



POKEMON FISHING

GAME DESCRIPTION

Have you ever wanted to experience the minutiae of fishing? The feel of the fishing rod in your hands, the exhilaration of casting your line into the unknown (or Unown), and the anticipation of reeling in the fish of a lifetime? To experience the epic battle between man and fish as you try to reel in that fighter, playing mind games by letting it think it's getting away, only to pull the line back at the last minute before it actually lets go? What if I told you that you can do that, but instead of catching regular old fish, you are catching Pokémon fish! And not only that, you can catch them in such iconic locations as Hoenn's Route 119 where the infamous Feebas lives, or Johto's Lake of Rage, where the majestic Red Gyarados sleeps!

Welcome to the world of Pokémon Fishing!

In this world, you play the role of a Fisherman, but not just any Fisherman content with just reeling in the pathetic Magikarps and Tentacools, no, you are after the Big Ones, the Catch of a Lifetime. Equipped with only your Rod (and a couple of other things), a small boat, Courage and a Pure Heart that beats only for Fishing, your goal is to capture the rarest fish, wherever region they may be, and be the Ultimate Pokémon Fishing Champion. As the saying goes, you only go by one motto, and one motto alone...

Gotta catch 'em all!

LOCALES

You (the player) has five locales you can visit in your quest to capture the rarest of the rare Water Pokémon's. Only the two locales, however, are available for you to explore at the start of the game: Lake of Rage and Union Cave. Capturing Lapras allows you to access Fiore's Sea and capturing Red Gyarados allows you to access Route 119 and Marine Cave. Each Locale has a rare Water Pokémon for you to capture; only one of these rare Water Pokémons exists in the world and can only be caught once. Capturing the rare Pokémon for each locale rewards you with a fishing badge; you can only capture Kyogre if you have four badges.

Each Locale also has its own fauna for you to capture, and treasures for you to hook. Treasures can be sold so you can buy better fishing gear, while capturing Pokémon allows you to increase your fame for each Locale. Reach 100% fame and you get a chance to fish for the rare Pokémon of the Locale, and thus get you further on your quest to becoming the Ultimate Pokémon Fishing Champion!

Below is a list of all the Locales and their corresponding Badge, Rare Pokémon, Regular Pokémon and Treasures.

LOCALE	BADGE	RARE POKEMON	REGULAR POKEMON	TREASURES
Lake of Rage (Johto)	Scale Badge	Red Gyarados	Magikarp, Staryu, Tentacool	Pearl
Union Cave (Johto)	Shell Badge	Lapras	Goldeen, Shellder, Horsea	Stardust
Route 119 (Hoenn)	Coral Badge	Feebas	Quilfish, Remoraid, Carvanha	Big Pearl
Fiore's Sea (Fiore)	Droplet Badge	Manaphy	Finneon, Frillish, Alomomola	Nugget
Marine Cave (Hoenn)	Legend Badge	Kyogre	Relicanth, Chinchou, Wailmer	Big Nugget

The maps of each Locale are laid out in a grid based system (see the APPENDIX section for these maps). Every time you visit a Locale, you start at the Port of that Locale. You can then explore the Locale using your boat; the kind of boat you use will determine how much you can explore the locale you are in (measured in the number of grid squares you can travel to). The farther you from the Port, the deeper the water becomes, and the better chances you have for capturing the endemic fauna of that Locale. Lapras can also be used as a boat once you capture it. Once you're out of moves, you are automatically sent back to the Port. Whenever you go back to the Port, whether by choice or by exhausting your moves, then your Fishing Day ends and you proceed to the next Fishing Day.

POKEMON TO CAPTURE AND TREASURES TO COLLECT

Each Pokémon you capture becomes a stepping stone to greatness, but you can only achieve greatness if you can successfully capture them. As mentioned, capturing a particular Pokémon per Locale increases your fame by an amount; repeated captures of the same Pokémon, however, will yield less and less fame each time, until you no longer gain fame every time you catch that particular Pokémon.

Each Pokémon has an encounter rate and a capture rate, which can be augmented depending on the fishing gear you are using. Each Pokémon also lives only at certain depths, and thus would require you to travel further away from the Port. If the depth of the water you are currently in isn't deep or shallow enough for a Pokémon, the encounter rate of the Pokémon is basically 0. For example, if you are in Shallow Water in the Lake of Rage, you have a 50% chance to encounter a Magikarp when you cast your line, and 0% chance for anything else. If you are in Very Deep Water of the Union Cave, then you have a 15% chance to encounter a Shellder, and 0% for anything else.

The Rare Pokémon of each Locale has a 100% Encounter Rate and 10% Capture Rate, but only if you can reach the Legendary Tile of the Locale of the Rare Pokémon. Again, only one instance of a Rare Pokémon is available in each Locale; once captured, they can no longer be captured again. Also, by capturing the Rare Pokémon of a Locale, you earn the fishing badge of that Locale.

Below is a list of all the Regular Pokémon you can capture, the amount of Fame you gain for capturing them, the Locale they are found, the depths at which they are encountered and their base encounter and capture rates.

POKEMON	FAME	LOCALE	DEPTH ENCOUNTERD	ENCOUNTER RATE	CAPTURE RATE
Magikarp	10% (reduced by 2% each capture)	Lake of Rage	Shallow Water	50%	40%
Tentacool	20% (reduced by 5% each capture)	Lake of Rage	Deep Water	25%	20%
Staryu	30% (reduced by 10% each capture)	Lake of Rage	Very Deep Water	15%	10%
Goldeen	10% (reduced by 2% each capture)	Union Cave	Shallow Water	50%	40%
Horsea	20% (reduced by 5% each capture)	Union Cave	Deep Water	25%	20%
Shelder	30% (reduced by 10% each capture)	Union Cave	Very Deep Water	15%	10%
Remoraidd	10% (reduced by 2% each capture)	Route 119	Shallow Water	50%	40%
Quilfish	20% (reduced by 5% each capture)	Route 119	Deep Water	25%	20%
Carvanha	30% (reduced by 10% each capture)	Route 119	Very Deep Water	15%	10%
Frillish	10% (reduced by 2% each capture)	Fiore's Sea	Shallow Water	50%	40%
Finneon	20% (reduced by 5% each capture)	Fiore's Sea	Deep Water	25%	20%
Alomomora	30% (reduced by 10% each capture)	Fiore's Sea	Very Deep Water	15%	10%
Chinchou	10% (reduced by 2% each capture)	Marine Cave	Shallow Water	50%	40%
Wailmer	20% (reduced by 5% each capture)	Marine Cave	Deep Water	25%	20%
Relicanth	30% (reduced by 10% each capture)	Marine Cave	Very Deep Water	15%	10%

Apart from Pokémon, you can also hook in treasures, depending on the Locale you are in. All treasures you collect are automatically sold once you reach Port; you can use the money you earned to buy and upgrade your Fishing Gear. Treasures can only be hooked at certain locations in the map (Treasure Tiles, see APPENDIX for the maps of each Locale), and can be hooked as many times as you want using whatever Fishing Gear you might have; however, like Pokémon, Treasures also have encounter rates, which are also augmented by the Fishing Gear you are using. Once you encounter a Treasure however, it is automatically hooked (hence a 100% capture rate). This encounter rate is at 25%. Below is a list of Treasures you can hook, Locales where they are found and how much you can get for hooking them.

TREASURE	LOCALE	PRICE
Pearl	Lake of Rage	1000 ₪
Stardust	Union Cave	2500 ₪
Big Pearl	Route 119	3000 ₪
Nugget	Fiore's Sea	4500 ₪
Big Nugget	Marine Cave	10000 ₪

BOAT AND FISHING GEAR

One cannot be a Fisherman without the tools of their trade. The basic tools for a Fisherman are a trusty Old Rod (which allows you to encounter and capture Pokémon at their base rates), a Basic Tackle Box (which allows you at most 5 casts) and a simple Row Boat (which gives you 10 moves per day). Of course, if you gain enough money, you can choose to upgrade and customize these tools so you can capture rarer and rarer Pokémon with greater and greater degrees of success!

Your Fishing Rod is your main capturing tool, without it, you cannot even begin to fish. As mentioned, you start with an Old Rod, which you can upgrade into a Good Rod, a Super Rod, and finally into a Master Rod, if you can pay the price. Each Rod upgrade increases the Capture and Encounter rates of all Pokémon you can capture by a certain amount. Below is a list of all the Rods, their cost and the increase in capture and encounter rates afforded by each.

ROD	COST	ENCOUNTER RATE	CAPTURE RATE
Old Rod	Starting Rod	+0%	+0%
Good Rod	3000 ₪	+10%	+5%
Super Rod	8000 ₪	+15%	+20%
Master Rod	20000 ₪	+20%	+40%

Each Rod also has 3 points of customization, the Lure, the Line and the Reel. Each has a particular effect on the Encounter and Capture Rates of all the Pokémon you can capture, similar to Rods. However, only one customization can be attached per point of customization for every Rod, and once attached, you can no longer remove a customization, you would have to buy a new one. Below is a list of all the available customizations, their cost, their point of customization and their effect on Capture and Encounter Rates.

CUSTOMIZATION	COST	POINT OF CUSTOMIZATION	ENCOUNTER RATE	CAPTURE RATE
Great Lure	500 ₪	Lure	+5%	+5%
Ultra Lure	700 ₪	Lure	+10%	+5%
Master Lure	900 ₪	Lure	+30%	+7%
Great Line	700 ₪	Line	+0%	+10%
Ultra Line	800 ₪	Line	+0%	+15%
Master Line	900 ₪	Line	+0%	+25%
Great Reel	800 ₪	Reel	+10%	+10%
Ultra Reel	950 ₪	Reel	+18%	+18%
Master Reel	1000 ₪	Reel	+21%	+21%

Your Tackle Box determines how many times you can cast your line per visit to a Locale. This is refreshed every time you visit a Port (although, as mentioned, visiting a Port after you have started exploring will result in you ending your Fishing Day). If you run out of casts, then you are forcibly returned back to Port. As mentioned, you start with a Basic Tackle Box, which allows 5 casts. Below is a list of the different kinds of Tackle Boxes, how much each costs and how the number of casts each Tackle Box affords.

TACKLE BOX	COST	CASTS
Basic Tackle Box	Starting Tackle Box	5
Good Tackle Box	1500 ₪	8
Super Tackle Box	2000 ₪	10
Master Tackle Box	2500 ₪	15

Finally, your Boat allows you to explore your Locale, giving you a certain number of moves which you can use to explore the Locale you are in. Once captured, Lapras can also serve as a Boat. Below is a list of Boats, their cost and the number of moves each Boat affords you.

BOAT	COST	MOVES
Row Boat	Starting Boat	5
Speed Boat	3500 ₺	10
Sharpedo Boat	5000 ₺	15
Lapras	Cannot be bought	25

Boats (except for Lapras, which only acts as a boat) also have a point of customization, the Engine, which follows the same rules as the customizations of the Rod. There is only one variant of this Engine, the Team Aqua Engine, which costs 1000 ₺. Attaching the Team Aqua Engine to your boat allows you to move for half the cost, meaning each move costs half a move instead of the normal one move.

Oh, and due to the International Fishery Importation and Preservation Law, your fishing equipment cannot be imported from Locale to Locale, which means if you bought a Super Rod with a Master Lure, Master Line and Great Reel, a Speedboat with a Team Aqua Engine and a Master Tackle Box in the Port of the Lake of Rage, you can only use those equipment in the Lake of Rage and not anywhere else. No rules on Pokémon Importation exist, however.

FISHING AND GAME MECHANICS

Because you are an impatient Pokémon Fisherman, you only gave yourself 30 days to become the Ultimate Pokémon Fishing Champion. With your Old Rod, Basic Tackle Box and Row Boat tucked safely in your backpack (don't look at me like that, I don't know how they're able to stuff a Bicycle in their backpacks in the Pokémon games too!), you head out to either the Lake of Rage or the Union Cave to start your Fishing Day.

Then a sudden realization stops you dead on your tracks. Wait, how do I fish again?

Fishing is a very simple affair. First, you select the Locale where you want to fish. Then, you take your boat from the Port of your selected Locale to the place where you want to fish (remember, you only have a limited number of moves before you are forcibly returned to port, so use them well). Once there, you simply need to cast your line and hope for the best. Depending on how deep the water is, what Pokémon lives there and your equipment and upgrades, you can either encounter a Pokémon or not. If not, then you can try again, or you can move to a different location. Once you encounter a Pokémon, however, then you have the chance to capture it, based on the capture rate of the Pokémon after factoring in your equipment and upgrades. You repeat this until you run out of moves or you run out of casts. Then you are returned back to the Port and your Fishing Day ends. You can also choose to go back to the Port yourself, if you so choose.

Now, what happens when you catch a Pokémon? When you catch a Pokémon, your fame for that Locale increases, based on the Fame given by the Pokémon you caught. Remember that catching a Pokémon multiple times (doesn't have to be consecutive, just multiple times) reduces the Fame you can get from that Pokémon. And yes, it is possible to not get Fame for a Pokémon captured, if you catch that Pokémon often enough. Once you reach 100% fame for a Locale, you can now fish in the Legendary Tile of that Locale, provided you can still reach it. Fame doesn't refresh, so you can try again the next Fishing Day if you can't capture the Rare Pokémon. Once you capture the Rare Pokémon, you earn the Badge of that Locale and unlock other Locales too (depending on the Rare Pokémon).

Simple enough right? But as you might have noticed, you get a better chance of catching rarer Pokémon if your equipment has been upgraded. Upgrading costs money though, so how do you earn money? Well, simply travel to any Treasure Tile in the Locale you are in, cast your line as if you were fishing, and hope you get a treasure! Treasure is automatically sold when you go back to Port, but again, remember that doing so ends your Fishing Day.

How will you move around the Locale you ask? Well, the default controls are W for up, A for left, S for down, D for right and F to cast your line. That's really all there is to it. You can change this control scheme if you want for as long as you can do all the five basic actions (move up, move left, move down, move right and cast your line).

At any point in the game, the player might choose to exit. Saving one's progress is not mandatory, but would merit bonus points for this Machine Project.

MACHINE PROJECT PHASES AND DELIVERABLES

For the first phase of your Machine Project, you are required submit an Object Based implementation of of the Core Features of Pokémon Fishing (Locale Movement, Pokémon, Upgrades, Fishing, etc.), but scaled down. You only need to make the Lake of Rage Locale, the Old Rod (no Upgrades yet), the Basic Tackle Box, the Row Boat and all the Pokémon that can be captured in the Lake of Rage Locale.

You do not need to implement a Graphical User Interface (GUI) for this phase of the MP yet; a simple text based UI that will do. For the movement of the player, the user will have to input a command (right, left, up, down and fish) and the program should display the updated location of the player. You are not required to clear the screen (simply reprinting the field with the updated location will suffice).

For the second phase of your Machine Project, you are required to submit an object based implementation of the full Pokémon Fishing game, which includes all the requirements of this MP. A graphical user interface must be created that is both functional and useable, and all the requirements must be met and be visible on the UI created. There will be no need for animations, but perhaps a way to indicate what is happening on screen should be included in the UI (text prompts perhaps on a side label, especially for the Fishing Encounter and Capture). You may use the control scheme indicated in the Fishing Game Mechanics section, or you may create buttons on the screen that will allow the player to move and fish. Note that, since the number of moves is important (and is dictated by the boat you are using) you are not allowed to click directly the square where the player will go.

For both phases of the Machine Project, you are required to submit a UML class diagram of your program. The class diagram has to be designed with the appropriate object-oriented programming principles.

GENERAL REQUIREMENTS

The following general set of guidelines should be followed:

1. The implementation of this project will require you to use Java to be compiled and ran with Eclipse, or the command prompt compiler / interpreter.
2. You are required to create and use functions and classes whenever possible. Make sure to use Object-Based and Object Oriented Programing concepts properly. No brute force solution.
3. The above description of the program is the basic requirement. Any additional feature will be left to the creativity of the student. Bonus points would be awarded depending on the additional implemented features. These additional features could include new character classes, new enemies, etc. Depending on the scale of the new feature, additional points will be awarded to the team. However, make sure that all the minimum requirements are met first; if this is not the case then no additional points will be credited despite the additional features.
4. For the minimum requirements of this MP, all the requirements written in this document should be present and working. A text based interface would do.
5. Do not forget to include internal documentation (comments) in your code. At the very least, there should be an introductory comment and a comment before every class and every method. This will be used later to generate a Javadoc, which is the required External Documentation for your Machine Project. You may use Eclipse or the command prompt command javadoc to create this documentation, but it must be PROPERLY constructed.
6. Statements and methods not taught in class can be used in the implementation. However, these are left for the student to learn on his or her own.
7. Submission of the project is on the indicated submission deadlines. Late submissions **WILL NOT BE ACCEPTED**. A signed copy of the proof of submission will be returned to you.
8. Any instruction not followed will incur deductions (or a 0.0).
9. This project is by pair. Copying other people's work and/or working in collaboration with other teams are **not** allowed and are punishable by a grade of **0.0** for the entire OBJECTP course and a case may be filed with the Discipline Office. In short, do not risk it; the consequences are not worth the reward. (Also, what is a measly passing grade compared to a life-long conscience burden?)
10. During the MP demo, the student is expected to appear on time, to answer questions in relation to the output and to the implementation (source code) of the project, and/or to revise the program based on a given demo problem. Failure to meet either of these requirements could result to a grade of **0.0** for the project.
11. It should be noted that during the MP demo, it is expected that the program can be compiled successfully and will run. If the program does not run, the grade for that phase is 0. However, a running program with complete features may not necessarily get full credit, as implementation (i.e., code) will still be checked.

SUBMISSION CHECKLIST FOR EACH PHASE

- CD (placed in a case) or flash drive, either of which should be properly labeled with name and section, containing at least the following files:

- The Java source files
- The output of Javadoc
- A copy of the UML Class Diagram
- any additional libraries you used for your implementation

Take note that in case of a flash drive submission, the flash drive **may not** be returned.

- Printout of the following:

- The Java source files (set the font size to 10 to save space).
- The output of Javadoc for the classes that you created
- UML Class Diagram

- Short brown envelope containing all the above requirements, with 2 copies of the proof of submission. One of the proof of submission is attached at the upper right corner of the back of the envelope (not the side with the flap). Each should indicate the following information:

Name :
Section :
Submitted To :
Received by :
Date / Time Received :

- Email the Java source files as attachments to YOUR own email address and to the email address of the instructor (dimaunahan.ryan.dlsu@gmail.com) on or before the deadline (to serve as back-up). Take note that the actual submitted work would take precedence over the email back-up, and in the case of discrepancies, the actual submission would be considered.

APPENDIX A: LOCAL MAPS

Legend: P – Port, S – Shallow Water, D – Deep Water, V – Very Deep Water, L – Legendary Tile, T- Treasure Tile, U – Land (Impassable terrain).

Lake of Rage

U	U	U	U	U	U	U	U	U	U	U
U	U	U	V	V	V	V	V	V	U	U
U	U	V	V	D	D	D	D	D	U	U
U	U	V	D	S	S	T	S	D	V	U
U	V	D	D	S	S	S	S	D	V	U
U	V	S	S	S	P	S	D	D	V	U
U	V	D	D	S	S	S	D	D	V	U
U	V	D	D	D	S	D	D	D	V	U
U	V	V	D	D	D	D	D	V	V	U
U	U	U	V	V	V	V	V	L	U	U
U	U	U	U	U	U	U	U	U	U	U

Route 119

P	S	S	S	S	D	D	U	U	U	U
U	S	S	S	S	D	T	U	U	U	U
U	S	S	S	S	D	D	U	U	U	U
U	S	S	S	L	D	D	U	U	U	U
U	D	D	D	D	D	D	U	U	U	U
U	D	D	D	D	D	D	U	U	U	U
U	D	V	T	V	V	V	U	U	U	U
U	U	U	V	V	V	V	V	V	U	U
U	U	U	U	V	V	V	V	V	V	U
U	U	U	U	V	V	V	V	V	V	U
U	U	U	U	V	V	V	V	V	V	U

Union Cave

U	U	U	U	U	L	U	U	U	U	U
U	U	V	V	V	V	V	V	V	U	U
U	V	V	V	V	V	V	V	V	V	U
U	V	D	D	D	D	D	D	D	V	U
U	D	D	D	D	D	D	T	D	D	U
U	D	D	D	D	D	D	D	D	D	U
U	D	S	S	S	S	S	S	S	D	U
U	D	S	T	S	S	S	S	S	D	U
U	S	S	S	S	S	S	S	S	S	U
U	U	S	S	S	S	S	S	S	U	U
U	U	U	U	U	P	U	U	U	U	U

Fiore's Sea

V	V	V	V	V	V	V	V	V	V	L
V	V	V	V	V	V	S	U	S	V	V
D	D	D	D	D	S	U	U	U	S	V
S	S	U	S	S	D	S	U	S	D	V
S	U	U	U	S	D	D	D	D	D	V
D	D	U	D	D	D	T	D	D	D	V
T	D	D	D	D	D	D	D	D	D	V
S	S	S	S	S	D	D	D	D	D	V
S	S	S	S	S	D	D	D	D	D	V
S	S	S	S	S	D	D	D	D	D	V
P	S	S	S	S	D	D	D	D	D	V

Marine Cave

U	V	V	D	V	L	V	V	V	V	U
U	V	D	S	D	V	V	V	V	V	U
U	D	S	U	S	D	D	D	D	D	U
U	S	U	U	U	S	D	D	D	D	U
U	D	S	U	S	D	D	S	D	D	U
U	D	D	S	D	D	S	U	T	D	U
U	D	D	D	D	S	U	U	U	S	U
U	D	D	T	S	S	S	U	S	D	U
U	D	D	S	S	S	S	S	D	D	U
U	D	D	S	S	S	S	S	D	D	U
U	D	D	S	S	P	S	S	D	D	U

APPENDIX B: RUBRIC FOR ASSESSMENT

Criteria	Exemplary	Satisfactory	Developing	Beginning
Program Correctness and Completeness	<p>36-50</p> <p>The application meets all the requirements specified in the project specification.</p> <p>The code is syntactically and logically correct for all cases.</p> <p>Implementation of the program follows the indicated guidelines and does not violate indicated restrictions.</p> <p>The implementation also exhibits appropriate use of programming constructs.</p>	<p>21-35</p> <p>The code works for typical input, but fails for minor special cases; the major requirements are met, though some minor ones are not.</p> <p>Some implementation of the program violates indicated restrictions.</p>	<p>11-20</p> <p>The code sometimes fails for typical input.</p> <p>Many parts of the program implementation violate indicated restrictions and some parts of the solution are not implemented using appropriate programming constructs.</p>	<p>0-10</p> <p>The code often fails, even for typical input. Most indicated restrictions were violated.</p> <p><i>Note: Program that does not run and/or implemented incorrectly (based on specifications and restrictions) automatically gets 0 for this phase's output.</i></p>
Design Correctness	<p>18-20</p> <p>The UML diagram conforms to a logical design based on the requirements.</p> <p>The program was implemented based on the design.</p>	<p>11-17</p> <p>The UML diagram conforms to a logical design based on the requirements.</p> <p>The program was not implemented based on the design.</p>	<p>4-10</p> <p>The UML diagram is only partially depicting the correct design, thus the program output is not necessarily coded properly.</p>	<p>0-3</p> <p>The UML diagram is wrong or there is no UML diagram.</p>
Effective Communication / Concept and Code Understanding	<p>18-20</p> <p>Answers to questions are correct, reasonable, and reflective of the code. The justifications provided are sound.</p> <p>Demo problem was solved correctly within the time limit.</p>	<p>11-17</p> <p>Answers to questions are correct, but some justifications provided are weak.</p> <p>There are minimal errors in the solution to the demo problem.</p>	<p>4-10</p> <p>Answers to questions are correct, but cannot justify solution (e.g., solution via trial and error, rather than proper understanding and application of concepts).</p> <p>There is major headway in the</p>	<p>0-3</p> <p>Correct understanding of the problem, but was unable to explain workings of code provided.</p> <p>Only a minor part of the demo problem was solved.</p>

			solution to the demo problem, but the solution was not completed in time.	<i>Note: Failure to explain and justify workings of the code submitted will automatically merit 0 for this phase's output.</i>
Readability	<p>9-10</p> <p>The program conforms to a coding standard that promotes code readability.</p> <p>Internal and external documentation is comprehensive.</p>	<p>6-8</p> <p>Minor code formatting does not exhibit consistency in coding standard.</p> <p>Only methods and classes have proper internal documentation. External documentation is complete.</p>	<p>1-5</p> <p>Minimal internal documentation and code readability.</p> <p>External documentation is incomplete or does not contain useful information (like parameters of methods or descriptions of attributes).</p>	<p>0</p> <p>Code is not readable.</p> <p>No internal and external documentation.</p>