

Total Fibonacci Prime Labeling of Some Graphs

¹M. Subbulakshmi, ²J. Jenifer* (Reg No: 20212052092001),

¹ Associate Professor, ² Research Scholar

^{1,2}PG and Research Department of Mathematics,

^{1,2}G.Venkataswamy Naidu College, (This college is affiliated to Manonmaniam Sundaranar University, Tirunelveli), Kovilpatti - 628 502, Thoothukudi, Tamil Nadu, India.

¹ mslakshmi1966@gmail.com , ² johnkennedy46164@gmail.com

ABSTRACT

In this paper, we introduce a new type of labeling called Total Fibonacci Prime labeling which labels vertices and edges using Fibonacci numbers. Moreover, we investigate various graphs, such as paths, cycles, crowns, (n,2)-centipede, subdivisions of comb graphs, and prove that they are all Total Fibonacci Prime graphs.

KEYWORDS: Path related graphs, cycle related graphs, Fibonacci Prime labeling, Total Fibonacci Prime labeling.

1. INTRODUCTION AND PRELIMINARIES

This article deals with simple graphs. For notations and terminology we refer to Bondy and Murthy [1]. Fibonacci numbers was introduced by Leonardo of Pisa in his book *Liber Abaci* 1202. The vertices or edges or both of a graph are assigned by an integer based on some rules is known as graph labeling initiated by Rosa in 1967. Koh, Lee and Tan was first introduced the labeling using Fibonacci numbers in 1978, Fibonacci Tree [2].

Roger Entringer introduced the Prime Labeling and discussed by Tout in paper [3]. The Fibonacci Prime Labeling was introduced by C. Sekar, S. Chandrakala [4]. They were proved cycle related graph, path related graphs, udukkai and octopus [5] are Fibonacci Prime graph. M. Subbulakshmi, J. Jenifer were established the Fibonacci Prime labeling for snake related graphs, one point union of some graphs [6].

A Total Prime labeling was defined by M. Ravi (a) Ramasubramanian, R. Kala and they were proved that paths, star, bistar, comb, cycles (C_n where n is even), helm, fan graph and some other graphs are Prime graphs [8].

2.MAIN RESULTS

Definition 2.1.

A Total Fibonacci Prime labeling of a graph $G = (V, E)$ is a bijection

$T^*: V(G) \cup E(G) \rightarrow \{F_2, F_3, \dots, F_{|V|+|E|+1}\}$ is defined by

(i). For each edge $e = uv$ the labels of the end vertices u and v are relatively prime.

(ii) For any vertex with a degree atleast 2, the labels of any two edges incident to that vertex are relatively prime.

A graph which admits Total Fibonacci Prime labeling is called Total Fibonacci Prime graph.

Theorem 2.2. Path graph $P_m, m \geq 2$ is a Total Fibonacci Prime graph.

Proof. Let P_m be path graph, where $m \geq 2$. Let $V(P_m) = \{v_i / 1 \leq i \leq m\}$ be a vertex set and $E(P_m) = \{v_i v_{i+1} / 1 \leq i \leq m - 1\}$ be an edge set. The order and size of path are m and $m - 1$.

A function $T^*: V(P_m) \cup E(P_m) \rightarrow \{F_2, F_3 \dots F_{2m}\}$ is defined by,

$T^*(v_i) = F_{2i}$, where $1 \leq i \leq m$;

$T^*(v_i v_{i+1}) = F_{2i+1}$, where $1 \leq i \leq m - 1$;

Then for each edge $\gcd(T^*(v_i), T^*(v_{i+1})) = 1$, where $1 \leq i \leq m - 1$

For each vertex $\gcd(T^*(v_i v_{i+1}), T^*(v_{i+1} v_{i+2})) = 1$, where $1 \leq i \leq m - 2$

Hence the path graph $P_m, m \geq 2$ is a Total Fibonacci Prime graph.

Theorem 2.3. Cycle C_n is a Total Fibonacci Prime graph for $n \geq 3$.

Proof. Let C_n be a cycle for $n \geq 3$.

Let $V(C_n) = \{v_i / 1 \leq i \leq n\}$ be a vertex set and $E(C_n) = \{v_n v_1\} \cup \{v_i v_{i+1} / 1 \leq i \leq n - 1\}$ be an edge set. The order and size of cycle are n and n .

A function $T^*: V(C_n) \cup E(C_n) \rightarrow \{F_2, F_3 \dots F_{2n+1}\}$ is defined by,

$T^*(v_n v_1) = F_{2n+1} \forall n \geq 3$

Case 1. If $n \equiv a \pmod{3}, a = 0, 2$ and $n \geq 3$

$T^*(v_i) = F_{2i}$, where $1 \leq i \leq n$;

$T^*(v_i v_{i+1}) = F_{2i+1}$, where $1 \leq i \leq n - 1$;

Case 2. If $n \equiv 1 \pmod{3}$ and $n > 3$

$T^*(v_1) = F_3$; $T^*(v_i) = F_{2i}$, where $2 \leq i \leq n$;

$T^*(v_1 v_2) = F_2$; $T^*(v_i v_{i+1}) = F_{2i+1}$, where $2 \leq i \leq n - 1$;

For each edge, $\gcd(T^*(v_i), T^*(v_{i+1})) = 1$, where $1 \leq i \leq n - 1$ and $\forall n \geq 3$

For each vertex, $\gcd(T^*(v_i v_{i+1}), T^*(v_{i+1} v_{i+2})) = 1$, where $1 \leq i \leq n - 2$ and $\forall n \geq 3$

Hence the Cycle C_n is a Total Fibonacci Prime graph.

Theorem 2.4. The Crown Graph C_n^* is a Total Fibonacci Prime graph for $n \geq 3$.

Proof. Let C_n^* be a crown graph for $n \geq 3$ and

Let $V(C_n^*) = \{u_i / 1 \leq i \leq n\} \cup \{v_i / 1 \leq i \leq n\}$ be a vertex set and and size of crown graph are $2n$ and $2n$.

$E(C_n^*) = \{u_i v_i / 1 \leq i \leq n\} \cup \{v_i v_{i+1} / 1 \leq i \leq n\}$ be an edge set. The order

A function $T^*: V(C_n^*) \cup E(C_n^*) \rightarrow \{F_2, F_3 \dots F_{4n+1}\}$ is defined by,

$T^*(u_i) = F_{4i}$, where $i \equiv 0 \pmod{3}, i > 0$ and $i \leq n$

$T^*(u_i) = F_{4i-1}$, where $i \equiv 1 \pmod{3}$ and $i \leq n$

$T^*(u_i) = F_{4i+1}$, where $i \equiv 2 \pmod{3}$ and $i \leq n$

$T^*(v_i) = F_{4i-1}$, where $i \equiv 0 \pmod{3}, i \equiv 2 \pmod{3}, i > 0$ and $i \leq n$

$T^*(v_i) = F_{4i+1}$, where $i \equiv 1 \pmod{3}$ and $i \leq n$

$T^*(u_i v_i) = F_{4i+1}$, where $i \equiv 0 \pmod{3}, i > 0$ and $i \leq n$

$T^*(u_i v_i) = F_{4i}$, where $i \equiv 1 \pmod{3}, i \equiv 2 \pmod{3}$ and $i \leq n$

$T^*(v_i v_{i+1}) = F_{4i+2}, 1 \leq i \leq n - 1, f(v_n v_1) = F_2$

For each edge, $\gcd(T^*(v_i), T^*(v_{i+1})) = \gcd(F_{4i+2}, F_{4i+3}) = 1$, where $1 \leq i \leq n - 1$

$\gcd(T^*(v_1), T^*(v_n)) = \gcd(F_5, F_{4n-1}) = 1$,

where $n \equiv 0 \pmod{3}, n \equiv 2 \pmod{3}, i > 0$ and $i \leq n$

$\gcd(T^*(v_1), T^*(v_n)) = \gcd(F_5, F_{4n+1}) = 1$, where $n \equiv 1 \pmod{3}$ and $n > 1$

$\gcd(T^*(u_i), T^*(v_i)) = \gcd(F_{4i}, F_{4i-1}) = 1$, where $i \equiv 0 \pmod{3}, i > 0$ and $i \leq n$

$= \gcd(F_{4i-1}, F_{4i+1}) = 1$, where $i \equiv 1 \pmod{3}, i \equiv 2 \pmod{3}$ and $i \leq n$

For each vertex, $\gcd(T^*(v_i v_{i+1}), T^*(v_{i-1} v_i)) = \gcd(F_{4i+2}, F_{4i+1}) = 1$, where $1 \leq i \leq n - 1$;

$\gcd(T^*(v_i v_{i+1}), T^*(u_i v_i)) = \gcd(F_{4i+2}, F_{4i}) = 1$

$= \gcd(F_{4i+2}, F_{4i+1}) = 1$, where $1 \leq i \leq n - 1$

$$\gcd(T^*(v_i v_{i-1}), T^*(u_i v_i)) = \gcd(F_{4i-2}, F_{4i}) = 1$$

$$= \gcd(F_{4i-2}, F_{4i+1}) = 1, \text{ where } 2 \leq i \leq n$$

$$\gcd(T^*(v_n v_1), T^*(u_n v_n)) = \gcd(F_2, F_{4n}) = 1, \text{ where } \forall n$$

Hence crown graph C_n^* is a Total Fibonacci Prime graph for $n \geq 3$.

Theorem 2.5. Tadpole Graph $T_{m,n}$ is a Total Fibonacci Prime graph for $m \geq 3, n \geq 2$.

Proof. Let $T_{m,n}$ be a tadpole graph for $m \geq 3$ and $n \geq 2$

Let $V(T_{m,n}) = \{v_i \mid 1 \leq i \leq m+n\}$ be a vertex set and $E(T_{m,n}) = \{v_i v_{i+1} \mid 1 \leq i \leq m+n-1\} \cup \{v_m v_1\}$ be an edge set. The order and size of tadpole graph is $+n$ and $m+n$.

A function $T^*: V(T_{m,n}) \cup E(T_{m,n}) \rightarrow \{F_2, F_3, \dots, F_{2(m+n)+1}\}$ is defined by

$$T^*(v_i v_{i+1}) = F_{2(i+1)}, \text{ where } 1 \leq i \leq m+n-1 \text{ and } \forall m \geq 3, n \geq 2;$$

Case 1. If $m \equiv 0 \pmod{3}$ and $m \equiv 2 \pmod{3}$, where $m \geq 3, n \geq 2$

$$T^*(v_i) = F_{2i+1}, \text{ where } 1 \leq i \leq m+n; T^*(v_m v_1) = F_2;$$

Case 2. If $m \equiv 1 \pmod{3}$ where $\forall m \geq 3, n \geq 2$

$$T^*(v_1) = F_2; T^*(v_i) = F_{2i+1}, \text{ where } 2 \leq i \leq m+n; T^*(v_m v_1) = F_3;$$

For each edge,

$$\gcd(T^*(v_i), T^*(v_{i+1})) = \gcd(F_{2i+1}, F_{2i+3}) = 1, \text{ where } 2 \leq i \leq m+n-1;$$

$$\gcd(T^*(v_1), T^*(v_2)) = \gcd(F_3, F_5) = 1,$$

$$\text{where } m \equiv 0 \pmod{3}, m \equiv 2 \pmod{3} \text{ and } m \geq 3$$

$$\gcd(T^*(v_1), T^*(v_2)) = \gcd(F_2, F_3) = 1,$$

$$\text{where } m \equiv 1 \pmod{3} \text{ and } m \geq 3$$

$$\gcd(T^*(v_m), T^*(v_1)) = \gcd(F_{2(m+1)}, F_3) = 1,$$

$$\text{where } m \equiv 0 \pmod{3}, m \equiv 2 \pmod{3} \text{ and } m \geq 3$$

$$\gcd(T^*(v_m), T^*(v_1)) = \gcd(F_{2(m+1)}, F_2) = 1,$$

$$\text{where } m \equiv 1 \pmod{3} \text{ and } m \geq 3$$

For each vertex,

$$\gcd(T^*(v_i v_{i+1}), T^*(v_{i-1} v_i)) = \gcd(F_{2(i+1)}, F_{2i}) = 1,$$

$$\text{where } 2 \leq i \leq m+n-1 \text{ and } \forall m \geq 3, n \geq 2;$$

$$\gcd(T^*(v_1 v_2), T^*(v_m v_1)) = \gcd(F_4, F_2) = 1,$$

$$\text{where } m \equiv 0 \pmod{3}, m \equiv 2 \pmod{3} \text{ and } m \geq 3;$$

$$\gcd(T^*(v_1 v_2), T^*(v_m v_1)) = \gcd(F_4, F_3) = 1, \text{ where } m \equiv 1 \pmod{3} \text{ and } m > 3$$

$$\gcd(T^*(v_{m-1} v_m), T^*(v_{m+1} v_m)) = \gcd(F_{2m}, F_{2(m+1)}) = 1, \text{ where } \forall m \geq 3$$

$$\gcd(T^*(v_{m-1} v_m), T^*(v_m v_1)) = \gcd(F_{2m}, F_2) = 1,$$

$$\text{where } m \equiv 0 \pmod{3}, m \equiv 2 \pmod{3} \text{ and } m \geq 3;$$

$$\gcd(T^*(v_{m+1} v_m), T^*(v_m v_1)) = \gcd(F_{2(m+2)}, F_2) = 1,$$

$$\text{where } m \equiv 0 \pmod{3}, m \equiv 2 \pmod{3} \text{ and } m \geq 3;$$

$$\gcd(T^*(v_{m-1} v_m), T^*(v_m v_1)) = \gcd(F_{2m}, F_3) = 1, \text{ where } m \equiv 1 \pmod{3} \text{ and } \forall n$$

$$\gcd(T^*(v_{m+1} v_m), T^*(v_m v_1)) = \gcd(F_{2(m+2)}, F_3) = 1, \text{ where } m \equiv 1 \pmod{3} \text{ and } \forall n$$

Hence the Tadpole graph $T_{m,n}$ is a Total Fibonacci Prime graph for $m \geq 3, n \geq 2$.

Theorem 2.6. $(n, 2)$ Centipede graph is a Total Fibonacci Prime graph for $n \geq 2$.

Proof. Let G be a $(n, 2)$ Centipede graph, for $n \geq 2$.

Let $V(G) = \{v_i \mid 1 \leq i \leq 3n\}$ be a vertex set and

$$E(G) = \{v_i v_{i+1} \mid i \equiv 1 \pmod{3}, i \equiv 2 \pmod{3} \text{ and } i \leq 3n-1\} \cup$$

$$\{v_i v_{i+3} \mid i \equiv 2 \pmod{3} \text{ and } i < 3n-1\}$$
 be an edge set. The order of G is $3n$ and size of G is $3n-1$.

A function $T^*: V \cup E \rightarrow \{F_2, F_3, \dots, F_{6n}\}$ is defined by

$$T^*(v_i) = F_{2i}, 1 \leq i \leq 3n;$$

$$T^*(v_i v_{i+1}) = F_{2i+1}, \text{ where } i \equiv 1 \pmod{3}, i \equiv 2 \pmod{3} \text{ and } i \leq 3n-1$$

$$T^*(v_i v_{i+3}) = F_{2i+3}, \text{ where } i \equiv 2 \pmod{3} \text{ and } i < 3n-1.$$

For each edge, $\gcd(T^*(v_i), T^*(v_{i+1})) = \gcd(F_{2i}, F_{2(i+1)}) = 1,$

$$\text{where } i \equiv 1 \pmod{3}, i \equiv 2 \pmod{3} \text{ and } i \leq 3n-1;$$

$$\gcd(T^*(v_i), T^*(v_{i+3})) = \gcd(F_{2i}, F_{2(i+3)}) = 1, \text{ where } i \equiv 2 \pmod{3} \text{ and } i < 3n-1;$$

For each vertex, $\gcd(T^*(v_i v_{i-1}), T^*(v_i v_{i+1})) = \gcd(F_{2i-1}, F_{2i+1}) = 1,$

$$\text{where } i \equiv 2 \pmod{3} \text{ and } i \leq 3n-1;$$

$$\gcd(T^*(v_i v_{i-1}), T^*(v_i v_{i+3})) = \gcd(F_{2i-1}, F_{2i+3}) = 1,$$

$$\text{where } i \equiv 2 \pmod{3} \text{ and } i \leq 3n-4;$$

$$\gcd(T^*(v_i v_{i+1}), T^*(v_i v_{i+3})) = \gcd(F_{2i+1}, F_{2i+3}) = 1,$$

$$\text{where } i \equiv 2 \pmod{3} \text{ and } i \leq 3n-4;$$

$$\gcd(T^*(v_i v_{i-3}), T^*(v_i v_{i+3})) = \gcd(F_{2i-3}, F_{2i+3}) = 1,$$

$$\text{where } i \equiv 2 \pmod{3}, i > 2 \text{ and } i < 3n-1.$$

Therefore, $(n, 2)$ Centipede graph is a Total Fibonacci Prime graph for $n \geq 2$.

Theorem 2.7. Subdivision of pendent edges of a comb graph $S(P_n, K_1)$ is a Total Fibonacci Prime graph for $n \geq 2$.

Proof. Let $S(P_n, K_1)$ be a Subdivision of pendent edges of a comb graph for $n \geq 2$.

Let $V(S(P_n, K_1)) = \{v_i \mid 1 \leq i \leq n\} \cup \{v_i' \mid 1 \leq i \leq n\} \cup \{v_i'' \mid 1 \leq i \leq n\}$ be a vertex set and

$$E(S(P_n, K_1)) = \{v_i v_{i+1} \mid 1 \leq i \leq n-1\} \cup \{v_i v_i' \mid 1 \leq i \leq n\} \cup \{v_i v_i'' \mid 1 \leq i \leq n\}$$
 be an edge set. The order and size of $S(P_n, K_1)$ are $|V(S(P_n, K_1))| = 3n, |E(S(P_n, K_1))| = 3n-1$

A function $T^*: V(S(P_n, K_1)) \cup E(S(P_n, K_1)) \rightarrow \{F_2, F_3, \dots, F_{6n}\}$ is defined as follows;

$$T^*(v_i) = F_{6i-4}, \text{ where } 1 \leq i \leq n; T^*(v_i') = F_{6i-2}, \text{ where } 1 \leq i \leq n;$$

$$T^*(v_i'') = F_{6i}, \text{ where } 1 \leq i \leq n;$$

$$T^*(v_i v_{i+1}) = F_{6i+1}, \text{ where } i \not\equiv 4 \pmod{5} \text{ and } i < n;$$

$$T^*(v_i' v_i'') = F_{6i-1}, \text{ where } i \not\equiv 4 \pmod{5} \text{ and } i < n;$$

$$T^*(v_i v_i') = F_{6i-3}, \text{ where } 1 \leq i \leq n; T^*(v_i v_{i+1}) = F_{6i-1}, \text{ where } i \equiv 4 \pmod{5} \text{ and } i < n;$$

$T^*(v_i'v_i'') = F_{6i+1}$, where $i \equiv 4(mod5)$ and $i < n$.

For each edge, $\gcd(T^*(v_i), T^*(v_i')) = \gcd(F_{6i-4}, F_{6i-2}) = 1$, where $1 \leq i \leq n$;

$\gcd(T^*(v_i), T^*(v_{i+1})) = \gcd(F_{6i-4}, F_{6i-2}) = 1$, where $1 \leq i \leq n$;

$\gcd(T^*(v_i'), T^*(v_i'')) = \gcd(F_{6i-2}, F_{6i}) = 1$, where $1 \leq i \leq n$;

For each vertex,

$\gcd(T^*(v_i v_{i+1}), T^*(v_i v_i')) = \gcd(F_{6i-1}, F_{6i-3}) = 1$, where $i \equiv 4(mod5)$ and $i < n$;

$\gcd(T^*(v_i v_{i+1}), T^*(v_i v_i'')) = \gcd(F_{6i+1}, F_{6i-3}) = 1$, where $i \not\equiv 4(mod5)$ and $i < n$;

$\gcd(T^*(v_i v_{i+1}), T^*(v_{i+1} v_{i+2})) = \gcd(F_{6i+1}, F_{6i+7}) = 1$, where $i \not\equiv 4(mod5)$ and $i < n$;

$\gcd(T^*(v_i v_{i+1}), T^*(v_{i+1} v_{i+2}')) = \gcd(F_{6i-1}, F_{6i+5}) = 1$, where $i \equiv 4(mod5)$ and $i < n$;

$\gcd(T^*(v_i v_i'), T^*(v_i v_i'')) = \gcd(F_{6i-3}, F_{6i-1}) = 1$, where $i \not\equiv 4(mod5)$ and $i < n$;

$\gcd(T^*(v_i v_i'), T^*(v_i' v_i'')) = \gcd(F_{6i-3}, F_{6i+1}) = 1$, where $i \equiv 4(mod5)$ and $i < n$

Therefore, subdivision of pendent edges of a comb graph (P_n, K_1) is a Total Fibonacci Prime graph for $n \geq 2$.

Theorem 2.8. Subdivision of edges in a path of a Comb graph $S(P_n, K_1)$ is a Total Fibonacci Prime graph for $n \geq 2$.

Proof. Let G be a subdivision of edges in a path of a comb graph $S(P_n, K_1)$.

Let $V(G) = \{v_i / 1 \leq i \leq 2n - 1\} \cup \{v'_{2i-1} / 1 \leq i \leq n\}$ be a vertex set and

$E(G) = \{v_i v_{i+1} / 1 \leq i \leq 2(n - 1)\} \cup \{v_{2i-1} v'_{2i-1} / 1 \leq i \leq n\}$ be an edge set. The order and size of G is $|V(G)| = 3n - 1$; $|E(G)| = 3n - 2$

A function $T^*: V(S(P_n, K_1)) \cup E(S(P_n, K_1)) \rightarrow \{F_2, F_3, \dots, F_{6n-2}\}$ is defined as follows;

$T^*(v_{2i-1}) = F_{6i-4}$, where $1 \leq i \leq n$; $T^*(v'_{2i-1}) = F_{6i-2}$, where $1 \leq i \leq n$;

$T^*(v_{2i}) = F_{6i}$, where $1 \leq i \leq n - 1$;

$T^*(v_{2i} v_{2i+1}) = F_{6i+1}$, where $1 \leq i \leq n - 1$; $T^*(v_{2i-1} v_{2i}) = F_{6i-1}$, where $1 \leq i \leq n - 1$.

$T^*(v_{2i-1} v'_{2i-1}) = F_{6i-3}$, where $1 \leq i \leq n$

For each edge, $\gcd(T^*(v_{2i-1}), T^*(v'_{2i-1})) = \gcd(F_{6i-4}, F_{6i-2}) = 1$, where $1 \leq i \leq n$

$\gcd(T^*(v_{2i-1}), T^*(v_{2i})) = \gcd(F_{6i-4}, F_{6i}) = 1$, where $1 \leq i \leq n$

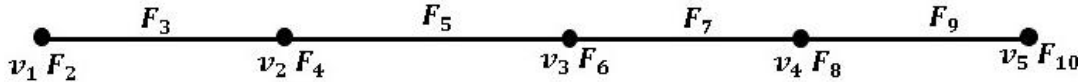
$\gcd(T^*(v_{2i}), T^*(v_{2i+1})) = \gcd(F_{6i}, F_{6i+2}) = 1$, where $1 \leq i \leq n - 1$

For each vertex, $\gcd(T^*(v_{2i} v_{2i+1}), T^*(v_{2i-1} v'_{2i-1})) = \gcd(F_{6i+1}, F_{6i-3})$

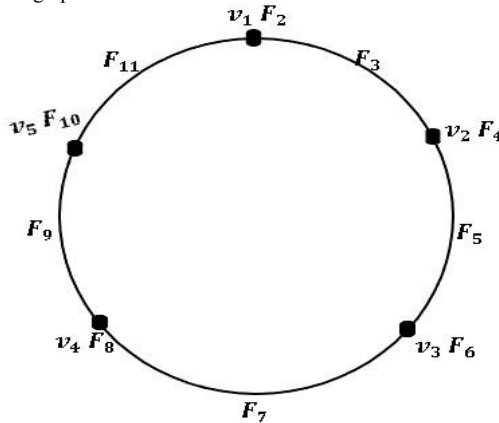
$\gcd(T^*(v_{2i} v_{2i+1}), T^*(v_{2i-1} v_{2i})) = \gcd(F_{6i+1}, F_{6i-1})$

Therefore, subdivision of edges in a path of a comb graph $S(P_n, K_1)$ is a Total Fibonacci Prime graph for $n \geq 2$.

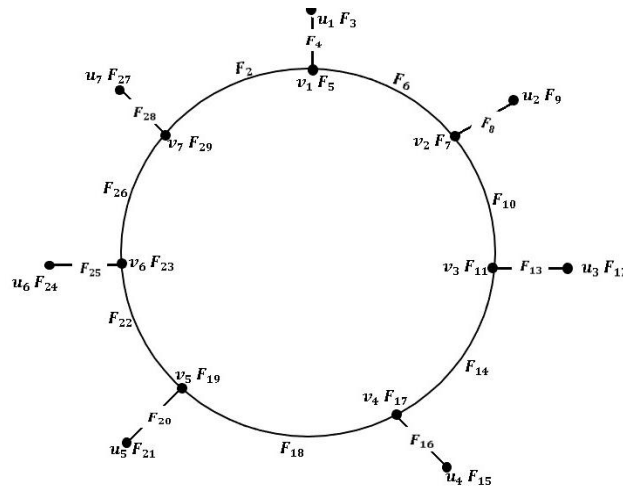
Example:1 Path graph P_5 is a Total Fibonacci Prime graph.



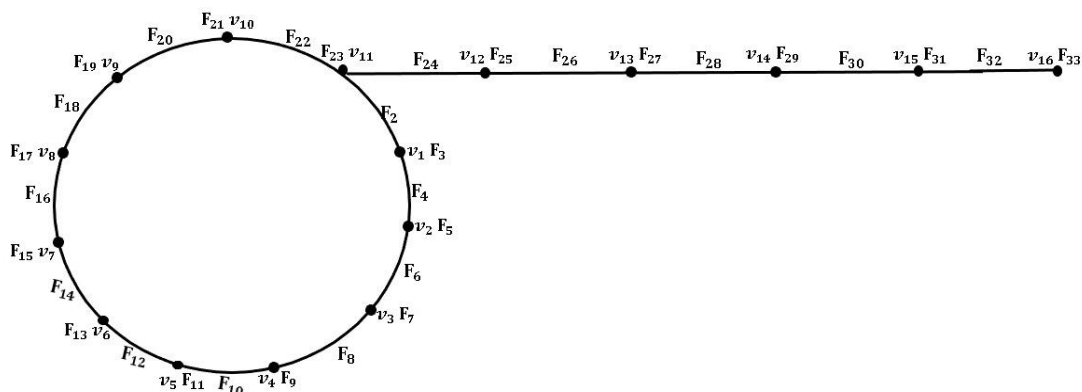
Example:2 Cycle graph C_5 is a Total Fibonacci Prime graph.



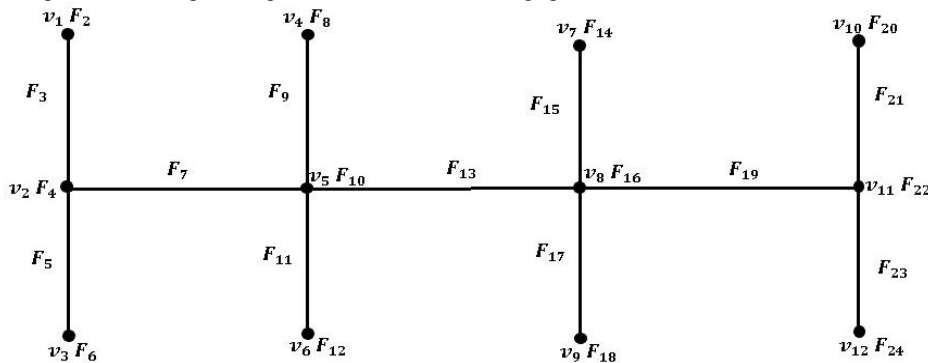
Example:3 Crown graph C_5^* is a Total Fibonacci Prime graph.



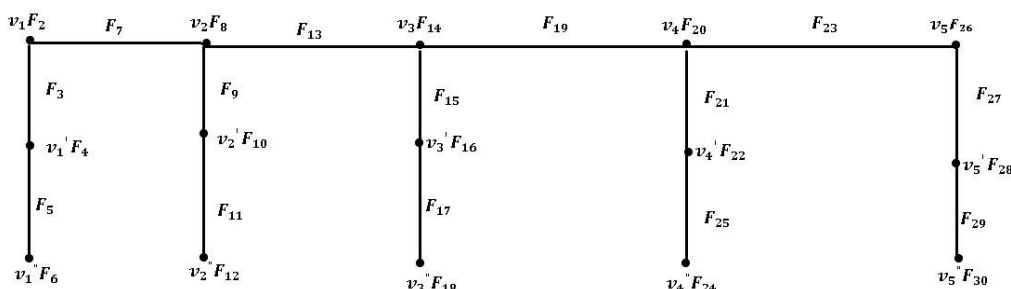
Example:4 Tadpole graph $T_{11,5}$ is a Total Fibonacci Prime graph.



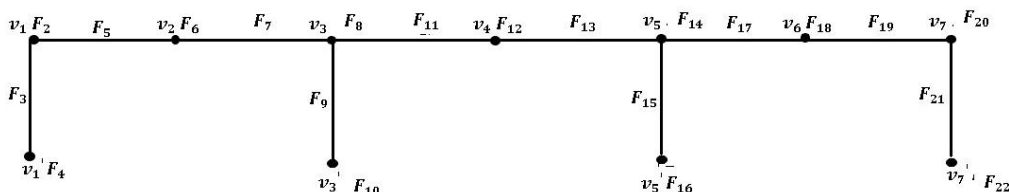
Example:5 (4,2) Centipede Graph is a Total Fibonacci Prime graph.



Example 6. Subdivision of pendent edges of a comb graph $S(P_5, K_1), n \geq 2$ is a Total Fibonacci Prime graph.



Example 7. Subdivision of edges in a path of a Comb graph $S(P_n, K_1), n \geq 2$ is a Total Fibonacci Prime graph.



3. CONCLUSION

In this paper we investigate the Path, Cycle, Tadpole graph, Crown graph, $(n, 2)$ Centipede Graph, Subdivision of comb graph for some cases are Total Fibonacci Prime graph.

4. REFERENCE

1. Bondy .J.A and Murthy U.S.R, *Graph Theory and Application*, North Holland, New York, 1976.
2. A. Tout, A.N. Dabbouey and K. Howalla, *Prime Labeling of graphs*, National Academy Science Letters, Vol.11, pg: 365-368, 1982.
3. C.Sekar, S.Chandrakala, *Fibonacci Prime Labeling of Graphs*, International Journal of Creative Research Thoughts (IJCRT), ISSN:2320-2882, Volume.6, Issue 2, pp.995 - 1101, April 2018.
4. S.Chandrakala and C.Sekar, *Fibonacci Prime Labeling of Udukkai and Octopus Graphs*, International Journal of Scientific Research and Reviews (IJSRR 2018), ISSN: 2279 – 0543, Vol- 07(2).
5. J. Jenifer, M. Subbulakshmi, *Fibonacci Prime Labeling of Snake related graphs*, South East Asian Journal of Mathematics and Mathematical Science, Print ISSN: 0972-7752, Online ISSN: 2582-0850, Volume 17 Issue Proceedings, November 2021, Pg 51-58.
6. M. Ravi (a) Ramasubramanian, R. Kala, *Total Prime Graph*, International Journal of Computational Engineering Research , Vol.2 Issue. 5, ISSN: 2250-3005, pg: 1588-1593, September 2012.