of their ad campaigns centers around "Put Otam on the Map! Put Otam on the mountain!" The company has become the official sponsor of Nate Bullet's (Becky's Dad's) attempt to summit Mt. Kilroy. He would be the first robot to achieve it. The company would show the reliability of their product by testing it in the harshest imaginable environment and it would bring great honor to the nation of Otam.

But something goes wrong:

## The End

Charlie is relaxing in a local burger joint, watching live coverage of the ascent. It's near white out conditions as Nate works his way up the mountain, when Nate collapses. The TV sells it as impossible to mount a rescue attempt, and begins the "national fallen hero" routine. Charlie's mind snaps to the way Nate's collapse looked exactly like his father's knee injury involving the fish bucket. Charlie is convinced Nate's collapse was due to TE part failure. This would be the perfect way to expose the true nature of Twig Enterprises, save Nate, and win Becky's heart forever.

So Charlie mounts his own rescue attempt on Mt. Kilroy, along with help from Chubb. As they progress Dr. Twig attempts to foil their rescue attempts (because it would expose his company as a fraud.)

In the end, Charlie reaches Nate on Mt. Kilroy, fixes him, exposes the true nature of Twig Enterprises, gets appointed Chief of Medicine of Otam, marries Becky, and builds a humble house next to his father's house on that little island where it all started.

## Game Appearance:

### Overall Feel

The game is intended to be very family friendly, with an expected rating of E. Clean humor will be used throughout, but cheap *robot puns* will be intentionally avoided. The entire nature of robots will not be discussed. There are no humans, only robots. It is intentionally not explored WHY or HOW robots exist.

### Video

General look of the game: The over-all aesthetic of the game is intended to be reminiscent of the 80's era adventure games, such as *Monkey Island*. The design will take many cues from cartoons. The engine will be 3D, and utilize billboardage heavily to present the environment. Cell shading will be used throughout. Characters will be modeled in 3D, but the use of aggressive cell shading should serve to flatten them somewhat. The art style will be low detail, high color, with thick black edges. The camera

will stay centered on the part of the world Charlie is currently exploring. The entire scene will be updated when Charlie reaches the edge of the screen, or enters a door.

Lighting Considerations: Since the camera doesn't move, lighting calculations are very simple. The engine will then do specular and diffuse shading. Shadows will be created using a mixture of pre-computation and shadow maps.

Special Effects: Some scenes/worlds may employ dramatic lighting to emphasize the content of the scene, but the over-all design style is simple, so overly detailed effects will be avoided.

## Audio

Audio Cues: Valid operations will be met with a ding and possibly some text indicating the result of the action. Invalid operations will be met with a donk sound and some text indicating the action was not valid.

Sound Effects: Ambient noise will be specified by individual scenes to emphasize the scene's content.

Voice Over/Dialog: The voice-over and inter-player dialog will be done textually.

Music: The music will be relaxing electronica which takes it's cues from the over-all world Charlie is currently in. For instance, the first world is a beach-townish island, thus the music would have a Calypso or Reggae style.

## Game World

There are fundamentally four islands which Charlie progresses through. Charlie is free to move throughout each island (provided there are obstacles currently stopping him), but to limit the solution space, he does not need to return to previous islands to solve current problems.

- Bonnet Island: A very small fishing village island with 5 families on it (including Charlie and his Father).
- Boar Island : larger island, has "Bargain Medical School."
- Mainland: location of Twig Enterprises, Charlie sets up his clinic here.
- Mt. Kilroy: The dangerous mountain where he rescues Becky's father.

Each island divided into a number of scenes. A scene is one screen. Charlie moves between scenes by walking to the edge of the current scene, or walking through a door. The islands are separated by water. Charlie does not move freely between islands, instead he progresses to the next island after overcoming some obstacle. He cannot go back to previous islands.



## Game Mechanics

**Scoring:** A numerical score reflects the over-all number of tasks solved. Some tasks are mandatory. As Charlie completes mandatory tasks, new sections of the world are made available to him.

**Player Verb Set:** The set is quite rich since the user can type commands. For instance a user may type “Throw rock at the monkey.” The game hints at possible actions in a given situation. Nonsensical commands are greeted with playful ridicule.

**Inventory:** Charlie collects items throughout the world. These items are used, and consumed to overcome obstacles. A hotkey brings up the inventory to remind the user what items Charlie possesses.

**Time:** In general, there is no measure of time in the game. Some tasks involve timing one’s activity to coincide with the activities of NPC’s. Some puzzles may have a time limit before they reset.

**Lives and Powers:** Robots can die, but Charlie, in this game, never does. He miraculously survives bad decisions, so that he may figure out correct ways to solve the obstacle, and thus progress forward.

## Interfaces

### Input

When in third person view, the user moves Charlie by using the keyboard arrow keys, or by clicking the intended location with the mouse. The user commands Charlie to perform actions by typing commands in English and then pressing return on the keyboard. When in 1<sup>st</sup> person, the user moves Charlie’s hands primarily with the mouse, and performs actions via a number of key presses.

### HUD

When in third person, a prompt exists at the bottom of the screen to indicate what the user is typing. Pressing escape brings up a ‘statistics/inventory’ screen. Many actions cause text to be overlaid on the screen, to convey information, give hints, and move the story along. When in 1<sup>st</sup> person *surgery* scenes, the available actions and items (and their corresponding keys) are indicated via a number of icons on the bottom of the screen.

### Wrap Up

Intelligent adventure games have been neglected since typing commands fell out of style. Most modern adventure games can be solved by clicking random objects in a near brute force approach. The use of the keyboard forces the user to specify the action, not just the object. This game may prove quite successful with the nostalgic 30-somethings that cut their teeth on *Space Quest* as a youngster.