Sample output I:

**********************************************************************
Hi all! Welcome aboard our most exciting deep space exploration
program to model and detect planets in the Milky Way
where no one has gone before in search of galactic civilisations.
So strap in and enjoy the ride!

Please enter your patron type.
(Enter either "Science Rookie" or "Science Enthusiast" with matching cases.
Type "SR" or "SE" for is also fine.)
--> SE

----------------------------------------------------------------------
Our galaxy is incredibly vast and old with more planets than
the population on Earth and one can never cease to wonder about
the possibility of potential civilisations in the vicinity of
our home planet. Some of those who came before us had attempted
to gauge the boundaries of the Milky Way and the civilisations
that might have come into being within it. Dr. Frank Drake devised
an equation in the 1960s with the purpose to determine the number
of extraterrestrial civilisations based on quantifiable factors.
The following section will run you through this equation.

Please estimate the proportion of potentially habitable planets on which a technological civilisation develops.
(A proportion would ideally be a number greater than 0 less than 1 and typically this value is very small.)
--> 0.02

The number of extraterrestrial civilisations in our galaxy with
which we might expect to be able to communicate is 700

----------------------------------------------------------------------
The next section will introduce you to the detection of
extraterrestrial planets. There are several ways we have
at our disposal that have yielded success. The method we are going
to be using is the Kepler space telescope modelling. This method
detects planets by measuring the transit light curve as a planet
traverses between its star and the Earth. If a dimming at every
regular interval is detected through the transit then it is safe
to assume that there is a fair chance that an orbital planet is

passing in front of the star.

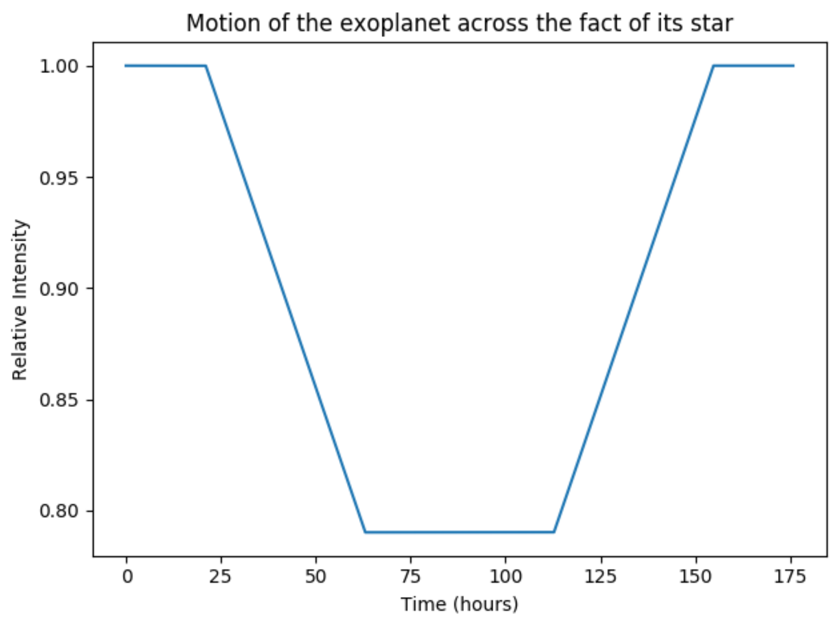
Please enter the relative size of the planet you want to find.
(A multiplier with which you want the program to calculate in relation to Earth's radius.
e.g. 10 will give the value of 10 * 6371 = 63710(km))
--> 50

Please enter the relative distance of that planet to its star.
(A multiplier with which you want the program to calculate in relation to Earth's distance from the sun.
e.g. 10 will give the value of 10 * 149600000 = 1496000000(km))
--> 50

The period of the orbit of the exoplanet is 3099839.97 hours
This is the time for the exoplanet to make one complete orbit around its star. The period of orbit is determined by the exoplanet's speed, and the distance the exoplanet is from its star.

The transit time of the exoplanet is 91.75 hours
The velocity of the exoplanet and the diameter of its star will determine the transit time. The faster the exoplanet is moving, the shorter the transit time and, likewise, the larger the diameter of the star, the longer the transit time.

The minimum relative intensity of the exoplanet is 0.79
When the exoplanet is fully between the Earth and the exoplanet's star, the intensity of the star observed from the Earth will be decreased as the exoplanet blocks some of the light from the star. The minimum relative intensity is the ratio of the observed intensity when the exoplanet is in front of the star to the observed intensity when the exoplanet is not in front of the star.

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The transit light curve method is highly effective and sensitive for detecting extraterrestrial planets. However, it is not without limitations. One of the problems is that an orbital cycle of a planet could have months or years, but a transit is mostly completed in hours or days, so a transit period only makes up a small portion of an entire orbital cycle. Therefore, an actual transit could be extremely hard to observed. This proves to be more difficult as often we need to measure multiple instances of a planet's transit in order to ascertain the existence of the exoplanet. Additionally, in order for the transit light curved to be observed, the transit planet needs to pass between its star and the Earth, which is extremely rare, and thus most transits are simply never detected.

Great news! The exoplanet can be detected.

--------------------------------------------------------------------

Would you like to try again with another exoplanet search?
(Please enter either "Yes" or "No" with matching cases.
Type "Y" or "N" is also fine.)
--> N

Thank you brave explorers! We hope you had fun and will see you in our next journey into space.

Sample output II:

**********************************************************************
Hi all! Welcome aboard our most exciting deep space exploration
program to model and detect planets in the Milky Way
where no one has gone before in search of galactic civilisations.
So strap in and enjoy the ride!

Please enter your patron type.
(Enter either "Science Rookie" or "Science Enthusiast" with matching cases.
Type "SR" or "SE" for is also fine.)
--> SR

----------------------------------------------------------------------
Wonders never cease! Come along with us to find alien planets and
the cultures that they live in. Look far and beyond into space to
meet with civilisations our ancestors have never managed to find.
There is an interesting equation to figure out the number of
fascinating civilisations out there. Bear with us for a moment
and let's find out!

Guess a number between 0 and 1 to get the number of civilisations.
--> 0.02

Great work! We have found 700 civilisations.

----------------------------------------------------------------------
Now let's continue and try to actually find those planets. What
we are going to do is work out how long it will take for a planet
to pass in front of its star. If we can find such an event then
we can tell that a planet exists.

Please enter the relative size of the planet you want to find.
(A multiplier with which you want the program to calculate in relation to Earth's radius.
e.g. 10 will give the value of 10 * 6371 = 63710(km))
--> 50

Please enter the relative distance of that planet to its star.
(A multiplier with which you want the program to calculate in relation to Earth's distance
from the sun.
e.g. 10 will give the value of 10 * 149600000 = 1496000000(km))

--> 50

The period of the orbit of the exoplanet is 3099839.97 hours
This is the time for the exoplanet to make one complete orbit
around its star. The period of orbit is determined by the
exoplanet's speed, and the distance the exoplanet is from its star.

The transit time of the exoplanet is 91.75 hours
The velocity of the exoplanet and the diameter of its star
will determine the transit time. The faster the exoplanet is moving,
the shorter the transit time and, likewise, the larger the
diameter of the star, the longer the transit time.

The minimum relative intensity of the exoplanet is 0.79
When the exoplanet is fully between the Earth and the
exoplanet's star, the intensity of the star observed from
the Earth will be decreased as the exoplanet blocks some of
the light from the star. The minimum relative intensity is the
ratio of the observed intensity when the exoplanet is in front of
the star to the observed intensity when the exoplanet is not in
front of the star.

Great news! The exoplanet can be detected.

------------------------------------------------------------------
Would you like to try again with another exoplanet search?
(Please enter either "Yes" or "No" with matching cases.
Type "Y" or "N" is also fine.)
--> N

Thank you brave explorers! We hope you had fun and
will see you in our next journey into space.